Copies of the General Catalog are available for examination in Iowa high schools, offices of the county superintendents of schools, public libraries, junior and community colleges, major state government offices in Des Moines, and in each office of the University. Copies may be requested from the bookstore at the Iowa Memorial Union at a cost of $10. Reprints of individual sections of the Catalog are available free of charge.

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 the Catalog is prepared. However, information on regulations, policies, fees, curricula, courses, and other matters is subject to change any time during the period for which the Catalog is in effect.

Current information regarding fees, important dates, and which courses are offered in a particular semester is printed in the Schedule of Courses, which is available before each term begins. The annual viewbook and publications such as The Transfer Guide and The Graduate Experience also include information on admission, fees, scholarships, student financial aid, housing, and student personnel services.

The University of Iowa prohibits discrimination in employment and in its educational programs and activities on the basis of race, national origin, color, creed, religion, sex, age, disability, veteran status, sexual orientation, gender identity, or associational preference. The University also affirms its commitment to providing equal opportunities and equal access to University facilities. For additional information on nondiscrimination policies, contact the Coordinator of Title IX, Section 504, and the ADA in the Office of Affirmative Action, The University of Iowa, 202 Jessup Hall, Iowa City, Iowa 52242-1316; telephone 319-335-0705 (voice) or 319-335-0697 (text).
# University Calendar

## Fall Semester

<table>
<thead>
<tr>
<th>Event</th>
<th>2000</th>
<th>2001</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classes begin</td>
<td>August 21</td>
<td>August 27</td>
</tr>
<tr>
<td>University holiday</td>
<td>September 4</td>
<td>September 3</td>
</tr>
<tr>
<td>Thanksgiving recess</td>
<td>November 22-26</td>
<td>November 21-25</td>
</tr>
<tr>
<td>University holidays</td>
<td>November 23-24</td>
<td>November 22-23</td>
</tr>
<tr>
<td>Classes end</td>
<td>December 8</td>
<td>December 14</td>
</tr>
<tr>
<td>Examination week</td>
<td>December 11-15</td>
<td>December 17-21</td>
</tr>
<tr>
<td>Commencement ceremonies</td>
<td>December 15-16</td>
<td>December 21-22</td>
</tr>
<tr>
<td>University holidays</td>
<td>December 25-26</td>
<td>December 24-25</td>
</tr>
</tbody>
</table>

## Spring Semester

<table>
<thead>
<tr>
<th>Event</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>University holiday</td>
<td>January 1</td>
<td>January 1</td>
</tr>
<tr>
<td>Martin Luther King Day</td>
<td>January 15</td>
<td>January 21</td>
</tr>
<tr>
<td>(University holiday)</td>
<td>January 16</td>
<td>January 22</td>
</tr>
<tr>
<td>Classes begin</td>
<td>January 16</td>
<td>January 22</td>
</tr>
<tr>
<td>Foundation day</td>
<td>February 25</td>
<td>February 25</td>
</tr>
<tr>
<td>Spring vacation</td>
<td>March 12-16</td>
<td>March 18-22</td>
</tr>
<tr>
<td>Classes end</td>
<td>May 4</td>
<td>May 10</td>
</tr>
<tr>
<td>Examination week</td>
<td>May 7-11</td>
<td>May 13-17</td>
</tr>
<tr>
<td>Commencement ceremonies</td>
<td>May 10-13</td>
<td>May 16-19</td>
</tr>
</tbody>
</table>

## Summer Session

<table>
<thead>
<tr>
<th>Event</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>May summer session</td>
<td>May 14-June 1</td>
<td>May 20-June 7</td>
</tr>
<tr>
<td>University holiday</td>
<td>May 28</td>
<td>May 27</td>
</tr>
<tr>
<td>Eight-week summer session</td>
<td>June 4-July 27</td>
<td>June 10-August 2</td>
</tr>
<tr>
<td>(first day is registration)</td>
<td>June 18-July 27</td>
<td>June 24-August 2</td>
</tr>
<tr>
<td>Six-week summer session</td>
<td>July 4</td>
<td>July 4</td>
</tr>
<tr>
<td>(first day is registration)</td>
<td>July 27</td>
<td>August 2</td>
</tr>
<tr>
<td>University holiday</td>
<td>July 30-August 17</td>
<td>August 5-23</td>
</tr>
<tr>
<td>Commencement ceremonies</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Independent study unit for</td>
<td></td>
<td></td>
</tr>
<tr>
<td>law and graduate students</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Some dates may change; the most up-to-date academic calendar is available on the Internet: [http://www.uiowa.edu/registrar](http://www.uiowa.edu/registrar)

## Campus visits for Prospective Students

The best introduction to The University of Iowa is a visit to the campus. Come first to the John G. Bowman House Admission Visitors Center, 230 N. Clinton. Office hours: weekdays 8:30 a.m. to 4:30 p.m. and selected Saturday mornings. It is best to visit the campus on weekdays, when classes are in session and when other University offices are open. Please call the Office of Admissions to arrange for a campus visit: toll-free 1-800-553-IOWA (4692), nationwide; direct dial 319-335-3847.

Visit The University of Iowa via the Internet: [http://www.uiowa.edu](http://www.uiowa.edu)
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The University of Iowa is a major national research university with a solid liberal arts foundation. Established in 1847 as Iowa’s first public institution of higher education, it has won international recognition for its wealth of achievements in the arts, sciences, and humanities. Iowa was the first U.S. public university to admit men and women on an equal basis and the first institution of higher education in the nation to accept creative work in theater, writing, music, and art as theses for advanced degrees. It established the first law school west of the Mississippi, broadcast the world’s first educational television programs, and developed and continues to hold preeminence in educational testing.

The home of pioneering space research, Iowa has designed and built research instruments for many space probes, including current deep space missions Pioneer 10, Voyagers 1 and 2, Galileo, and Cassini. Its research programs in genetics, hydraulics, and speech and hearing also are world renowned, as are its innovations in agricultural medicine, biocatalysis, biomedical engineering, and pharmacology education. The University recently was chosen by the federal government as the location for the most technically advanced driving simulator in the world.

The University of Iowa has one of the most extensive research library systems in the country and operates one of the nation’s most advanced and comprehensive university-owned teaching hospitals.

A member of the select Association of American Universities, an organization of institutions recognized for excellence in research, The University of Iowa maintains a balance between scholarly research and teaching. It places strong emphasis on undergraduate, international, and interdisciplinary education and brings undergraduate, graduate, and professional students together with distinguished teachers and scholars in a close-knit, intellectual community.

liberal Arts at Iowa: Education for life

A program of study in the liberal arts is considered “education for life” at The University of Iowa. The College of Liberal Arts has the largest enrollment among the University’s eleven colleges and is the college in which most undergraduate students first enroll, including those who later transfer into one of the nine professional colleges.

Professional education is provided through the Tippie College of Business and the Colleges of Dentistry, Education, Engineering, Law, Medicine, Nursing, Pharmacy, and Public Health. The Graduate College provides leadership in development, review, and oversight of graduate programs.

The University’s faculty members bring outstanding and diverse backgrounds in research and education to their teaching assignments. Many have been recognized for their accomplishments as teachers and scholars with awards including Fulbright scholarships for teaching and study abroad, Guggenheim Fellowships, MacArthur Fellowships, fellowships from the National Endowment for the Arts and the National Endowment for the Humanities, Pulitzer Prizes, and induction into the National Academy of Arts and Sciences and the American Academy of Arts and Letters. Three are Howard Hughes Medical Institute (HHMI) investigators—each in biochemistry, internal medicine, and physiology and biophysics. In a typical year, 88 percent of Iowa’s distinguished faculty has teaching contact with undergraduate students.

The University reaches out to all segments of society. It seeks applicants who are high achievers and at the same time serves a broad cross section of students. Approximately 28,000 students enroll at Iowa during fall and spring semester. Some 68 percent come from Iowa, 20 percent from adjoining states, and 6 percent from the remaining states. International students from 105 countries make up 6 percent of the University’s enrollment.

Wealth and Diversity of Programs, Resources

The Iowa Center for the Arts provides the stimulus and setting for professional-level theater, dance, and musical performances by students and faculty as well as by visiting artists from around the world. Hancher Auditorium, named by the National Endowment for the Arts as one of 21 exemplary arts-presenting organizations in the nation, offers its patrons a wide selection of programs by established and innovative performance ensembles and concert artists. The Museum of Art displays outstanding permanent collections, works by faculty and students, and traveling exhibits year-round, and the Writers’ Workshop, the Playwrights Workshop, and the International Writing Program help make the University and Iowa City one of the nation’s most prominent arts communities.

The University of Iowa Hospitals and Clinics, together with the Colleges of Dentistry, Medicine, Nursing, Pharmacy, and Public Health, provides specialized health care to Iowans as well as to patients from other states and nations. It also provides the clinical base for education of the University’s health science students. Teams of faculty, clinical support specialists, and students study and learn as they care for patients. University Hospitals and Clinics also serves as a resource for community hospitals and health professionals throughout the state, participates in outreach programs to rural Iowans, and attracts millions of visitors to its innovative Virtual Hospital site on the World Wide Web.

In athletics, the Iowa Hawkeyes enjoy national recognition and enduring fan loyalty as leaders in football, men’s and women’s basketball, wrestling, field hockey, softball, swimming, gymnastics, and women’s rowing. A member of the Big Ten athletic conference, Iowa offers 12 Intercollegiate sports for women and 10 for men. For students not on the intercollegiate teams, the University offers a broad choice of intramural teams and other recreational activities.

The University’s 1,900-acre campus, located on the Iowa River, includes more than 100 major buildings, most within walking distance of each other.

The central landmark of the campus is Old Capitol, which served from 1842 until 1846 as the last capitol building for Iowa’s territorial government. It then housed the legislature and government offices for the state of Iowa until 1857, when state government moved to Des Moines. Built in Greek revival style during the early 1840s, Old Capitol was restored as a National Historic Landmark and opened to the public in 1976.

A major attraction and educational facility at the University is Iowa Hall, a 6,000-square-foot gallery in the Museum of Natural History in Macbride Hall that presents life-like exhibits of scenes from Iowa’s four billion years of natural history. The museum itself houses more than one million specimens of plant and animal life.

In addition to the Iowa City campus, there are University research and field study facilities at the nearby Oakdale campus, at the Macbride Nature Recreation Area north of Iowa City, and at the Lakeside Laboratory on Lake Okoboji in northwest Iowa.

Iowa City

A forward-looking community provides a special setting for The University of Iowa. Iowa City is casual and cosmopolitan, a meeting place for scholars, artists, and scientists. The relationship between Iowa City and the University is friendly, cooperative, and supportive. Faculty and staff share the responsibilities of community government and service with people outside the University. Together they create an environment for growth in learning and business, in health and social well-being.

A community of 60,000 people, Iowa City lies within 300 miles of Chicago, Minneapolis, and St. Louis. The city is accessible from major highways, by major bus lines, and by airlines serving the Eastern Iowa airport in Cedar Rapids.
Learning at Iowa

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ACADEMIC PROGRAMS

The University of Iowa is one of Iowa’s three state universities. With Iowa State University and the University of Northern Iowa, it is governed by the State Board of Regents.

The College of Liberal Arts is the core of the University. It is closely linked with the professional colleges of Business, Dentistry, Education, Engineering, Law, Medicine, Nursing, Pharmacy, and Public Health, and with the Graduate College. All 11 colleges are located on the Iowa City campus.

The University faculty includes some 1,700 full-time members, many of whom have established national and international reputations. Their effectiveness as teachers is enhanced by their involvement in scholarly and scientific research. Some faculty members from the University’s professional colleges also teach undergraduate classes, including a number of interdisciplinary courses in the College of Liberal Arts.

The University’s undergraduate student enrollment is about evenly divided between men and women. Approximately two out of three undergraduates are Iowa residents. The rest are students from the other 49 states and 106 foreign countries.

About 87 percent of the University’s entering freshmen had a B average or above in high school. Approximately 89 percent ranked in the upper half of their high school classes and about 21 percent ranked in the upper one-tenth.

The University of Iowa offers a comprehensive program of student financial aid. In academic year 1998-99, approximately 50 percent of undergraduates received scholarships and grants from University and private sources; 60 percent of all students had some form of employment; and 57 percent had education loans. Most University scholarships are awarded on the basis of demonstrated financial need and academic excellence, with a number of scholarships from both University and private sources awarded solely for scholarly achievement.

Reflecting a growing trend toward lifelong learning, the University in recent years has expanded educational programs substantially, both on and off campus, for individuals who cannot enroll as regular full-time students. These learning opportunities include minicourses, conferences, workshops, continuing education programs for professionals, Saturday and evening-classes offered on campus, and credit courses taught off campus. In 1977 the University, in cooperation with Iowa’s other two state universities, introduced a Bachelor of Liberal Studies (B.L.S.) degree program designed for adults who want to earn a college degree but are unable to enroll in traditional on-campus study.

Degrees Offered

The University offers the following degrees. The major fields are listed in the various college sections of the Catalog.

Bachelor of Arts, Bachelor of Business Administration, Bachelor of Fine Arts, Bachelor of Liberal Studies, Bachelor of Music, Bachelor of Science, Bachelor of Science in Engineering, Bachelor of Science in Medicine, Bachelor of Science in Nursing, Doctor of Dental Surgery, Doctor of Medicine, Doctor of Musical Arts, Doctor of Pharmacy, Doctor of Philosophy, Education Specialist, Juris Doctor, Master of Accountancy, Master of Arts, Master of Arts in Teaching, Master of Business Administration, Master of Computer Science, Master of Fine Arts, Master of Health Administration, Master of Laws, Master of Public Health, Master of Physical Therapy, Master of Physician Assistant Studies, Master of Science, Master of Science in Nursing, and Master of Social Work.

Accreditation and Associations

The University of Iowa is accredited by the Commission on Institutions of Higher Education, part of the North Central Association of Colleges and Schools (NCA). One of six regional-institutional accrediting associations in the United States, the NCA is widely recognized as the premier membership organization for educational institutions committed to developing and maintaining high standards of excellence. The University of Iowa has been an accredited member of the NCA since 1913. NCA accreditation extends to all academic programs offered by the University.

In addition, many of the University’s individual colleges, departments, and programs are approved by specialized accreditation organizations that monitor standards for specific fields of professional study. For information about specialized accreditation of individual University programs, contact the appropriate departmental or collegiate office or the Office of the Provost.

The University joined the Western [Big Ten] Conference in 1899 and the Association of American Universities (AAU) in 1909. The AAU is a member of the American Council on Education and often coordinates its activities with other higher education organizations, particularly with the National Association of State Universities and Land-Grant Colleges (NASULGC), the Council of Graduate Schools (CGS), and the Council on Governmental Relations (COGR). The University also participates in the Committee for Institutional Cooperation (CIC), the academic consortium of the Big Ten universities and the University of Chicago.

Academic Sessions

The University’s academic year consists of two semesters of approximately 16 weeks each. The University also conducts a summer session with terms of three, six, and eight weeks. An independent study unit follows the end of the summer session.

Academic Recognition

Degrees with Distinction

The University recognizes high scholastic achievement by awarding degrees “with distinction,” “with high distinction,” and “with highest distinction,” based on the following criteria.

Undergraduate Colleges (except Pharmacy)

Highest distinction-highest 2 percent
High distinction-next highest 3 percent
Distinction-next highest 5 percent

College of Pharmacy

Highest distinction-grade-point average of 3.75 and higher
High distinction-grade-point average of 3.50 to 3.74
Distinction-grade-point average of 3.25 to 3.49

Dean’s list

Undergraduate students who achieve a grade-point average of 3.50 or higher on 12 or more semester hours of graded work [excluding UI Guided Correspondence Study courses] during a given semester and who have no hours of I (incomplete) or 0 [no grade reported] during the same semester are recognized by inclusion on the Dean’s List for that semester.

President’s List

Undergraduate students who achieve a grade-point average of 4.00 on 12 or more semester hours of graded work and who have no hours of I (incomplete) or 0 (no grade reported) for two consecutive semesters [excluding summer sessions] are recognized by inclusion on the President’s List.

Graduation with Honors

See “University Honors Program” in this section of the Catalog.

Honorary and Professional Societies

Phi Beta Kappa, Sigma Xi, Mortar Board, and Omicron Delta Kappa are among 64 national honorary and professional societies that have active chapters on The University of Iowa campus.
Course Numbering

Each course in the regular University curriculum has an identifying number, preceded by the number of the college, department, or program that administers the course. For example, "002:001" is the code for the course numbered 001 in the Department of Biological Sciences (2), entitled “Introduction to Botany.” Course numbers below 100 designate courses primarily for undergraduates, numbers 100 to 199 designate courses for undergraduates and graduates, and numbers 200 and above designate courses primarily for graduates.

Tippie College of Business
6A Accounting
6B Business Administration
6E Economics
6F Finance
6J Management and Organizations
6K Management Sciences
6M Marketing
6N M.B.A. Program
6T Business Administration Nondepartmental
620 Business Nondepartmental

College of Dentistry
82 Operative Dentistry
83 Endodontics
84 Prosthodontics
86 Oral Pathology, Radiology, and Medicine
87 Oral and Maxillofacial Surgery
89 Orthodontics
90 Pediatric Dentistry
92 Periodontics
111 Preventive and Community Dentistry
112 Dentistry Nondepartmental
114 Family Dentistry
151 Oral Science

College of Education
7B Planning, Policy, and Leadership
7C Counseling, Rehabilitation, and Student Development
7D Educational Administration
7E Elementary Education
7F Social Foundations of Education
7H Higher Education
7P Educational Psychology, Measurement, and Statistics
7S Secondary Education
7U Special Education
7W Instructional Design and Technology
7X Education Interdivisional

College of Engineering
51 Biomedical Engineering
52 Chemical and Biochemical Engineering
53 Civil and Environmental Engineering
55 Electrical and Computer Engineering
56 Industrial Engineering
57 Engineering Core
58 Mechanical Engineering

Graduate College
21 Library and Information Science
22A Applied Mathematical and Computational Sciences
102 Urban and Regional Planning
127 Genetics
132 Neuroscience
136 Quality Management and Productivity
142 Molecular Biology
148 Immunology
150 Third World Development Support
156 Biosciences
160 Rhetorics of Inquiry
164 Second Language Acquisition
650 Graduate Nondepartmental

College of Law
91 Law
660 Law Nondepartmental

College of Liberal Arts
BLS Bachelor of Liberal Studies
L Iowa Lakeside Laboratory
1A Fundamentals of Art
1B Elements of Art
1C Ceramics
1D Design
1E Art Education
1F Drawing
1G Metalworking and Jewelry
1H Art History
1J Multimedia and Video Art
1K Painting
1L Photography
1M Printmaking
1N Sculpture
1P Art Interdepartmental
1X Papermaking
1Y Bookbinding
1Z Calligraphy
2 Biological Sciences
3 Speech Pathology and Audiology
4 Chemistry
6 Prebusiness
6E Economics
8 English
8C Creative Writing-Writers’ Workshop
8G General Education- Literature
8L English Language and Linguistics Instruction
8N Nonfiction Writing
8P English Professional
8W English Writing
9 French
10 Rhetoric
12 Geoscience
13 German
14 Greek
15 Open Major
16 History
16A American History
16E European History
16W World History
18 Italian
19 Journalism and Mass Communication
20 Latin
22C Computer Science
22M Mathematics
22S Statistics and Actuarial Science
23 Military Science
23A Aerospace Studies (Air Force ROTC)
24 Museum Studies
25 Music
26 Philosophy
27 Exercise Science
28 Health, Leisure, and Sport Studies
28S Physical Education Skills
29 Physics and Astronomy
30 Political Science
31 Psychology
32 Religion
33 Literature, Science, and the Arts
34 Sociology
35 Spanish
36 Communication Studies
36C Communication
36D Production Studies
36F Film Studies
36G Interpersonal and Small Group Communication
36M Media Studies
Academic Programs

Marking System

The University uses a letter grading system for individual courses but computes grade-point average according to a numerical scale. Grade-point averages are displayed at the bottom of students' grade reports and are truncated so as not to exceed 4.00. All of the following marks appear on the permanent record.

<table>
<thead>
<tr>
<th>Grade and Grade Points for Each Description Semester Hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grade Points</td>
</tr>
<tr>
<td>---------------</td>
</tr>
<tr>
<td>A+ 4.33</td>
</tr>
<tr>
<td>A 4.00</td>
</tr>
<tr>
<td>B+ 3.33</td>
</tr>
<tr>
<td>B 3.00</td>
</tr>
<tr>
<td>C+ 2.33</td>
</tr>
<tr>
<td>C 2.00</td>
</tr>
<tr>
<td>D+ 1.33</td>
</tr>
<tr>
<td>D 1.00</td>
</tr>
<tr>
<td>Failing 0</td>
</tr>
</tbody>
</table>

Other marks on the permanent record:

- S = Satisfactory
- P = Pass
- U = Unsatisfactory (Graduate College only)
- N = Nonpass
- I = Incomplete
- 0 = No grade reported
- R = Registered
- W = Withdrawn
- # = Second-grade-only option
- * = Honors

The College of Law uses a numeric grading system.

Four-Year Graduation Plan

The four-year graduation plan is a partnership between students and the University. Students who sign the four-year graduation plan agree to a number of conditions that guide their studies and their progress toward a degree. The University's colleges and departments also agree to certain conditions. They ensure the availability of courses that students need for graduation; they also guarantee that they will provide certain remedies to a student facing a delay in graduation due to lack of a course, as long as the student has met the conditions of the four-year plan. The Colleges of Business, Engineering, Liberal Arts, and Nursing participate in the four-year graduation plan.

Only students who enter the University directly from high school are eligible to participate in the four-year graduation plan. General information on the four-year plan is available from the Office of Admissions. Information also is available from the participating colleges.
UNIVERSITY HONORS PROGRAM

Web site: http://www.uiowa.edu/-honors

The University of Iowa Honors Program offers special academic, cultural, and social opportunities to outstanding students in the Tippie College of Business and the Colleges of Education, Engineering, Liberal Arts, Nursing, and Pharmacy. Membership in the University Honors Program is open to any undergraduate student enrolled at The University of Iowa who maintains a University of Iowa grade-point average of 3.20 or higher. Honors students must maintain this average to remain in good standing in the honors program.

Students entering the University directly from high school are automatically admitted to the University Honors Program if they fulfill one of the following requirements:

- rank in the top 10 percent of their high school graduating class, and have a composite ACT score of 29 or an equivalent SAT score;
- rank in the top 15 percent and have an ACT composite score of 30-32;
- rank in the top 20 percent and have an ACT composite score of 33 or higher.

National Merit Scholars, Presidential Scholars, Deans Scholars, National Achievement Scholars, and Opportunity at Iowa Academic Scholars also are automatically admitted to the program.

Academic Opportunities

The Honors Program offers its students a diverse set of academic courses as well as opportunities to work directly with faculty members as research assistants and teaching interns. Honors courses are not more difficult than other courses; they are different because they can offer personalized work with professors, interaction with academic peers, energetic discussion, and thorough exam preparation. Students in honors courses do not compete against each other for grades, so every student can excel. Participation in honors courses is indicated on the student’s transcript.

Honors Courses

Students may complete the College of Liberal Arts General Education Program, satisfy requirements in their major, or take electives through the Honors Program.

Each semester the program features a variety of honors seminars-introductory courses on exciting topics in the humanities, social sciences, and natural sciences. Honors seminars are taught by top University faculty members, and class size is never more than 20 students. Seminar topics vary each semester.

Students also may take honors sections of courses on a wide range of subject areas. Almost all honors seminars and sections are approved for General Education, and many satisfy major requirements.

Through Honors Designation, students also may take any course as an honors course. Students pursuing an Honors Designation must consult with the course’s instructor by the end of the third week of the semester, agree on alternate work to enrich the course, and fill out the Honors Designation form, which is available from the University Honors Program office. If successfully completed, the course will be designated as “honors” on the student’s transcript.

Honors Commendation

Students who take at least four honors courses, with a grade of B or higher in each graded course, before they have completed their second year or their first 59 semester hours (whichever comes last) receive Honors Commendation. Honors Commendation includes a certificate of commendation from the Honors Program and an award letter from the University’s president and the Honors Program director.

Honors Internship

The Cooperative Education Honors Internship (143:100) gives undergraduate students an opportunity to explore professional careers in a structured academic setting. It is designed for first- and second-year honors students but is open to all students who are members of the honors program.

Each student selects a professional in his or her chosen field from a master list kept by the honors program. Students also may identify other professionals willing to serve as mentors. Students complete a journal and prepare a brief presentation on their experiences. The internship carries no academic credit and may be repeated once.

Honors Studies

Honors students may carry out independent study, guided by a faculty member, of subject matter not duplicated in other courses offered on campus. Both individual study (143:040) and group study (143:041) are available. At the end of the semester, the faculty guide certifies that the study plan has been completed satisfactorily. The independent study courses carry 1-3 semester hours of credit and may be repeated once.

Honors Service learning

Honors service learning projects, supervised by a faculty member, can be arranged by individual students (143:042) or by groups (143:043). Students file a plan of study and service before the semester begins, and their faculty guide certifies satisfactory completion of the work at the semester’s end. The service learning courses carry 1-3 semester hours of credit and may be repeated once.

Honors Research Practicum

The Honors Research Practicum (143:000) allows honors students to earn 1-3 semester hours of credit graded satisfactory/fail by working as research assistants for faculty members. Honors students who wish to participate are matched with a faculty member whose research interests complement their own.

Honors Teaching Practicum

Honors students are able to assist faculty members as teaching practicum students in first-year and sophomore-level courses or other approved courses. Each teaching practicum student is matched with a faculty member from whom the student might benefit in his or her own academic program. Although duties vary from course to course, practicum students are expected to maintain regular office hours for consultation with students and to conduct review sessions when appropriate. Honors teaching practicum students receive academic credit through Honors Teaching Practicum (143:101).

Honors in the Major

Most majors offer upper-level honors courses, honors seminars, independent research, and/or the opportunity to pursue an original senior honors thesis or project under the guidance of a faculty member. Each college and department has a faculty member who serves as its honors adviser. After students declare a major in the College of Liberal Arts or enter the College of Business, Education, Engineering, Nursing, or Pharmacy, they should speak with their collegiate or departmental honors adviser about their academic program.

Graduation with Honors

Successful completion of all departmental honors requirements leads to a baccalaureate degree with honors in the major. Students who graduate with honors receive special recognition during commencement ceremonies. Other student academic awards and accomplishments are celebrated at the Honors Awards Ceremony each spring.

Scholarship Advising

The Honors Program helps students prepare to apply for a variety of scholarship awards and prizes. The program offers its own Rhodes Dunlap Scholarships of $3,000 each to selected continuing honors-students in all colleges, as well as Rhodes Dunlap Research Grants of up to $300 each for students working to complete senior honors theses or projects. These scholarships are made possible by a bequest from Professor Rhodes Dunlap, the program’s founder and director for more than 20 years. Announcements concerning the Dunlap awards and other Honors Program scholarships are made through the Honors Program newsletter and listserve.

Every year, students from The University of Iowa Honors Program are awarded national and international scholarships. Information, advice, and encouragement for potential Rhodes Scholars, Marshall Scholars, Truman Scholars, Goldwater Scholars, National Science Foundation Scholars, and recipients of other scholarships are available through the Shambaugh House Honors Center.

Honors House

The home for the Honors Program is a turn-of-the-century Victorian house, now named the Shambaugh House Honors Center. It was a
Arts Program

The Honors Program encourages all of its members to take part in its arts program, which nurtures appreciation and knowledge of the arts. The arts program purchases tickets so that groups of honors students can attend music, dance, and theater events at Hancher Auditorium and University Theatres at no cost. Events often are preceded by a brief presentation on the performance, given either by a University faculty member or by the performers themselves.

The Honors Program also sponsors receptions for University guests and lecturers, giving honors students the opportunity to meet informally with these experts and professionals. In addition, the program sponsors a diversity series-lunchtime discussions with visiting scholars and University faculty members-as well as student memberships in the Foreign Relations Council lunch series.

Associated Iowa Honors Students

The Associated Iowa Honors Students (AIHS) is open to all University Honors Program students. AIHS is an excellent way to get involved in the Honors Program and to meet other students, engage in fun activities, and do charitable work in the Iowa City area.

Courses

143:000 Cooperative Education Honors Internship
0 s.h.
Exploration of professional careers; arranged by student and a professional in the student’s chosen field, who certifies satisfactory completion of a journal and presentation.

143:040 Honors Studies  arr.
Independent study arranged by student and faculty member, who certifies satisfactory completion of plan of study/performance.

143:041 Honors Group Studies  arr.
Group independent study arranged by students and faculty member, who certifies satisfactory completion of plan of study/performance.

143:042 Honors Service Learning  arr.
Service learning project arranged by student and faculty member, who certifies satisfactory completion of plan of study and service.

143:043 Honors Group Service Learning  arr.
Group service learning project arranged by students and faculty member, who certifies satisfactory completion of plan of study and service.

143:050 Honors Seminar in Humanities 3 s.h.
Small-class experience with a regular faculty member on a central topic of concern. Open only to honors students. GE: humanities.

143:060 Honors Seminar in Social Sciences 3 s.h.
Small-class experience with a regular faculty member on a central topic of concern. Open only to honors students. GE: social sciences.

143:070 Honors Seminar in Natural Sciences 3 s.h.
Small-class experience with a regular faculty member on a central topic of concern. Open only to honors students. GE: natural sciences (non-lab).

143:100 Honors Research Practicum 1-3 s.h.
Individual research in conjunction with a faculty member’s research. Open only to honors students. May be repeated.

143:101 Honors Teaching Practicum 3 s.h.
Teaching internship in first year and sophomore liberal arts courses. May be repeated.

ADMISSION

Web site: http://www.uiowa.edu/admissions

Prospective students interested in enrolling in any of The University of Iowa’s 11 colleges should contact the Office of Admissions to request application forms and application instructions for both admission and University housing. Applicants can download application forms and apply to the University via the admissions web site.

All applicants must submit formal applications, official transcripts, test scores, and other required supporting material to the Office of Admissions. For specific admission standards of the respective colleges, refer to the appropriate collegiate sections of the Catalog.

ACT and SAT I Scores

All entering first-year and undergraduate transfer students who present fewer than 24 semester hours of transferable work are required to complete the American College Test (ACT) or Scholastic Assessment Test (SAT I) and have their scores reported to the University in support of their application for admission. The Office of Admissions recommends that students complete the ACT or SAT I during the spring of their junior year of high school or the following summer.

The scores from these exams are used as a criterion for admission, for placement purposes, for advising, and for awarding University-administered scholarships and loans.

Graduate and Professional College Examinations

Prospective Graduate College applicants are required to take the Graduate Record Examination (GRE) General Test or, if applying for admission to a program in the College of Business other than economics, the Graduate Management Admission Test (GMAT). The Pharmacy College Admission Test (PCAT) is required for students applying to the College of Pharmacy. Prospective students of the Colleges of Dentistry, Law, or Medicine are required to take admission tests of the respective colleges.

Application Fees

A $30 application fee must accompany applications submitted by prospective students not previously enrolled in a degree program at the University. The application fee for international students is $50. Application fees are not refundable.

Re-entry

Undergraduate students who have been absent from the University for 12 months or more and graduate students who have been absent for 36 months or more must apply to the Office of Admissions for re-entry.

Students who have been enrolled in another college or university after leaving The University of Iowa are required to submit official transcripts along with their application for re-entry. Undergraduate students must submit a $20 re-entry fee with their application. The re-entry fee for graduate students is $30 ($50 for international students).

Application Deadlines

U.S. Citizens

Entering first-year students are urged to apply early in the fall of their senior year to arrange for University housing and to apply for financial aid. Entering transfer students and graduate students are encouraged to apply well in advance of the session in which they plan to enroll. All application materials are due in the Office of Admissions by the deadlines listed below. International students have earlier application deadlines (see “International Students,” below).

College of Liberal Arts: May 15 for summer session, May 15 for fall semester, November 15 for spring semester.

Tippie College of Business: April 1 for summer session, April 1 for fall semester, November 1 for spring semester.

College of Dentistry: D.D.S. program, fall admission only; preliminary applications must be on file with the American Association of Dental Schools Application Service by November 1.

College of Engineering: May 15 for summer session, May 15 for fall semester, November 15 for spring semester; early application is advised since enrollment may reach capacity far in advance of the beginning of classes.

Graduate College: General Graduate College deadlines are April 15 for summer session, July 15 for fall semester, December 1 for spring semester; international applicants have earlier application deadlines (see “International Students”). Individual departments and programs may have earlier deadlines, which are indicated in their materials. All departmental materials should be reviewed carefully for information about early deadlines. To be considered for graduate awards, students must apply by February 1 for the fall semester.

College of Law: J.D. program, March 1 for summer or fall admission; LL.M. program, March 1 for fall or spring admission.

College of Medicine: M.D. program, fall admission only; preliminary applications must be submitted to the American Medical Colleges
Applicants must satisfy all application procedures and submit their complete application file to the Office of Admissions by the following dates.

Graduate College: For students applying to The University of Iowa for financial assistance (scholarships, fellowships, assistantships), February 1 for summer session or fall semester, October 1 for spring semester; for students not applying for financial support, March 1 for summer session, April 15 for fall semester, October 1 for spring semester.

Note: The preceding deadlines are general Graduate College deadlines. Many individual departments and programs have earlier deadlines, which are indicated in their materials. All departmental materials should be reviewed carefully for information about early deadlines.

College of Business: March 1 for summer session, April 15 for fall semester, October 1 for spring semester.

College of Dentistry: D.D.S. program, fall admission only; preliminary applications must be on file with the American Association of Dental Schools Application Service by November 1.

College of Engineering: March 1 for summer session, April 15 for fall semester, October 1 for spring semester.

College of Law: J.D. program, March 1 for summer or fall admission; LL.M. program, March 1 for fall admission.

College of Liberal Arts: March 1 for summer session, April 15 for fall semester, October 1 for spring semester.

College of Nursing: March 1 for fall semester, October 1 for spring semester.

College of Pharmacy: February 1 for fall semester only.

Determined Residence

Each person enrolling at The University of Iowa is classified as an Iowa resident or nonresident for admission, tuition, and fee purposes. The classification is made by the University registrar or someone designated by the University registrar, according to criteria established by the State Board of Regents and on the basis of information provided by the student and all other relevant information. The criteria may be

found under "Iowa Administrative Code: Board of Regents” at the back of the Catalog.

English Proficiency

Non-native Speakers

The University’s English proficiency requirement assures that nonnative speakers know English well enough to study without being hindered by language problems, to understand lectures, and to participate successfully in class discussions.

U.S. Citizens and Permanent Residents

UNDERGRADUATE APPLICANTS

U.S. citizens and permanent residents whose native language is not English are required to take an English proficiency evaluation as part of the Orientation/Registration program. Exceptions to this requirement are made for students whose ACT English score is 21 or higher (SAT I verbal score of 470 or above) and for those who score 600 or higher on the TOEFL paper-based test (250 on the TOEFL computer-based test).

Based on the result of the evaluation, these students may

- be allowed to take a full academic course load, excluding any English as a Second Language (ESL) courses;
- be required to enroll in credit-bearing ESL courses;
- or
- be required to enroll in the Iowa Intensive English Program until their language proficiency reaches an appropriate level.

Applicants seeking exceptions are directed to the Office of Admissions.

International Students

All international applicants to the University whose native language is not English are required to submit scores on the Test of English as a Foreign Language (TOEFL) in addition to their applications for admission and supporting academic documents. Automatic waivers from this requirement are granted for persons who hold a baccalaureate or more advanced degree from a university in the United States, the United Kingdom, Canada (excluding French Quebec), Africa (English speaking), Australia, or New Zealand.

INTERNATIONAL STUDENTS

TOEFL requirements for admission, but whose scores fall between 450 and 530 on the TOEFL paper-based test (between 133 and 193 on the TOEFL computer-based test), may be considered for conditional admission to the College of Liberal Arts. As space permits, conditionally admitted students enroll in the Iowa Intensive English Program for up to one year. To change their admission status from conditional to regular (a prerequisite for beginning study in a degree program), students must attain a minimum score of 530 on the TOEFL paper-based test (197 on the TOEFL computer-based test) and complete an English proficiency evaluation.

Based on the result of the evaluation, these students may

- be allowed to take a full academic course load, excluding any English as a Second Language (ESL) courses;
- be required to enroll in credit-bearing ESL courses;
- or
- be required to continue in the Iowa Intensive English Program until their language proficiency reaches an appropriate level.

Applicants without TOEFL scores or with scores below 450 on the TOEFL paper-based test (133 on the computer-based test) are not considered for admission to the University. These students may enroll in the Iowa Intensive English Program (IIEP). However, IIEP enrollment without conditional admission to the College of Liberal Arts does not imply or guarantee admission to an academic program at The University of Iowa.

Applications for IIEP should be submitted two months before the beginning of the term to allow time for admission, obtaining a student visa, and making travel arrangements. Students may begin IIEP studies in August, January, or May. For more information and IIEP application materials, write to the Iowa Intensive English Program at The University of Iowa.

GRADUATE APPLICANTS

A minimum score of 550 on the TOEFL paper-based test (213 on the TOEFL computer-based test) is required for admission to the Graduate College. There is no conditional admission for graduate students who score below 550 on the TOEFL paper-based test (213 on the TOEFL computer-based test). Newly admitted graduate students who score below 600 on the TOEFL paper-based test (250 on the
Parents are encouraged to visit on a weekday is a visit to the campus. Students and their parents are encouraged to visit on a weekday, and appointments with faculty members are available at the University. Students also can explore University museums, libraries, and downtown Iowa City.

English Proficiency Evaluations
On-campus proficiency evaluations for newly admitted undergraduate and graduate students are conducted by the Department of Linguistics. Students are required to complete one credit-granting course in English as a Second Language or to enroll in the noncredit Intensive English Program, as specified by the Department of Linguistics, until their language proficiency reaches the appropriate level. Once such proficiency has been established, students are allowed to take a full academic course load, exclusive of English as a Second Language courses. Such students may begin their academic course work only upon the written recommendation of the coordinator of English as a Second Language. (Courses for non-native speakers of English are described under “Linguistics” in the College of Liberal Arts section of the Catalog)

Medical Information
The Student Health Service provides health care for registered students. After students are admitted to the University, they receive a medical history form, which they must complete, including all information about immunizations. Proof of immunity to measles is a prerequisite to registration. Completed medical history forms should be returned to the Student Health Service. For students who have health problems, the University recommends attending physician send a report to the Student Health Service so that continuing care can be provided.

Students admitted to health sciences programs that have a clinical component must provide proof of health insurance coverage at the time of registration. Students are notified of the minimum insurance standards after they are admitted.

International students at the University are required to have health insurance. A reasonably priced group insurance plan is available through the University.

Campus Visits
The best introduction to The University of Iowa is a visit to the campus. Students and their parents are encouraged to visit on a weekday when classes are in session.

Campus visits might include a meeting with an admission counselor or a general information session, a campus and residence hall tour, and an appointment with a faculty member or academic adviser in a particular area of study; or some visitors might prefer one of the Hawkeye Visit Day programs. Answers are provided to questions about academic programs, admission requirements, financial aid, campus life, housing, and the many student services available at the University. Students also can explore University museums, libraries, and downtown Iowa City.

Contact the Office of Admissions to arrange a visit.

Orientation Services
With the aid of representative student, faculty, and staff personnel, Orientation Services designs and conducts a wide variety of year-round programs to help new first-year, transfer, and international students make a successful transition to University life.

Once admitted to the University, students are required to attend an orientation/registration program before they begin classes. During orientation, new students learn about academic policies and procedures, take placement tests, meet with their academic advisers, complete their first registration, and become acquainted with University life through interaction with faculty, staff, and other students. Parents are encouraged to attend special parent orientation sessions conducted concurrently with the student programs.

First-year students admitted for fall semester are invited to attend an orientation/registration program during the summer or just before classes begin in August. Transfer students admitted for the fall semester may attend an orientation/registration program during the spring or summer or before classes begin in August. Students admitted for the spring semester may attend a session in December or during the week before the semester opens in January. Students admitted for the spring semester may attend an orientation program during the spring or just before classes start in June.

New international students attend an orientation program just before classes begin.

Services for Transfer Students
The Office of Admissions provides a variety of services to help prospective transfer students make a smooth transition to University life. Students are encouraged to contact the Office with questions concerning admissions criteria, programs of interest, transfer credit policies, and course equivalencies.

Admissions representatives annually visit each Iowa area community college and are available to answer questions via scheduled appointments, special transfer visit programs, written correspondence, or by telephone. A variety of written materials is available to help students understand programs and policies.

The Office of Admissions also maintains a transfer course equivalency system that provides accurate and consistent information on how individual courses from specific transfer institutions fit various degree programs at The University of Iowa. Admitted students receive a summary of this evaluation prior to their registration.

Registration • learning at iowa

REGISTRATION

All persons who attend University classes must first be admitted to the University and are required to register and pay the established tuition and fees. Students in the Graduate College and the Colleges of Business, Engineering, Liberal Arts, Pharmacy, Dentistry, Law, Medicine, and Nursing may audit courses with proper approval. Students who audit courses are assessed a fee based on the lowest number of semester hours for which the course is offered that semester.

Late Registration

Students are not permitted to register after the third week of the fall or spring semester or the first one-and-one-half weeks of the summer session.

Tuition and Fees

The University’s schedule of tuition and fees for full-time students, per semester, for the academic year 2000-2001 is stated below.

For undergraduate students: Tuition: $1,453 per semester. All fees are subject to change by action of the Board of Regents, State of Iowa.

For graduate students: Tuition: $5,334 per semester.

For M.B.A. students: Tuition: $11,815 per semester.

For international students: Tuition: $3,708 per semester.

For nonresidents: Tuition: $9,316 per semester.

For M.B.A. students: Tuition: $6,661 per semester.

For international students: Tuition: $6,129 per semester.

For nonresidents: Tuition: $17,710 per semester.

For nonresidents: Tuition: $2,784 per semester.

For international students: Tuition: $2,783 per semester.

For nonresidents: Tuition: $8,608 per semester.

For Hawkeye Memorial Union, libraries, laboratories, and gymnasium: free admission to some sports events and to student-faculty concerts; reduced rates for admission to University athletic events and theater productions and to performances by
visiting stage and concert artists; subscriptions to the student newspaper, The Daily Iowan, delivered to housing units; certain student hospital services; and other activities and services as announced.

Extension and correspondence fees do not provide for the benefits listed above.

**Payment of Student Accounts**

Effective fall 1994, all items students have contracted to pay are billed in full for the term. These include tuition and fees, residence hall room and board charges, and fraternity and sorority housing.

Students have the following three tuition and fee payment options.

Option 1: pay the full amount billed

Option 2: pay the minimum monthly periodic payment, including a $15 deferred payment fee

Option 3: participate in the optional payment plan offered by Tuition Management Systems, a private organization authorized by The University of Iowa to contact students and parents

**Refund Schedule**

Students who withdraw registration during a regular semester receive reduction of fees assessed as follows: during the first week of classes-90 percent; during the second week-75 percent; during the third week-50 percent; during the fourth week-25 percent. There is no reduction of fees for withdrawals after the fourth week of classes.

When a student withdraws during the first term of enrollment, his or her tuition and fees are adjusted according to a pro-rata refund schedule required by the U.S. Department of Education. The adjustments are provided to all first-time enrollees regardless of their financial status. All students who withdraw after their first term of enrollment and who received federal financial aid for that semester receive a refund according to the federal refund policy.

**Records**

All academic records are maintained by the Office of the Registrar and are not released without permission of the student.

**Regents Exchange Program**

University of Iowa students may take courses at either of the other two Regents universities for University of Iowa resident credit. Regular, degree-bound students in good standing at any of the three Regents universities may attend another Regents university for a maximum of two semesters; the credits earned at the other university are counted as resident credit at the home institution.

Approval for participation and credit in the exchange program must be obtained well in advance of registration. The department head must approve the acceptance of such credits if they are to apply to the major, and time must be allowed to ensure complete processing of the application between the cooperating universities within the dates specified for enrollment.

Detailed information and application forms for the exchange program are available from the Office of the Registrar.

**FINANCIAL AID**

Web site: http://www.uiowa.edu/financialaid

The University of Iowa has an excellent record of helping its students obtain scholarships, grants, loans, and other forms of financial assistance. Approximately 88 percent of Iowa students receive some form of aid. The Office of Student Financial Aid helps students sort through the many forms of aid available.

**Application Procedure**

Students must be accepted for admission to be considered for financial aid at the University. From January through April, all newly admitted students receive information on how to complete the financial aid filing process.

All students are encouraged to apply for aid. Many factors are taken into consideration in determining eligibility.

To determine eligibility for need-based aid, students and parents must provide information about their financial situations. Students must submit the Free Application for Federal Student Aid (FAFSA) as soon as possible, and they should have the results sent to the University’s Office of Student Financial Aid.

Filing the FAFSA and submitting all other required documents to the Office of Student Financial Aid promptly assures that students will be considered for all need-based awards offered by the University.

The paper FAFSA may be obtained from high school and community college counselors. The FAFSA is good for only one academic year. Students must reapply for aid each year. Students are encouraged to file the FAFSA on the web (http://www.fafsa.ed.gov).

**How Aid Is Determined**

The University of Iowa determines eligibility for need-based aid by the same method used by other colleges and universities throughout the country. The steps are as follows.

- The University determines the estimated costs for an academic year; these include tuition, fees, books, room and board, transportation, and personal expenses.
- The FAFSA information is calculated using a federally mandated formula to determine how much the student and his or her family should contribute, based on the family’s income and assets.
- Financial need is determined by subtracting the expected family contribution from the estimated costs for an academic year at the University.
- Whenever possible, financial assistance is awarded toward meeting the student’s financial need; however, due to the large number of applicants and the limited funds available, it usually is not possible to offer enough assistance to meet the financial need in full.

**Eligibility for Aid**

Students are eligible for federal financial aid if they are U.S. citizens or eligible noncitizens and are enrolled at least half-time in a degree program, and if they demonstrate financial need as determined by the FAFSA.

In order to maintain or establish eligibility for financial aid at the University, students must comply with the following Reasonable Academic Progress (RAP) standards.

Minimum semester hours: Undergraduates must earn 22 semester hours per academic school year (fall, spring, and summer sessions combined) or 11 semester hours if enrolled for one semester (fall or spring) only. Graduate students must earn 12 semester hours per academic school year or 6 semester hours if enrolled for one semester (fall or spring) only.

Minimum grade-point average: Undergraduates and graduate students must maintain at least the minimum grade-point average requirement of the college in which they are enrolled.

Duration of eligibility: Undergraduate students’ eligibility terminates when the total semester hours earned, including transfer hours, or the total semesters enrolled, including withdrawals, equals the limits outlined below by college. Transfer, CLEP, or correspondence hours accepted toward University of Iowa degrees are considered in determining duration of eligibility.

Liberal Arts: 186 semester hours earned or 12 semesters enrolled

Business: 180 semester hours earned or 12 semesters enrolled

Engineering: 192 semester hours earned or 12 semesters enrolled

Nursing: five semesters of clinical rotation

Pharmacy: individual student eligibility review in coordination with the college’s dean

Graduate students’ eligibility terminates when the total semesters enrolled, including withdrawals, equals eight; or the total semester hours earned equals the limits stated as follows.

M.C.S.: 30 semester hours
M.A., M.S., M.Ac., M.S.N.: 48 semester hours
M.P.T.: 67 semester hours
M.H.A., M.F.A., M.S.W., M.B.A.: 60 semester hours

Ed.S.: 62 semester hours
M.P.T.: 67 semester hours
M.P.A.: 110 semester hours
D.M.A., Ph.D.: 96 semester hours
Financial aid eligibility is canceled for one or more of the following reasons: exhausting one’s duration of eligibility; failing to meet the requirements for semester hours completion and/or grade-point average; or failing to meet the minimum requirements of a probationary term. These and other requirements and exceptions are outlined in detail in the publication *Reasonable Academic Progress Standards*, available at the Office of Student Financial Aid.

Withdrawal of Registration and Impact on Eligibility

Federal financial aid regulations published in the November 1, 1999, Federal Register (64(1210, sec. 668.22) outline requirements for the return of Title IV funds in the event of a student’s withdrawal from the institution. Students must withdraw their registration officially through the Office of the Registrar.

For detailed information on the return of Title IV funds, contact the Office of Student Financial Aid or consult the office’s web site.

Unofficial Withdrawal and Impact on Eligibility

When a student who receives financial aid begins attending classes at the University but then quits attending classes (withdraws unofficially), the Office of Student Financial Aid may be required to reduce the student’s aid eligibility and return to the appropriate aid program a portion of the Title IV funds that have been disbursed to the student.

Federal financial aid recipients who are not attending class are identified on the midsemester class list by class instructors. Students identified as no longer attending at the half-time enrollment level (6 semester hours for undergraduates, 5 semester hours for graduate students) receive a letter outlining the University’s policy on official and unofficial withdrawals. Students no longer attending class are encouraged to withdraw officially.

Students who withdraw by the University deadline have an official withdrawal date, and the financial aid refund is calculated according to the Return of Title IV Funds policy. Contracted charges (tuition, computer and health fees, room, and board) are assessed based on University policy and the official withdrawal date and are adjusted downward, when appropriate.

Students who are identified on the midsemester list as not attending class and who receive a final grade of F are classified by the Office of Student Financial Aid as having withdrawn unofficially for federal financial aid purposes. This classification is used only for students who do not complete half-time enrollment hours satisfactorily.

For students classified as having withdrawn unofficially after attending the first day of classes, the withdrawal date for financial aid purposes becomes the midpoint of the enrollment period. The Return of Title IV Funds policy determines the unearned portion of the Title IV aid that must be returned to the appropriate aid program(s).

Scholarships

The University awards a wide variety of scholarships based on academic achievement, artistic talent, and other attributes that help create a diverse and challenging learning environment. Many scholarships have application deadlines in March or April of the senior year of high school. A few, including the prestigious Presidential Scholarship, have earlier deadlines. Information on scholarships and application procedures is available at the Office of Student Financial Aid and on the office’s World Wide Web site.

Grants

Federal Pell Grants

Undergraduate students without bachelor’s degrees may apply for Federal Pell Grants. These awards range from $400 to $3,300 per academic year, depending on financial need and federal funding. Students must be enrolled at least half-time in a degree program in order to be eligible. The FAFSA determines eligibility.

Federal Supplemental Educational Opportunity Grants (SEOG)

The Federal SEOG program provides federal aid to undergraduate students without bachelor’s degrees who show exceptional financial need. The amount of the grant varies depending on financial need and federal funding. Recipients must be enrolled at least half-time. The FAFSA determines eligibility.

Educational Opportunity Program (EOP) Grants

Institutional funds are awarded to undergraduate and graduate students participating in the Support Services Programs. The FAFSA determines eligibility.

Iowa Grant

The Iowa Grant is a state-supported program awarded on the basis of financial need to undergraduate Iowa residents. The FAFSA determines eligibility.

Images

The Iowa Minority Academic Grants for Economic Success (IMAGES) is a state-supported program for minority undergraduates with financial need. Preference is given to residents of Iowa. The FAFSA determines eligibility.

Loans

Federal Perkins Loans

Federal Perkins Loans are long-term federal loans based on exceptional financial need. The amount of the award varies depending on federal funding. Students must be enrolled at least half-time in a degree program. Repayment, at 5 percent interest, begins six months after recipients cease to be at least half-time students. The FAFSA determines eligibility.

William D. Ford Federal Direct Loans

Federal Direct Stafford Loans are low-interest loans made to students who have financial need after other aid has been awarded. The interest rate is variable, and repayment begins when recipients cease to be at least half-time students. The FAFSA determines eligibility.

The Federal Direct Unsubsidized Stafford Loans are for students who are not eligible for the annual maximum Federal Direct Stafford Loan. Interest on this loan accrues while the student is in school. Recipients must be enrolled at least half-time and must file the FAFSA.

Federal PLUS loans are for parents of dependent students. They provide additional funds for educational expenses. The loans have a variable interest rate that is adjusted each year. Repayment begins once the loan is fully disbursed. Students must file the FAFSA.

If a promissory note is required, the note is sent to students with the award notification letter by the Office of Student Financial Aid. The note for the Federal Direct Stafford Loan is a Master Promissory Note (MPN). Once the note has been completed by a student, it is valid for all future Stafford Loans for up to 10 years.

Health Professions Student Loans

Health Professions Student Loans are long-term federal loans for students enrolled full-time in the College of Dentistry or Pharmacy. Amounts available depend on federal funding. The interest rate is 5 percent. The FAFSA determines eligibility.

Students in the College of Medicine may borrow through the Health Professions Student Loan if they previously have received the loan. New borrowers are eligible for the Primary Care Loan.

Nursing Student Loans

Long-term federal loans are available for undergraduate students enrolled at least half-time in the College of Nursing. Amounts available depend on federal funding. Repayment begins nine months after recipients cease to be half-time students. Interest is 5 percent. The FAFSA determines eligibility.

Employment

Students who are able to balance the demands of employment and academics can lessen or, in some cases, avoid education loan debt while gaining valuable work experience. Employment— even if it does not relate directly to career goals—strengthens a resume. Employers take note of students who are able to succeed in the classroom and, at the same time, meet the demands of a job.

Job opportunities abound on the University of Iowa campus and in the local Iowa City/Coralville community. Due to the number of jobs available, students who want to work do not need to begin the job search until they arrive on campus in the fall. Students can,
however, familiarize themselves with the local job market and sample area job listings by consulting the Office of Student Financial Aid’s web site.

Employment options include on-campus and off-campus part-time work, and Work-Study, a need-based financial aid program supported by federal and state funding. There are no eligibility requirements for off-campus part-time work. Students who seek on-campus part-time work must be registered at The University of Iowa for at least 1 semester hour.

Employment guidelines for Work-Study are more complex. Work-Study employees must be U.S. citizens or permanent residents and must have demonstrated financial need by filing a Free Application for Federal Student Financial Aid (FAFSA). They must be enrolled in a degree program at the University and be registered for at least half-time study (6 semester hours for undergraduates, 5 semester hours for graduate students), must comply with the Reasonable Academic Progress (RAP) standards, and must have paid all University charges from prior semesters.

For each employment option, work schedules are arranged with individual employers. However, students employed on campus or through the Work-Study program may not work more than 20 hours per week during the academic year and 40 hours per week during summer and winter breaks; these limits are based on Iowa law. Employment dates for Work-Study academic year 2000-01 are August 20, 2000, through May 12, 2001.

Students who plan to work while they are in school must complete Form I-9. Documents required for this form are a photo ID (University of Iowa ID card or driver’s license) and either a social security card or an original birth certificate. Students should bring these documents with them to Iowa City.

The Office of Student Financial Aid’s web site provides a wealth of detailed information on student employment, including guidelines for the FAFSA and Work-Study employment, job and employer listings, job search techniques, and payment. Information also is available from the office, in Calvin Hall.

Information about financial assistance for veterans of U.S. military services is available from any regional Veterans Affairs office.

Information about Education Aid to War Orphans is available from the Iowa Bonus Board, in care of the Iowa State Capitol in Des Moines.

Additional Information for Graduate Students

Primary sources of financial support for graduate students through academic departments or programs include teaching and research assistantships, Iowa Fellowships, Iowa Arts Fellowships, Graduate College Block Allocation Fellowships; and Graduate Opportunity Fellowships. Scholarships, traineeships, and part-time employment also are available. Further information is available from academic departments or programs.

Graduate students must submit an Application for Graduate Awards and Appointments to their academic department by February 1 in order to be considered for the following fall semester. Only students admitted to a graduate department or program are eligible to apply. Non-need-based awards are made on the basis of academic merit. Fellowship and assistantship recipients are eligible to apply for tuition scholarships awarded in amounts up to full-time tuition and fees. Students should contact their departments for more specific information.

The resource room of the University’s Division of Sponsored Programs has information on assistance for graduate students from non-University sources, such as foundations and professional associations.

Other Sources of Aid

A guidance counselor may have information on local scholarships, and school or public libraries are excellent sources for publications about financial aid. A free scholarship search is available on the World Wide Web (http://www.fastweb.com). Many places of employment, professional associations, and labor unions have programs to help pay the cost of education for children of employees or members. Other sources include foundations, religious organizations, fraternities or sororities, town or city clubs, community organizations, and civic groups. A little searching on the student’s part may unearth some unexpected source of financial aid.

Information about financial assistance for students with disabilities is available from the University’s Office of Student Disability Services.
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ACADEMIC SERVICES

Academic Advising

Academic advising is mandatory at The University of Iowa. Students must obtain clearance from their advisers to register for courses each semester. Each student is assigned an academic adviser to assist with educational planning, academic counseling, and registration. Most entering freshmen, including open majors, certain predetermined majors, and most declared majors, are assigned advisers in the Academic Advising Center. Other entering freshmen with declared majors are assigned to advisers in their major departments. Upon admission to professional colleges (Business, Dentistry, Education, Engineering, Law, Medicine, Nursing, Pharmacy, and Public Health), students are advised by academic advisers in their respective collegiate dean’s offices. Graduate students are advised by their department heads and the Graduate College dean.

In addition to providing academic advising, advisers serve as general consultants to their advisees and refer those with special needs to appropriate support services.

Academic Advising Center

The Academic Advising Center advises almost all freshmen and many sophomores. Professional advisers provide intensive advising support through systematic and frequent contact with their advisees. Advisers help students explore various fields of interest, select a specific academic major, learn about career options that relate to their programs, and develop plans of study appropriate for their educational goals. They also refer students to other campus offices for assistance in academic, personal, and career counseling; academic skills development; and financial aid.

Collegiate Academic offices

Each of the University’s undergraduate colleges maintains an academic/student affairs office. These offices are available to all students in the respective colleges to help with questions about admissions, academic majors, course requirements, grading options, career and degree plans, and other matters. They assist students who want to change advisers and/or majors, and they act on student complaints.

Placement, Career Services, Co-op Ed

Placement Office

Professional staff advisers at the Business and Liberal Arts Placement Office help UI students and graduates plan their career searches, developing strategies to make searches efficient and successful. Appointments can be scheduled in advance with an adviser in the Phillips Hall office. Walk-in appointments are available at the Pappajohn Business Building office.

Seminars are presented throughout the year on a variety of topics, including resume writing, job search techniques, and interviewing skills. Program schedules are available from the office and on its World Wide Web page. Careers Day, held each fall, gives students the opportunity to meet with more than 100 employers in an informal setting.

The office’s Information Center has books and videos on job-search techniques, sample resumes and cover letters, and employment information. Students and experienced professionals planning job searches are invited to use the center’s materials. The center also provides job listings, including those relevant to federal jobs, on electronic networks and in printed formats.

The office also maintains an Employer Literature Room, with information such as annual reports, company brochures, and videotapes on hundreds of companies that hire University of Iowa graduates. Currently enrolled students can access JOBTRAK, an Internet-based job listing service, free of charge by obtaining passwords from the placement office in Phillips Hall.

Graduating students can register for on-campus interviews with employers from business, industry, government, and nonprofit organizations. Interviews are held at the placement office each semester.

Career Development Services

This center helps University students explore and plan their careers and obtain educational work experience. Located in Calvin Hall, the center includes a resource library with information on careers as well as a wide variety of experiential learning opportunities. The center also manages an internship program, DISCOVER, which is accessible at 17 of the University’s computer clusters.

Each year some 1,200 students accept internship positions. Experiential learning opportunities are available throughout Iowa and the Midwest, nationwide, and worldwide.

An innovative fee-based program called IOWA Advantage is available to all students with at least four semesters remaining at the University. It provides job readiness sessions, specialized career advising, and training in the electronic production of professional portfolios.

As part of the experiential learning program, cooperative education offers undergraduates and graduate students opportunities to assume professional responsibilities, apply academic studies in supervised work situations, and receive recognition for work experience related to their degree program. Internships and cooperative education also give students an inside look at different kinds of organizations and professional work areas. With the approval of faculty members and monitoring by center staff, many students are able to obtain a transcript notation while gaining professional work experience.

The University offers many cooperative education courses; see course listings in departmental sections of the Catalog. The following is a nondepartmental cooperative education course.

610:822 Washington Center Program

Tutorial Labs

Mathematics Tutorial lab

The Mathematics Tutorial Lab provides supplemental instruction in pre-college and freshman-level courses taught in the Mathematics Department. The lab is staffed by faculty members and teaching assistants who work with students who need additional help in their courses. Tutoring is available for students enrolled in the following courses.

22M:001-002 Basic Algebra I-II
22M:003 Basic Geometry
22M:005 Trigonometry
22M:009 Elementary Functions
22M:010 Finite Mathematics
22M:011 Introduction to Calculus with Applications
22M:015 Mathematics for the Biological Sciences
22M:016 Calculus for the Biological Sciences
22M:017 Calculus and Matrix Algebra for Business
22M:025-026 Calculus I-II
22M:035-036 Engineering Calculus I-II

Various modes of instruction are used in the lab: small group and one-on-one tutoring, computer-assisted instruction, handouts, and self-instructional materials. Students are encouraged to stop by the lab to get help with their assignments, study in a supportive environment conducive to relieving math anxiety, consult with their teaching assistants concerning their status in the course, and use the lab’s supplemental materials.

Speaking Center

The Speaking Center provides one-on-one instruction to students who want to improve their speaking performance in rhetoric classes or other areas of academic life. Students who sign up early in the semester can receive individualized instruction up to 30 minutes per week for the entire semester. Instruction depends on individual needs. It includes help with delivery techniques, methods of organizing material, strategies for effective presentations, options for preparing and practicing speeches, and methods of generating and using responses to speeches for further improvement.

Writing Center

The Writing Center provides individualized writing experiences for University students who want to improve their writing. Students discuss
their work in personal conferences with teachers, who offer comments and suggestions to help the students become perceptive, critical readers of their own writing as they learn how to develop their ideas clearly and cogently. Students may enroll for noncredit work in the center throughout the semester. Or they may register for the credit course 010:009 Individual Instruction in Writing (no credit toward degree) before or after taking a required rhetoric course, or transfer to 010:009 Individual Instruction in Writing from another rhetoric course after conferring with their rhetoric teacher and the director of the Writing Center.

Registrar

The Office of the Registrar determines the residence status of each student, issues University identification cards, supervises registration procedures, provides and publishes course information, and coordinates commencement and academic special events programs. It assesses fees and fee adjustments, maintains all students’ academic records, and issues official transcripts and verifications.

The registrar’s office issues degree evaluations for undergraduate students and helps students determine graduation requirements, submit applications for degrees, and interpret college and University academic policies. It provides assistance to students on Selective Service and military service matters, and it helps student veterans apply and enroll at the University and secure receipt of their Veterans Affairs benefits.

Transcripts

Students who have completed work at The University of Iowa can obtain an official transcript of that work upon request to the Office of the Registrar. Fees are $6 per transcript. For an additional $2 charge, students with proper identification can obtain immediate transcript service.

An official transcript cannot be issued for a student who has a past-due University account.

Student Disability Services

The University of Iowa is committed to making its facilities, services, and programs fully accessible to people with disabilities. The Office of Student Disability Services (SDS), located in Burge Residence Hall, provides assistance to students with a wide range of visible and nonvisible disabilities, including hearing and speech impairments, learning disabilities, mobility impairments, visual impairments, and others. The office’s goal is to help students with disabilities enjoy the same rights and assume the same responsibilities as do other students. The office also provides information to students, faculty, and staff on educational services for students with disabilities.

SDS works closely with University faculty and staff to provide assistance with admission, orientation, academic and career planning, academic support services, financial aid, housing, transportation and parking, aide and attendant care, health services, and recreational services (see “Recreational Services” in this section of the Catalog). The office works with students individually to locate the type of assistance appropriate to their needs, from tutors or personal attendants to tape recorders to emergency-loan wheelchairs.

Support Services Programs

The Office of Support Services Programs (Undergraduate Educational Opportunities Program) includes two federal TRIO programs, New Dimensions in Learning and the Upward Bound Project. Both serve first-generation college students, students from low-income backgrounds, and students with disabilities.

The Undergraduate Educational Opportunities Program (UEOP) is designed to provide academic planning services and personal support to students from populations that are historically underrepresented in higher education.

New Dimensions in Learning provides direct academic support to eligible students through individual tutorials, small-group sessions, and academic skill development activities. The Upward Bound Project helps eligible high school students prepare for postsecondary education. Numerous part-time student employment opportunities are available through these programs.

GENERAL SERVICES

Campus Information Center

Web site: http://www.imuis.uiowa.edu/cic

Located in the Terrace Lobby of the Iowa Memorial Union, the Campus Information Center provides information about campus and community activities and University services and operations; refers inquiries to appropriate campus and community resources; and compiles the master calendar of campus events. Other services include an automated information system and a tutor referral service. The center also operates the Housing Clearinghouse, which provides up-to-date listings of available rental units, city and campus maps, and lists of realtors, hotels, motels, and apartment complexes. The center is open seven days a week.

Office of Student Life

Web site: http://www.imuis.uiowa.edu/osl

The Office of Student Life (OSL) is located in the Iowa Memorial Union. The office provides diverse and balanced social, cultural, recreational, and educational programs and activities in the Iowa Memorial Union and on the University of Iowa campus. It also helps individual student organizations to design, build, and maintain educational environments that enhance personal growth and achievement of organizational purpose.

Professional staff members provide information to students who want to become involved in organizations suited to their interests or to form new groups or organizations. They also conduct workshops on enhancing leadership skills and organizational effectiveness. The Volunteer Iowa Program (VIP), designed to bring University students interested in volunteer service together with local community service agencies, is coordinated by the OSL.

Campus programming and special event planning are ongoing tasks for OSL. Student groups, working in conjunction with OSL staff, plan and conduct traditional events such as Homecoming, RiverFest, minority and international events and festivals, and new campus programs. Various governing bodies, commissions, and committees benefit from OSL assistance in their efforts to promote life outside the classroom as well as to increase the University’s visibility in the community. Among student governing bodies with which OSL works are The University of Iowa Student Government (UISG), the Panhellenic Council, the National Panhellenic Council, and the Interfraternity Council. The commissions and committees include SCOPE (the concert promotion group), the Bijou Film Commission, the Student Legal Services Commission, Fine Arts Council, OUS Arts Council, and the University Lecture Committee. The office also administers the Arts and Craft Center, the Student Activities Center, the Student Organization Business Office, the Afro-American Cultural Center, and the Latino Native American Cultural Center.

Cultural Centers

Afro-American and Latino Native American Cultural Centers

The University operates the Afro-American Cultural Center and the Latino Native American Cultural Center under the auspices of the Office of Student Life. Students meet at the centers to share experiences, find mutual academic and personal support, relax, and develop social programs, all in an atmosphere that emphasizes their cultural heritage. Programs and activities at the centers are open to all students.

The Afro-American Cultural Center sponsors discussion groups, orientation programs, movies, and class sessions. The house is decorated with art by African and African American artists and has study areas, a kitchen, and a library of publications by African, African American, and Third World authors.

The Latino Native American Cultural Center sponsors conferences, lectures, and workshops on cultural themes. The center also houses a library with special-interest books and periodicals and displays wall murals painted by students and guest artists.

International Center

The International Center serves members of the University community who have international interests. Its facilities and programs are designed to encourage interaction among people of all cultures.
The International Center welcomes University-affiliated group activities. Reservations are required for use of the facilities. For more information or to check availability, call facilities scheduling in the Division of Continuing Education.

**Sports and Recreation**

**Intercollegiate Athletics for Men**
The University of Iowa is a member of the Big Ten Conference and has athletic programs in baseball, basketball, cross-country, football, golf, gymnastics, swimming and diving, tennis, indoor and outdoor track and field, and wrestling. General policy guidelines are recommended by the Board in Control of Athletics, which is composed of a University vice president, 12 faculty members, two University staff members, two University alumni, and two students. The director of men’s intercollegiate athletics serves on the board as an ex-officio member.

**Intercollegiate Athletics for Women**
The University of Iowa sponsors nationally competitive intercollegiate athletic varsity teams for women in basketball, cross-country, field hockey, golf, gymnastics, rowing, soccer, softball, swimming and diving, tennis, track and field, and volleyball. It competes as a member of the Big Ten Conference and the National Collegiate Athletic Association (NCAA). Athletic scholarships are available in all 12 programs to qualified student athletes. Women’s Intercollegiate Athletics is governed by the University Board in Control of Athletics.

**Recreational Services**
The Division of Recreational Services, located in the Field House, administers one of the most diverse recreation programs in the country for students, faculty, and staff. It offers 30 intramural activities, 20 club sports, an outdoor recreation program, environmental education camps, a high adventure challenge course, 12 instruction programs, a fitness/wellness program, an environmental education program for elementary students, a raptor program, and an informal drop-in program.

**Intramural Program**
The Intramural Sports Program coordinates more than 30 different sports, including popular team sports such as basketball, flag football, in-line hockey, and volleyball. Individual events such as bowling, darts, tennis, and golf also are offered. Students, faculty, and staff may participate in as many activities as they wish. Spouses may compete in the coed program.

**Sports Clubs**
Recreational services advises and funds more than 25 sports clubs formed by individuals to further their interest in a sport or recreational activity. The clubs, which are recognized student organizations, range from competitive team clubs such as soccer and rugby to recreational clubs such as sailing and table tennis.

**lesson Programs**
Recreational services offers a variety of noncredit instructional classes for all age groups throughout the school year. There is a nominal registration fee for each program. Typical lesson programs include gymnastics, rowing, swimming, and various martial arts classes.

**Fitness Program**
The division offers a total fitness/wellness program, which includes the fitness facility/weight room, aerobic/exercise classes, yoga classes, and fitness consultations, assessments, orientations, and personal training.

**Informal Recreation**
An informal drop-in recreation program for students, faculty, and staff offers basketball, swimming, racquetball, volleyball, tennis, jogging, and fitness/wellness training.

**Outdoor Recreation**
The division operates the University of Iowa Nature Area, one of the finest university-managed outdoor education and recreation areas in the country. The 435-acre nature area, located 15 miles north of Iowa City on Lake Macbride and the Coralville Reservoir, offers picnic and camping sites, nature trails, an outdoor archery range, a raptor/nature center, and some of the best hiking and cross-country ski trails in the Midwest. It also is the site of summer wildlife camps and environmental education programs for elementary school children, and home to the University of Iowa Sailing Club.

The division also sponsors the Touch the Earth Outdoor Recreation and Education Program, which features a wide variety of activities such as canoeing, white water canoeing, backpacking, bicycling, mountain bicycling, kayaking, rock climbing, cross-country skiing, and spelunking. The Department of Health, Leisure, and Sport Studies offers credit for all of these activities. The division also has a challenge course and a large climbing gym.

**Persons with Disabilities**
Recreational services has a weight and exercise room with equipment modified for use by persons with disabilities. In addition, recreation staff members are available to help disabled students who want to be included in regular recreational services programs.

**Summer Sports Camps**
The University of Iowa has one of the largest summer sports camp programs in the Midwest, offering boys' and girls' basketball, coed swimming, football, volleyball, wrestling, track and field, golf, boys' and girls' gymnastics, baseball, softball, field hockey, and tennis. There are also unique camps in activities such as cheerleading and dance. The University of Iowa Sports Camps Office is located in the Field House.

**Iowa Memorial Union**

Web site: http://www.lmuis.uiowa.edu

The Iowa Memorial Union is the hub of student life. Its facilities include a copy center; the Campus Information Center; the University Box Office, with check cashing service; the Office of Student Life; the Wheelroom, which offers live entertainment; a recreation area with billiards and electronic games; an arts and craft resource center; the University Book Store; rooms for lectures, concerts, meetings, and social events; and art and sculpture display areas. It offers a variety of food services, including the River Room cafeteria, Union Station, Union Pantry and Union Market, State Room (a formal dining room), and catering services.

The adjoining Iowa House Hotel has 100 guest rooms for parents, alumni, conference participants, and other visitors to the campus.

Also housed in the union are the Instructional Technology Center (ITC); the Student Activities Center, with student organization offices and an extension of the ITC; nine e-mail stations; an ATM; a United Parcel Service drop box; and a U.S. Postal Service stamp machine.

**Student Health Service**
Student Health Service is located in Westlawn on the University health sciences campus. All students registered at the University for 5 or more semester hours are charged a mandatory health fee and are eligible for outpatient care at the Student Health Service. Students registered for 0-4 semester hours may choose to pay the health fee to receive the same care. Students registered for 0-4 semester hours who do not pay the health fee may use the Student Health Service, but they are charged a fee for each visit.

Payment of the health fee allows unlimited free office visits. There are additional charges for some services, such as laboratory procedures, X-rays, minor surgery, and special procedures.

All University students are advised to have health and accident insurance. A University-sponsored group insurance is available for students in individual or family plans. This insurance policy must be obtained prior to or during registration and is available through the Business Office in Jessup Hall.

**University Counseling Service**
The University Counseling Service (UCS) is committed to fostering a multicultural environment. Its staff of professional psychologists and advanced doctoral students offers personal counseling and therapy in individual, couple, or group sessions. Career counseling, learning disability assessment,
outreach programs, and workshops also are available. UCS also offers programs, workshops, and consultation services to University offices and departments. Most UCS services are available to students without cost, but there is a fee for psychological testing.

Veterans Services
The Office of Veterans Services is part of the Office of the Registrar. It serves veterans, dependents of veterans, and service personnel in matters relating to Veterans Affairs educational benefits, University registration, and study at the University.

Women’s Resource and Action Center
The Women’s Resource and Action Center (WRAC) provides services to meet the educational, cultural, social, and personal needs of University and community women. Through its feminist programs and services, the center’s staff is committed to empowering Iowa women by providing counseling, advocacy, information and referral assistance, support and discussion groups, and educational programs. The center also provides do-it-yourself legal kits, publishes a monthly newsletter, and maintains the Sojourner Truth Library.

Many undergraduate and graduate students participate in one or more of WRAC’s formal volunteer training programs; some use these opportunities for career exploration and resume building.

The center serves as a resource for many women’s organizations and encourages community building. It strives to provide an atmosphere where differences of race, ethnicity, gender, age, economic status, sexual orientation, religion, and individuality are welcomed and celebrated.

HOUSING

Fair Housing Policy
In accordance with The University of Iowa’s Policy on Human Rights, on-campus University housing is assigned to eligible applicants without exclusion or discrimination on the basis of race, creed, color, or national origin.

Iowa City has a fair housing ordinance providing for equal opportunity to secure housing without distinction due to race, religion, or ancestry, except in certain instances involving owner-operator dwelling units. A Human Relations Commission is responsible for the observance of this ordinance and for the initiation of redress for violations of it.

University Residence Hall
The University’s nine residence halls provide housing and dining accommodations and academic and program support for 5,461 single students; 748 units are available in the University Apartments complex operated by the Department of Residence Services.

Single, double, triple, and quadruple rooms with full or partial board are available in the Grand Avenue Residence Halls (west campus), which include Hillcrest, Quadrangle, Rienow, and Slater halls, and in the Clinton Street Residence Halls (east campus), which include Burge, Daum, Currier, Stanley, and Mayflower halls.

There are lounges, study areas, television rooms, coin laundry facilities, sundecks, exercise facilities, and pianos in or available to each residence hall. Computer terminals [both IBM and Macintosh] and printers are available in five monitored Instructional Technology Centers (ITCs).

Each residence hall is divided into small living units. Each building has a live-in hall manager and assistant manager, and there is a student resident assistant living on each floor. All students are encouraged to participate in residence hall government to plan programs and discuss issues.

Student- and staff-initiated programs and activities provide opportunities for students to pursue social, recreational, cultural, and educational interests. Several academic classes are taught in residence halls. The academic advising center is located in Quadrangle.

All students living in residence halls must contract for a food plan, with the exception of Mayflower residents, who may contract for room only. There are 10 plans to choose from, ranging from weekday breakfast only to daily breakfast, lunch, and dinner. There is no Sunday evening meal.

Students who do not live in residence halls may purchase full or partial board contracts.

International Crossroads Community
The International Crossroads Community is located in Hillcrest Residence Hall. It welcomes both American and international students to broaden their knowledge of international issues and foreign languages and cultures. Its programs include weekly language dinners with students and faculty members, public festivals and celebrations of cultural holidays, educational presentations on topics such as study abroad and international careers, and music and theater performances.

Applications and Assignments
Prospective first-year students receive housing application forms to apply for residence hall accommodations after they apply for admission.

All other students must request housing application forms. Prospective students are encouraged to apply for housing as soon as they apply for admission to the University. Applicants for residence hall accommodations should read the terms and conditions of the contract carefully, provide all information requested on the application form, sign the contract portion, and return the completed application/contract to the housing office in Burge Hall, with a check for $50 made payable to The University of Iowa.

Students wishing to be roommates must ask for the same accommodations. Students must list one another’s names and social security numbers and be sure they have listed roommate as their number-one priority of preference.

Roommate requests are processed according to the date the last roommate’s housing application is received. The Housing Office does not consider requests for roommates who have not been admitted at the time assignments are made, for those who have not made the advance payment, or for those who have not completed the housing application correctly.

Applicants do not receive room assignments until after they have been admitted to the University. However, they are encouraged to apply for housing as soon as they apply for University admission.

The residence hall application/contract and $50 advance payment constitute a contract offer. Applicants may withdraw by notifying the University Housing Office in writing before their application becomes a binding contract. The application becomes binding approximately 10 days after the University Housing Office issues notice of acceptance of the contract and assignment of accommodations. Assignments are mailed to new students during June, July, and August.

Upon written request, the $50 advance payment is refunded to applicants who are not admitted to the University and to those who cancel their residence hall contracts by the binding date of the contract.

Rates
Basic rates for University residence hall accommodations for the 2000-01 academic year are $4,398 for a non-airconditioned double room and $4,048 for a non-airconditioned triple, with full board (20 meals per week). Rates for room and board options vary according to accommodations. Rates are subject to change annually.

University Apartments
University Apartments are available to any registered University of Iowa student. Priority is given to students with dependent children who submit their applications by May 15 for the following academic year, October 15 for spring semester, and March 15 for summer session. After these deadlines, applicants are accepted first-come, first-served.

The University provides 748 unfurnished living units in three complexes, Hawkeye Drive and Hawkeye Court are located on the west side of Iowa City, and Parklawn is located close to the central campus. Each complex is unique, but all three offer off-street parking, refrigerator and range, paid water, Cambus service, play areas for children, telephone and local service, and basic television reception with pay cable option. There is school bus transportation for children in Hawkeye Drive and Hawkeye Court.
Heat, but not electricity, is included in the monthly rent for Hawkeye Drive residents. Hawkeye Court and Parklawn residents must pay for gas and for electricity.

Monthly rents for the 2000-01 academic year are $285 for efficiencies, $330 to $360 per month for one-bedroom units, and $375 to $455 for two-bedroom units. Rates are subject to change annually.

Applicants must meet all University admission requirements before assignments can be made. Applications may be filed before admission is complete, but they are not accepted more than a year in advance.

Off-Campus Housing

The Housing Clearinghouse, located at the Campus Information Center in the Iowa Memorial Union, maintains and provides accurate, up-to-date listings of available rental units in the Iowa City area, including large apartment complexes, smaller complexes, rooms in private homes, and one-, two-, and three-bedroom duplexes and houses. The clearinghouse also suggests other resources useful in looking for housing and offers a packet of helpful information for prospective residents of the area.

Fraternities and Sororities

The University campus is home to 26 undergraduate social fraternities and 17 undergraduate social sororities. Chapter houses, which accommodate 35 to 60 people each, are operated by 17 fraternities and 12 sororities.

Undergraduate fraternities with chapter houses include Acacia, Alpha Kappa Lambda, Beta Theta Pi, Delta Chi, Delta Sigma Phi, Delta Tau Delta, Delta Upsilon, Kappa Sigma, Phi Delta Theta. Phi Gamma Delta. Phi Kappa Psi. Phi Kappa Theta, Pi Kappa Alpha, Sigma Alpha Epsilon, Sigma Alpha Mu, Sigma Chi, Sigma Nu, and Sigma Phi Epsilon.

Undergraduate sororities with chapter houses include Alpha Phi Omega, Alpha Delta Pi, Alpha Phi, Alpha Xi Delta, Chi Omega, Delta Delta Delta, Delta Gamma, Gamma Phi Beta, Kappa Alpha Theta, Kappa Alpha Gamma, Pi Beta Phi, and Zeta Tau Alpha.

Several other social fraternities and sororities are recognized on campus as student organizations but do not have chapter houses: Alpha Phi Alpha, Alpha Tau Omega, Kappa Alpha Order, Kappa Alpha Psi, Omega Psi Phi, Phi Beta Sigma, Sigma Lambda Beta, and Theta Chi fraternities; and Delta Sigma Theta, Sigma Gamma Rho, Sigma Lambda Gamma, and Zeta Phi Beta sororities.

CODES, POLICIES, AND STUDENTS’ RIGHTS

Code of Student Life

As members of the academic community, students are encouraged to develop a capacity for critical judgment and to engage in a sustained and independent search for truth. Freedom to teach and freedom to learn are inseparable facets of academic freedom. The freedom to learn depends on appropriate opportunities and conditions in the classrooms, on the campus, and in the larger community. To provide and safeguard the right of every individual student to exercise this freedom to learn without undue interference by others, the University has developed a Code of Student Life. The code covers conduct that adversely affects a University process or function or some distinct and clear interest of the University as an academic community. In order to foster an environment where academic freedoms are exercised in a responsible manner, all students are expected to acquaint themselves with the code and to conduct themselves in accordance with the standards it sets forth.

University Policy on Human Rights

The University of Iowa brings together in common pursuit of its educational goals persons of many nations, races, and creeds. The University is guided by the precepts that in no aspect of its programs shall there be differences in the treatment of persons because of race, creed, color, national origin, age, sex, disability, sexual orientation, gender identity, and any other classifications that deprive a person of consideration as an individual, and that equal opportunity and access to facilities shall be available to all. Among the classifications that deprive a person of consideration as an individual are those based on association preference. These principles are expected to be observed in the internal policies and practices of the University, specifically in the admission, housing, and education of students; in policies governing programs of curricular and extracurricular life and activities; and in the employment of faculty and staff personnel. The University shall work cooperatively with the community in furthering these principles.

Student Complaints Concerning Faculty Actions

Student complaints concerning actions of faculty members are pursued through the informal mechanism established in each college for this purpose.

Although there is some variation among colleges, these mechanisms generally involve the following steps.

- The student should first attempt to resolve the issue with the faculty member involved.

- Lacking a satisfactory outcome, the student should turn to the departmental executive officer, if there is one.

- If a satisfactory outcome still is not obtained, the student may take the matter to the collegiate dean.

The Colleges of Education, Engineering, Liberal Arts, Medicine, and Nursing have written policies and procedures for resolving complaints. Some colleges have established ombudsperson systems as an alternative for handling student complaints. Information concerning the informal mechanisms established by specific colleges is available in the respective collegiate dean’s office.

Graduate students should consult with the associate dean for academic affairs in the Graduate College concerning methods for resolving complaints.

If a student’s complaint concerning a faculty action cannot be resolved through the informal mechanisms available, the student may file a formal complaint, which will be handled under procedures established for dealing with alleged violations of the “Statement on Professional Ethics and Academic Responsibility,” as specified in section III-15 of the University Operations Manual. A description of these formal procedures, found in section III-29 of the University Operations Manual, can be obtained from each college dean’s office; the University ombudsperson’s office and collegiate ombudspersons’ offices; the College of Liberal Arts Office of Academic Programs; or the Academic Advising Center.

Generally, academic complaints filed by graduate students are resolved without respect to the grievant’s employment status. A student dissatisfied with the outcome of an academic complaint against a faculty member at the departmental and collegiate levels may ask the Office of the Provost to review the matter.

University Ombudsperson

The Office of the University Ombudsperson responds to problems and disputes brought forward by any member of the University community-students, staff, and faculty. The ombudsperson investigates claims of unfair treatment or erroneous procedure and serves as a neutral and detached listener, information resource, adviser, intermediary, and mediator. The ombudsperson considers all sides of a question in an impartial and objective way.

The ombudsperson’s office is an independent entity. It reports only to the University President. It treats all requests and consultations in strict confidence. It will not divulge a visitor’s name or the nature of his or her complaint without the visitor’s consent.

Before consulting the ombudsperson, students, staff, and faculty may try to resolve their problems by following procedures outlined by University rules and policies. Where practical, faculty and staff members should discuss problems with department chairs and/or supervisors; students should follow procedures...
in the handout Policies and Regulations Affecting Students. Students, staff, and faculty may wish to consult the appropriate academic adviser, department head, supervisor, chair, dean, or other administrator before contacting the ombudsperson. They may consult the ombudsperson at the outset, however, if use of official channels would result in lengthy and damaging delays or a lack of confidentiality and/or impartiality.

**Policy on Sexual Harassment**

Following are excerpts from the University “Policy on Sexual Harassment and Consensual Relationships,” which is printed in full in the booklet Policies and Regulations Affecting Students.

**Division 1. Sexual Harassment**

**Section 1. Rationale**

(a) Sexual harassment is reprehensible and will not be tolerated by the University. It subverts the mission of the University and threatens the careers, educational experience, and well-being of students, faculty, and staff. Relationships involving sexual harassment or discrimination have no place within the University. In both obvious and subtle ways, the very possibility of sexual harassment is destructive to individual students, faculty, staff, and the academic community as a whole. When, through fear of reprisal, a student, staff member, or faculty member submits or is pressured to submit to unwanted sexual attention, the University’s ability to carry out its mission is undermined.

(b) Sexual harassment is especially serious when it threatens relationships between teacher and student or supervisor and subordinate. In such situations, sexual harassment exploits unfairly the power inherent in a faculty member’s or supervisor’s position. Through grades, wage increases, recommendations for graduate study, promotion, and the like, a teacher or supervisor can have a decisive influence on a student’s, staff member’s, or faculty member’s career at the University and beyond.

(c) While sexual harassment most often takes place in situations of a power differential between the persons involved, the University also recognizes that sexual harassment may occur between members of the same University status. The University will not tolerate behavior between or among members of the University community that creates an unacceptable working or educational environment.

**Section 2. Prohibited Acts**

No member of the University community shall engage in sexual harassment. For the purposes of this policy, sexual harassment is defined as an individual’s employment or status in a course, program, or activity;

(b) Submission to or rejection of such conduct is used as a basis for an employment or educational decision affecting an individual; or

(c) Such conduct has the purpose or effect of unreasonably interfering with an individual’s work or educational performance or of creating an intimidating, hostile, or offensive environment for work or learning.

**Section 7. Consensual Relationships in the Instructional Context**

No faculty member shall have an amorous relationship (consensual or otherwise) with a student who is enrolled in a course being taught by the faculty member or whose academic work (including work as a teaching assistant) is being supervised by the faculty member.
## Special Resources at Iowa

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VICE PRESIDENT FOR RESEARCH

Web site: http://www.uiowa.edu/vpr

The University of Iowa recognizes that its research activity is indispensable if its teaching is to have the relevance, freshness, and effectiveness expected of a distinguished institution of higher learning.

The University holds that the term “research” applies to creativity in all fields. Imaginative originality, whether in the fine arts, humanities, or the sciences, is of a common character and significance in the overall intellectual life of the institution.

The Office of the Vice President for Research maintains an overview of the many individual research commitments of the institution and actively promotes the research mission of the University in many ways. It

- provides leadership to develop and maintain the institutional infrastructure for the proper conduct of research;
- helps faculty, staff, and students obtain external financial support for research, training, and public service activities that are consistent with the University’s mission;
- identifies high-priority national and state research, training, and public service needs related to the University’s mission; communicates information about those needs to appropriate faculty, staff, and/or students and helps develop proposals for projects that meet those needs;
- assures coordination of large-scale multidisciplinary projects that go beyond established departmental or collegiate working relationships;
- brokers working relationships and support for research among various constituents involved in the University’s research mission, including individual researchers, investigative groups, and public and private research sponsors;
- monitors and influences federal legislation and regulations to enhance the University’s position as a major educational and research institution;
- fosters interdisciplinary and collaborative research and service by providing faculty assistance, supporting research colloquia, and developing support for other forms of advanced study that cross traditional disciplinary lines;
- stimulates and manages transfer of University of Iowa intellectual property to the private sector;
- stimulates and facilitates the use of University of Iowa research, expertise, and facilities for the benefit of the local, regional, state, and national economies;
- continues to develop the Oakdale Research Campus as a dynamic resource that supports the University’s research mission.

The Office of the Vice President for Research also maintains a close relationship with the Graduate College because of the college’s University-wide character and the vital connection between graduate programs and research and creative activity.

The University Research Council assists the vice president for research in a regular advisory capacity, considering matters such as establishment of general policies regarding the University’s research and creative efforts, review of policies and procedures concerned with securing and allocating funds for support of research and creative activity, and additional matters related to the general research and creative functions of the University and the health of basic scholarship on the campus.

The vice president also is advised on research and funding matters by committees in the arts, humanities, biological sciences, physical and mathematical sciences, and social sciences.

**Programs**

The Office of the Vice President for Research currently supports the following programs, with the advice of the University Research Council and other appropriately involved University officers and committees.

**Arts and Humanities Initiative**

The Arts and Humanities Initiative is a new program designed to support humanities scholarship and work in the creative and performing arts.

Those currently eligible for funding include UI tenured, tenure-track, and clinical faculty, as well as UI full-time professional and scientific staff members who hold a graduate degree or equivalent and have a record of professional achievement.

The Arts and Humanities Initiative Advisory Committee provides guidance for the program.

**Biosciences Initiative Pilot Grant Program**

This program is designed to provide support for new multidisciplinary, collaborative research in the biosciences. It accepts proposals that relate to one or more scientific themes. For detailed information, consult the vice president for research web site.

Those eligible for funding under the Biosciences Initiative Pilot Grant Program include tenured, tenure-track and clinical-track faculty, and research scientists conducting independent research.

The Biosciences Initiative Advisory Committee provides guidance for the program.

**Biosciences Initiative Postdoctoral Fellowship Program**

The goal of the Biosciences Initiative Postdoctoral Fellowship Program is to attract the most promising biosciences postdoctoral students. The chief criterion for selection is the potential positive effect the award would have on the awardee’s career in research. The program accepts research proposals in the five areas cited for the Biosciences Initiative Pilot Grant Program. Awardees apply for external funding during the period of the award.

To be eligible for funding, individuals must be new to The University of Iowa and must hold a recent Ph.D., D.D.S., M.D., or equivalent terminal doctoral degree from an accredited U.S. institution or comparable international institution.

**Central Investment Fund for Research Enhancement**

The Office of the Vice President for Research annually solicits proposals for support of scholarly and creative projects through the Central Investment Fund for Research Enhancement (CIFRE). All tenured and tenure-track faculty and all research scientists are eligible, except for recent recipients of CIFRE awards. Preference may be given to applicants in the early stages of their careers.

CIFRE funds are oriented specifically to assisting faculty and research scientists in exploring new approaches and/or enhancing the competitiveness of subsequent applications for external research funding. Qualified applicants in all areas of scholarly endeavor—the arts and humanities, biological sciences, physical/mathematical sciences, and social sciences—are welcome to apply.

**Carver Scientific Research Initiative Grants Program**

The Carver Scientific Research Initiative Grants Program, funded by the Roy J. Carver Charitable Trust of Muscatine, Iowa, is designed to focus support on nonmedical projects in the sciences and in technology-related fields.

The program provides competitive research grants to tenure-track faculty who have exciting ideas with long-range potential, but who need to conduct preliminary studies in order to launch a research project. Awards normally are limited to projects in the natural, physical, biological, and technological sciences in the Colleges of Liberal Arts and Engineering.

**Grant-Related Equipment Cost Sharing**

The Grant-Related Equipment Cost Sharing Program provides matching funds for proposals to external funding agencies. Awards are determined case-by-case and are limited to equipment purchases.

**International Travel Fund Program**

The International Travel Fund Program is a combined effort of the Offices of the Provost, the Vice President for Research, International Programs, and the Graduate College. It supports various educational endeavors that enhance the University’s international character. These may include travel abroad to conduct research.
develop or strengthen international links, lecture or advise, attend conferences to present research, and participate in the improvement of graduate programs, instruction, or study.

Those currently eligible for funding include UI tenured, tenure-track, and clinical faculty as well as UI full-time professional and scientific staff members who hold a graduate degree or equivalent and have a record of professional achievement. Tenure-track faculty members and professional and scientific staff members receive funding priority.

Research Incentive Program

The Research Incentive Program (RIP) is a pilot research support program administered jointly by the vice president for research and the vice president for finance and university services. Funds are allocated to University of Iowa colleges in proportion to indirect costs for federally funded research incurred by the University and recovered from the federal government. The manner in which RIP funds are disbursed is left to individual colleges. However, the funds must be used in direct support of collegiate research.

Creative Scholarship Subventions

This fund provides financial support for creative scholarship involving the publication of books and compact disks. Applicants must provide evidence of the scholarly or creative reputation of the publishing house or sponsoring organization as well as copies of reviews or other evaluations that indicate the quality and importance of the work. All University of Iowa faculty members are eligible.

Incidental Grants

Limited funds also may be available in the Office of the Vice President for Research for small grants to faculty members to cover the costs of materials, supplies, equipment, proposal writing, and clerical and related assistance for specific research projects; for faculty members’ domestic travel related to specific research projects or for the purpose of acquiring skills, knowledge, or techniques that will enhance research at the University; and for honoraria and expenses of visiting lecturers.

Services

The Office of the Vice President for Research also provides support for several University-wide services required by faculty members engaged in research and creative activities. They include the following.

Central Research Facilities

To maintain state-of-the-art resources for key research activities within the University, selected facilities are identified for centrally supported development. Such facilities generally are available to interested graduate students and faculty and on a time-available, fee-for-service basis to those outside the University community. Currently these facilities include the following.

Animal Care Unit

The staff of the Animal Care Unit is responsible for the purchase, maintenance, husbandry, and veterinary care of all vertebrate animals used in research. In addition, the staff ensures that all work with animals is conducted in accordance with regulations of the U.S. Public Health Service and the U.S. Department of Agriculture. Faculty members are encouraged to consult with animal care personnel when writing applications for grants, especially with regard to choice of animal models and numbers, completion of animal care and use review forms, aseptic surgery, necropsy procedures, biohazards, questions concerning humane treatment, budgetary considerations, and the University’s policy on animal care. Training for investigators concerning proper husbandry and biomethodology is available upon request. All requests for animals must be initiated through the Animal Care Unit. All protocols involving animals, regardless of funding arrangements, must be approved by the University Animal Care and Use Committee before study is begun.

Image Analysis Facility

The Image Analysis Facility provides a unique combination of software, computer-based hardware, and technical expertise in computer visualization imaging and molecular modeling. Commercial, public, and facility-developed software packages are available through the facility, including applications in image processing, graphics, data visualization, 3-D animation, molecular modeling, and protein sequence analysis. The facility houses a cluster of Silicon Graphics, Inc., workstations for data acquisition and processing. A variety of scanners is available for digitizing images, and there is a photographic-quality color printer for creating hard copy. The facility’s staff processes data for users or can train users in new techniques. Voxblast software (developed in-house) and related programs provide volumetric imaging services. Voxblast licenses are available for University laboratories through the facility or can be purchased for non-University groups through an Iowa-based software company. The facility’s staff provides 3-D modeling services, building models and animations to the customer’s specifications. The facility also provides a curriculum in modeling, offering two for-credit courses taught by the facility’s staff. Students who successfully complete the curriculum are eligible for up to three levels of certification.

The Image Analysis Facility provides molecular modeling services, including model building and analysis techniques. Training is available through semiannual workshops. Several molecular modeling programs are available to University laboratories through the facility. Specialized services such as software development and system consulting also are available. Software development applications include image and volume processing, applications, data conversion, and device-specific web page development, primarily on UNIX and NT platforms. System consulting ranges from advice on system configurations to system set-up and administration.

The Image Analysis Facility is the University’s center for Silicon Graphics technology. The facility sells Silicon Graphics desktop workstations as well as software and hardware support contracts to University units.

Central Microscopy Research Facility

The Central Microscopy Research Facility provides instrumentation and technical assistance to research programs involving the use of light microscopy, laser scanning confocal microscopy, scanning probe microscopy, scanning and transmission electron microscopy, and X-ray microanalysis. Equipment includes the following: a Hitachi S-2400N variable pressure scanning electron microscope equipped with a cryostage, backscattered electron detector, and a Kevex EDS system; a Hitachi S-4000 field emission scanning electron microscope equipped with a Kevex EDs System and a backscattered electron detector; Hitachi H-600 and H-7000 transmission electron microscopes equipped with STEM and a Kevex EDS system, a cryostage, electron diffraction, tilting and rotational holders, and digital imaging; Bio-Rad MRC-1024 and a Zeiss laser scanning confocal microscope; a Photon Technology live cell ion imaging system; a Digital Instruments Nanoscope IIA scanning probe microscope; an Olympus stereo microscope with an optronics video camera; a Balzers 301 freeze-fracture apparatus; a Ventanna automatic paraffin processor; a Bio-Rad critical point dryer; an EMITECH sputter coater; a Balzers freeze-substitution system; four Reichert ultracut-E ultra-microtomes including an FC-4D cryosectioning apparatus; A.O. and Zieiss paraffin microtomes; an Oxford Vibratome; Zeiss and Reichert cryostats; LKB glass knife makers; diamond knives; Nikon Eclipse and Leitz Diaplan light microscopes equipped with brightfield: darkfield: phase. Nomarski DIC, ep-polarization, and ep-fluorescence microscopy, as well as 35mm, Polaroid, and Optronics video cameras; a Mossbauer spectroscopy system; a Gatan ion mill; a Bio-Rad plasma ash; an Emissive carbon coater; a Hitachi vacuum evaporator; centrifuges; balances; ovens; and two photographic darkrooms equipped with automatic film and print processors.

The facility also provides all solutions, supplies, and training for investigations involving microscopy, including specialized staining and embedding techniques, negative staining, metal-coating, autoradiography, cryo-fixation and cryo-compaction, enzyme-cytochemistry, immuno-cytochemistry, in situ hybridization, morphometry and stereology, the preparation of material science samples for both TEM and SEM, including X-ray microanalysis and other procedures. A library containing texts and
reviews on various applications of light, scanning probe, and transmission and scanning electron microscopy also is available.

The facility is intended to serve both experienced and novice investigators and to provide training for those who need it. Alternatively, all or parts of a project can be handled by the facility staff. The facility is open to both on-campus and off-campus investigators and is available seven days a week, 24 hours a day, on a first-come, first-served basis. The main laboratory is located in the Eckstein Medical Research Building, and additional resources are housed in the Bowen Science Building.

High Field Nuclear Magnetic Resonance (NMR) Facility

Four superconducting spectrometers form the basis for the High Field NMR Facility. The Bruker WM-360 spectrometer provides routine spectra service, and the Bruker MSL-300 is used primarily for solid-state spectroscopy. A Bruker Avance-400 instrument has pulsed field gradient and special decoupling capabilities. The Bruker AMX-600, operating at 600 MHz, provides very high spectral resolution and sensitivity for structural determination of complex molecules. All four instruments are fully multinuclear and have variable temperature capabilities. Virtually any multipulse two-dimensional experiment can be performed on the spectrometers.

Off-line data processing is available on Silicon Graphics or Windows-based computers. Proton NMR spectra are recorded in 5mm tubes; carbon-13 and other heteronuclear spectra are recorded in 5mm, 10mm, or 20mm tubes. Carbon-13 observation is possible with a combination of proton and either fluorine or phosphorus decoupling. Solid samples can be examined in either the high power or magic-angle spinning modes on the Bruker MSL-300 spectrometer.

For the casual user, spectra are recorded by a staff member, whereas hands-on use is encouraged for the frequent user after an appropriate training period. The facility is located in the northwest ground floor area of the Chemistry Building.

High Resolution Mass Spectrometry Facility

The High Resolution Mass Spectrometry (HRMS) Facility, located in the Chemistry Building, provides information about molecular weight, elemental composition, and molecular structure of samples. HRMS facility offers a range of capabilities that includes identification of species in complex mixtures, analysis of very large, polar, nonvolatile compounds, and determination of the accurate mass of compounds.

The facility consists of three major mass spectrometers. The oldest is a VG ZAB-HF high-resolution mass spectrometer with capabilities for electron impact (EI), chemical ionization (CI), gas chromatography-mass spectrometry (GC-MS), and fast atom bombardment (FAB), in which both positive and negative ion analysis is possible. High resolution exact mass measurements are obtained with the ZAE-HF through EI and FAB ionization methods. The instrument has a mass range of 3000 daltons (da).

Another instrument, the ThermoQuest Voyager single quadrupole mass spectrometer, is used for routine, low-resolution EI and GC-MS experiments. After a brief training session, interested University researchers have the opportunity to analyze their own samples. This hands-on feature is unique to the University’s HRMS facility.

The facility’s third instrument, an Autospec (Micromass, Inc.), is a high-resolution mass spectrometer with capabilities similar to those of the ZAB-HF. It also includes electrospray (ESI) and atmospheric pressure chemical ionization (APCI) -ionization methods that are new to the facility and that provide greater flexibility in analyzing a variety of biological and biomedical-related samples. ESI is especially useful for analyzing high molecular weight samples (mass range 3000 da). It also enhances the facility’s detection limits (picogram range).

University researchers can consult with the HRMS facility director about development of mass spectrometric strategies to help in research and interpretation of results.

Fermentation Facility

The Fermentation Facility, part of the Center for Biocatalysis and Bioprocessing, is located on the University’s Oakdale Campus. The facility’s laboratories provide confidential services to academia and industry. With state-of-the-art equipment and an experienced staff, the facility grows microorganisms, optimizes fermentations, scales-up fermentations, produces microbial products, separates and purifies products, and preserves products.

The 13,000-square-foot good-laboratory-practices (GLP) facility includes 22 fully-instrumented, computer- controlled, and computer-monitored fermentors ranging from 2-liter to 1,000-liter capacity. The laboratory also includes a complementary array of state-of-the-art, downstream-processing, and analytical equipment.

Clients include several universities as well as corporations of every size. The facility has experience with many different organisms, including recombinant and pathogenic, grown to 100-liter scale.

Social Science Institute

The University of Iowa Social Science Institute (ISSI) is a research and training facility that supports the work of faculty and graduate students in a variety of departments on campus. Located in Brewery Square, the institute provides the capability for conducting survey research using a state-of-the-art, computer-assisted telephone interviewing (CATI) system as well as large-scale mail surveys. The CATI hardware system includes a central server computer linked through a local area network to 18 interviewing stations. Features of the CATI software include automatic dialing, automatic execution of complex questionnaire skip patterns and logic branches, call attempt disposition monitoring, and on-line recording of numeric and verbatim responses in machine-readable form.

ISSI also provides training for graduate students interested in techniques of survey methodology. Its professional staff consults with faculty members and graduate students as well as clients outside the University.

The institute maintains an extensive Social Science Data Archive and acts as the on-campus representative of the U.S. Census Bureau State Data Center Program, with responsibility for maintaining and providing access to the decennial census data.

The University maintains membership in the Inter-University Consortium for Political and Social Research (ICPSR) through ISSI, enabling members of the University community to obtain a vast array of social science datasets for secondary analysis. The archive presently includes more than 5,000 datasets and continues to grow each year.

ISSI services are available to faculty, staff, and graduate students at the University, as well as to the broader state and regional community. In addition to providing access to census and ICPSR data, the institute handles consultation on individual aspects of survey work, such as questionnaire design, data collection, and data analysis. It also may conduct entire surveys, from design through presentation of a final report.

Statistical Consulting Center

Web site: http://www.stat.uiowa.edu/scc

The Statistical Consulting Center (SCC), located in Schaeffer Hall, helps design experiments and surveys, analyze data, and prepare grant proposals. The director of the center and advanced graduate students in the Department of Statistics and Actuarial Science provide professional statistical consulting to University faculty, staff, and students, as well as to the broader state and regional community.

Consulting services, either drop-in or by appointment, are available free of charge for graduate thesis projects and certain short-term research problems. More extensive consulting is offered on a cost-recovery basis.

Federal Relations Program

The Federal Relations Program leads a comprehensive, University-wide effort to influence federal legislation and regulatory activity to meet University goals as defined by the University’s Strategic Plan. It relies on regular, systematic communication with federal officials on both off and off campus to achieve its goals, which are to:

- maintain and enhance productive relationships with congressional offices and federal agencies in order to strengthen academic, research, and service programs and to achieve University goals;
ensure broad access to the University through a combination of federally sponsored student aid grants and loans;

- support federal funding for University-based research, with emphasis on areas most likely to produce premier research and scholarship and to attract and retain a faculty of national and international distinction;

- initiate, influence, and support federal legislation, regulation, and policy that strengthens the University’s ability to provide outstanding health education and services to the people of Iowa, the Midwest, and the nation;

- affect federal legislation, regulation, and policy in support of a high-quality, healthy University working environment.

The Federal Relations Program is coordinated through the Government Relations Office, which serves as the channel for the University’s legislative communications.

Office of Research Marketing

The Research Marketing and Corporate Relations (RMCR) office identifies, develops, and promotes institutional academic programs that have the potential to benefit from corporate interactions. The office works closely with and provides assistance and support to University of Iowa technology transfer programs and serves as a liaison with the University of Iowa Foundation and with other campus groups involved in communications and external relations. RMCR also undertakes outreach efforts to industry trade associations within the State of Iowa.

Sponsored Programs

Located in Gilmore Hall, the Division of Sponsored Programs maintains information on federal and nonfederal sources of funding for study and research projects by faculty, staff, and graduate students. The division searches out potential support; helps faculty, staff, and students take advantage of funding opportunities; and matches proposed projects with potential funding agencies. Staff members specialize in major discipline areas.

The division maintains files on all federal agency programs, complete with proposal guidelines, application forms, regulatory information, and directories of agency staff. Division staff members are well-acquainted with the programs and requirements of the various agencies. Individuals also may request searches of commercially available databases or may choose to do their own searches of funding databases through the research and technology transfer page at the University’s World Wide Web site.

The division’s resource center, also located in Gilmore Hall, maintains extensive files on nonfederal agencies, private foundations, and corporations that support colleges and universities. There are information resources on available grants, fellowships, and scholarships, ranging from very general directories to those aimed at special populations and interests; annual reports of private foundations; and files of information on nonfederal agencies and foundations, including application guidelines and forms, when available. The center provides access to commercially available databases of information on funding programs of interest to the University community. Customized searches can be performed to determine potential funding sources for proposed programs.

The division’s staff keeps the University research community informed of new funding opportunities, and changes in program regulations, policies, and perspectives through:

- research and technology transfer information on the University’s World Wide Web site;
- individual contact, either by telephone, mailings, or consultation;
- “Grant Bulletin,” distributed by e-mail and accessible on the World Wide Web;
- weekly electronic bulletins from Commerce Business Daily, which lists all government requests for proposals (RFPs) and requests for quotations (RFQs); the division also obtains copies of RFQs in response to special requests from individual researchers; and
- Researcher Profiles on the University’s World Wide Web site, containing interest profiles of faculty and staff researchers compiled for the purpose of matching opportunities and potential collaborators with researchers’ interests.

Development of proposals, monitoring the progress of projects, and reporting results are important steps in the support process. While much of the responsibility is in the hands of faculty, staff, and students who originate proposals, the division helps make the process efficient and effective.

Sponsored programs staff members guide investigators through the development process and, upon request, help establish budgets, review proposal drafts, prepare technical information, and initiate and maintain contact with funding agencies.

The Division of Sponsored Programs is responsible for interpreting regulations that affect research activities. The staff understanding of relevant regulations helps assure full compliance with established rules.

Oakdale Research Campus

The Oakdale Research Campus is administered by the Office of the Vice President for Research. Its 500 acres of land and 12 major buildings are located within the corporate limits of Coralville, approximately seven miles northwest of the main University campus. The Oakdale campus is accessible by an interstate highway. Approximately 1,000 researchers, students, patients, staff, tenants, conference, and visitors use the campus daily.

In recent decades, the Oakdale campus has evolved from a patient care site to a diversified complex devoted to research, development, and education. Most of its programs are affiliated with University colleges and major departments. Among these are the Institute for Rural and Environmental Health, Iowa Geological Survey, Labor Center, Iowa Consortium for Substance Abuse Research and Evaluation, and Animal Care Research Facility.

New programs added in recent years include the Center for Advanced Drug Development, Center for Conferences and Institutes, Center for Health Effects of Environmental Contamination, Health Protection Office, Hydraulics Engineering Research, Institute of Public Affairs, Iowa Center for the Book, Iowa Drug Information Service, National Resource Center for Family-Centered Practice, and the University Laundry.

Also located on the research campus are the Oakdale Research Park, the Technology Innovation Center, The University of Iowa Research Foundation, the Obermann Center for Advanced Studies, and the University Hygienic Laboratory, all of which are described in this section of the Catalog.

Oakdale Research Park

The University of Iowa’s Oakdale Research Park offers businesses engaged in basic and developmental research, product development, and production linked to research and development the opportunity to establish a sustained working relationship with academic researchers.

The park, located on a 188.8-acre parcel of land on the Oakdale Research Campus, includes a multi-tenant building that houses University magnet laboratories and growing companies affiliated with the Technology Innovation Center. The University Center for Biocatalysis and Bioprocessing, a magnet center for industrial biotechnology, is located in the Multi-Tenant Facility, as are College of Medicine laboratories and the National Advanced Driving Simulator.

The University leases land at the park to organizations that want to construct and occupy separate facilities. Sites of varying size and prominence are available to meet individual corporate needs. The headquarters for Ascend Technologies, Inc., Breakthrough to Literacy, Inc., LMS Computer-Aided Design Software, Inc., Neural Applications Corp., Oakdale Systems, Inc., and Police Law Institute are located at the park, along with offices of the Stanley Group and SAI International.

A multibuilding complex, Myriad Technology Plaza, provides space for growing companies emerging from the Technology Innovation Center, small- or medium-size research and development firms, and research units of larger and/or established firms.

Technology Innovation Center

The University of Iowa Technology Innovation Center (TIC) offers a range of services and facilities designed to foster the development of new business ventures—particularly those that make use of advanced technology. Many services at the center are tailored to the needs of entrepreneurs just starting up. However, TIC gladly serves established companies eager to initiate new endeavors.
The strength of the center lies in its ability to couple the scientific and technical capabilities of the University with the expressed needs of the business community. Located on the University’s Oakdale Research Campus, TIC provides congenial, cost-effective work space where collaborations between academic scientists and those in business can flourish. It offers ready access to the University’s computing facilities, research equipment, and instruments, as well as access to a battery of counseling services on crucial issues such as management, marketing, and finance.

The University of Iowa Research Foundation

The University of Iowa Research Foundation (UIRF) believes that transferring intellectual property developed at The University of Iowa to the marketplace is an important means of fulfilling the institution’s research and public service mission. To accomplish this mission, the UIRF works with University faculty, staff, and students who wish to disclose ideas, inventions, and discoveries that may be of benefit to the public.

Following disclosure, the UIRF helps these researchers obtain appropriate intellectual property protection (patents, trademarks, and so forth) and licenses for their inventions. The UIRF also maintains a summary of all technologies developed by University researchers that have been patented and are available for licensing and distributes this information to the business community.

Center for Advanced Drug Development

The Center for Advanced Drug Development (CADD) operates under the umbrella of the University of Iowa College of Pharmacy. Center staff members work in close collaboration with College of Pharmacy faculty members, the Division of Pharmaceutical Service, and the Iowa Drug Information Service.

The center performs a wide range of assays to obtain data for pre-approved active pharmaceutical ingredients, new molecular entities, drug products, and excipients. Among its capabilities are stability indicating assay development and validation, preformulation studies, in vitro testing of dosage forms, stability studies, and USP monograph testing. CADD also has a quality assurance program designed to ensure satisfaction of client-specific quality assurance as well as good laboratory and manufacturing practices of the U.S. Food and Drug Administration.

The center’s services are designed to benefit small or medium-sized pharmaceutical companies that do not have extensive scientific staff or facilities for certain types of studies, veterinary pharmaceutical companies, biotechnology companies, large pharmaceutical companies that periodically cannot pursue all of their projects internally, medical departments that require stability studies on new drugs or drug products under investigation, foreign pharmaceutical companies that lack familiarity with U.S. drug regulations and policies, and governmental agencies.

Center for Biocatalysis and Bioprocessing

The center is a cooperative effort of 50 faculty members from seven University of Iowa departments. Its missions are education and training, research and development, and technology transfer.

The center acts as an academic focal point to encourage faculty interactions, assist in attracting funding, initiate new interdisciplinary activities, and provide central fermentation and processing expertise and facilities. The facilities are used for training and for conducting research. In addition, academic and industrial clients contract the center’s state-of-the-art facilities and expert staff for specific projects.

The Center for Biocatalysis and Bioprocessing sponsors a conference, seminars, and symposia to encourage industrial-academic interactions. An industrial affiliate program encourages and simplifies interactions with University faculty members.

The center’s laboratories promote technology transfer through confidential contract work for academia and industry. The 13,000-square-foot laboratories include temperature controlled rooms with multi-tier floor shakers; fully instrumented, computer-controlled, and computer-monitored fermentors; and complementary, downstream-processing, and analytical equipment.

Center for Health Effects of Environmental Contamination

The Center for Health Effects of Environmental Contamination (CHEEC) is an interdisciplinary research, education, and service organization whose chief mission is to determine the levels of environmental contamination that can be associated specifically with human health effects. Established by the 1987 Iowa Groundwater Protection Act, the center develops and maintains environmental databases to be used in conducting health effects research; manages a seed grant program that supports health effects research, and provides a variety of environmental education and service programs to citizens of Iowa, the Midwest, and the nation.

University faculty members from the Departments of Civil and Environmental Engineering, Epidemiology, Occupational and Environmental Health, and Pediatrics are affiliated with the center. CHEEC collaborates with the Iowa Departments of National Resources, Public Health, Agriculture and Land Stewardship.

Injury Prevention Research Center

The University of Iowa Injury Prevention Research Center (IPRC) fosters interdisciplinary research on prevention and control of rural injuries. Based on available epidemiological data, the IPRC focuses on high-risk rural populations such as children, the elderly, farmers, and farm families. To prevent and control rural injuries in these populations, the IPRC supports research, education, training, and public policy development, with special attention to rural motor vehicle injuries, domestic violence, and farm and other occupational injuries.

The IPRC is organized around three multidisciplinary cores, three dedicated research facilities, numerous research projects, and a pilot research grant program involving faculty members from four colleges and sixteen departments at the University. Faculty members from other midwestern institutions participate through subcontracts on research projects. The IPRC also supports the Midwest Injury Prevention Consortium, an organization dedicated to promoting and advocating injury prevention in Iowa and the Midwest and a national resource for rural injury prevention.

Iowa Consortium for Substance Abuse Research and Evaluation

The Iowa Consortium for Substance Abuse Research and Evaluation is an association of institutions of higher education and departments of Iowa state government dedicated to conducting research and evaluation and disseminating knowledge among researchers, helping professionals, and public policy makers in the field of substance abuse. The University of Iowa serves as host institution for the consortium. Other members include the University of Northern Iowa; Iowa State University; the Iowa Departments of Public Health, Human Services, Education, and Corrections; and the Iowa Substance Abuse Program Director’s Association.

Iowa’s Center for Agricultural Safety and Health

Iowa’s Center for Agricultural Safety and Health is a collaborative effort of The University of Iowa, Iowa State University, the Iowa Department of Agriculture and Land Stewardship, and the Iowa Department of Public Health. The center plans, coordinates, and implements statewide programs to reduce farm-related fatalities, injuries, and occupational illnesses. As part of its state mandate, the center conducts research on risk factors for agricultural injuries and diseases to identify appropriate prevention strategies. In addition, it maintains an inventory of all agricultural health and safety initiatives in the state and serves as a hub of communication to ensure effective and appropriate use of resources for high-priority agricultural health issues.

The center’s headquarters are located at the University’s Institute for Rural and Environmental Health, which is part of the College of Public Health.
Obermann Center for Advanced Studies

The Obermann Center for Advanced Studies brings together scholars from a broad range of disciplines and institutions to generate interesting and powerful scholarship. Located on the Oakdale Research Campus, the center allows scholars-working independently, as small teams, or in large seminars-to reflect, write, and exchange ideas.

Appointments for scholars-faculty and staff members, professionals, and independent researchers-in all fields are available for summer sessions or fall or spring semesters. Many scholars are supported by major grants and fellowships or University of Iowa awards; others have teaching obligations but are on schedules that allow time for their center-based research. The center also has special interest in serving faculty of the two and four-year colleges in the Iowa region.

The Obermann Center sponsors several competitive grants programs. Scholars at the University and nationwide compete for Obermann Fellowships to participate in the Research Seminar, organized each year around an interdisciplinary theme. Interdisciplinary Research Grants support University of Iowa faculty members working on collaborative projects. Center for Advanced Studies Spelman Rockefeller (CASSPR) Grants provide studies leading to the well-being of children and their families. Humanities Symposium Awards support interdisciplinary research conferences.

The Obermann Center’s Public Partnerships programs enable scholars and researchers to interact with professionals and with the general public. For those seeking internal or external grants, the center helps in identifying collaborators and potential funding sources, and in preparing proposals. For those who have been awarded grants, the center provides offices, meeting rooms, and file and archival space.

Obermann Center scholars are provided a private office, a computer and printer, links to the Internet, and many support services, including a library delivery service that locates and copies journal articles.

Center for Global and Regional Environmental Research

The Center for Global and Regional Environmental Research fosters interdisciplinary study of the physical, chemical, and biological processes that influence the earth’s changes and trends by bringing together the University’s special strengths in the health sciences, biogeochemical cycles, hydrologic and climate systems, and ecological systems and dynamics. The center’s primary goal is to evaluate the effects and interactions of global change on earth surface processes and people on both the global and regional scale, including Iowa’s midwestern agricultural setting. The causes of global change (climate forcing) and the feedback of effects on the regional and global scale are considered.

Iowa Birth Defects Registry

The Iowa Birth Defects Registry is a statewide population-based birth defects reporting system that uses multiple sources of ascertainment. At the core of this system is an active method for abstracting hospital records of children identified with birth defects during the first year of life. The system, which is comparable to other advanced birth defect surveillance programs in the United States, collects data on type of defects and demographics under strict confidentiality rules.

The birth defects surveillance system operates statewide and has been shaped by the collection and description of data since 1983. Registry data have been used for a variety of analytic studies, including those on reproductive health effects of environmental contamination, perinatal risk factors, and genetic causes of birth defects. The program also has developed the ability to conduct investigations on a wide variety of public health issues-investigations whose results may have wide-ranging public health and policy implications.

National Advanced Driving Simulator

The National Advanced Driving Simulator (NADS) makes possible the world’s most advanced driver-in-the-loop motor vehicle simulation research dedicated to highway safety and motor vehicle design. As a national facility, NADS is accessible to a wide spectrum of researchers from government, universities, and industry. It provides them with the means to study the crucial interaction between driver behavior, motor vehicle performance characteristics, and the highway environment. At NADS, scientists and engineers can study driver crash avoidance behavior and carry out related accident reconstruction. Because NADS gives them complete control of highway environment and traffic scenarios, researchers can set up hazardous situations and measure driver response. NADS provides an environment for safe evaluation of advanced vehicle communication, navigation, and control technologies now being developed as part of the Intelligent Transportation System (ITS) program. And it is a powerful and cost-effective tool for conducting highway engineering and design research related to traffic safety.

Chosen by the U.S. Department of Transportation as the location for the simulator, The University of Iowa is responsible for NADS’ daily operation, maintenance, and long-term development.

Optical Science and Technology Center

The Optical Science and Technology Center offers University scientists and engineers from a wide range of disciplines the opportunity to collaborate on important and complex research problems in areas of optical and laser science. The center’s primary goals are to promote research efforts and foster cross-disciplinary activity in areas of basic and applied optical science; attract highly qualified students who are interested in optical science and technology; pursue funding opportunities for multidisciplinary research projects in optical science and technology; and promote collaboration with industry in activities related to development and application of optical technology.

Faculty members from the Departments of Biomedical Engineering, Chemistry, Chemical and Biochemical Engineering, Electrical and Computer Engineering, and Physics and Astronomy pursue a wide range of research under the center’s wing.

A major effort at the center lies in the growth and characterization of novel materials and devices with unique electronic or optical properties. Some of these materials are grown by molecular beam epitaxy and include artificially layered semiconductors, (quantum wells, dots, wires and semiconductor superlattices). This materials growth effort is enhanced by close interactions with other groups using ultrafast laser scattering techniques for the characterization of important optical and electronic material properties, and efforts aimed at the fabrication of micrometer and nanometer scale structures for optoelectronic devices and integrated circuit applications.

Another research focus is application of laser and optical spectroscopic techniques to the study of problems of environmental importance, including measurements of the optical and chemical properties of atmospheric clusters and aerosols, and the development of environmentally benign methods for chemical processing.

While the center does not offer a separate degree, interested graduate students may participate in its research activities as part of a graduate degree program in any of the participating departments. For more information about graduate study and research opportunities, contact the Optical Science and Technology Center.

Public Policy Center

The Public Policy Center conducts interdisciplinary academic research on complex problems related to the public interest. Among the topics researched are health care, transportation, human factors, environmental quality, and economic growth and development. The center facilitates productive collaboration among researchers from a variety of fields and disciplines and disseminates research findings and conclusions to scholarly and lay audiences. Center research is sponsored with external funding obtained through competitive proposals to government agencies, private foundations, and special consortiums. Many Public Policy Center research projects involve close interaction with advisory committees composed of public and private sector leaders and informed citizens.
Related Units
Although not directly connected with the Office of the Vice President for Research, these units have a special role in the conduct of research at the University. For information on a particular unit, contact the Office of the Vice President for Research.

Institutes
Dows Institute for Dental Research
Financial Markets Institute
Hawkinson Institute of Business Finance
Industrial Relations Institute
Institute for Cinema and Culture
Institute for Economic Research
Institute for Insurance Education and Research
Institute for Quality Health Care
Institute for Rural and Environmental Health
Institute of Agricultural Medicine and Occupational Health
Iowa Institute of Biomedical Engineering
Iowa Institute of Hydraulic Research
Ira B. McGladrey Institute of Accounting Research

Centers
Alzheimer’s Disease Research Center
Asthma, Allergic, and Immunologic Diseases Center
Biostatistics Consulting Center
Cancer Center
Cardiovascular Research Center
Center for Advanced Reproductive Care
Center for Asian and Pacific Studies
Center for Computer-Aided Design
Center for Criminology and Socio-Legal Studies
Center for Evaluation and Assessment
Center for Experimental Markets
Center for Gene Therapy for Cystic Fibrosis and Other Genetic Diseases
Center for Gene Transfer
Center for Health Services Research
Center for International Rural and Environmental Health
Center for Music
Center for Nursing Classification
Center for Recent United States History
Center for the Study of Group Processes
Center on Aging
Cleft Palate Research Center
Clinical Trials Data Management Center
Cochlear Implant Clinical Research Center
Comparative Legislative Research Center
Connie Belin and Jacqueline N. Blank International Center for Gifted Education and Talent Development
Cooperative Human Linkage Center
Craniofacial Anomalies Research Center
Cystic Fibrosis Research Center
Diabetes and Endocrinology Research Center
Environmental Health Sciences Research Center
Gerontological Nursing Intervention Research Center
Great Plains Center for Agricultural Health
Hazardous Substances Research Center
Injury Prevention Research Center
Iowa Center for Communication Study
Iowa Center for the Book
Iowa Child Health Research Center
Iowa Consortium for Mental Health Services Training and Research
Iowa Consortium for Substance Abuse Research and Evaluation
Iowa Geriatric Education Center
Iowa Spine Research Center
James A. Clifton Center for Digestive Diseases
John Pappajohn Entrepreneurial Center
Law, Health Policy, and Disability Center
Manufacturing Productivity Center
Mental Health Clinical Research Center
Midwest AIDS Training and Education Center
National Center for Voice and Speech
National Maternal and Child Health Resource Center
National Resource Center for Family-Centered Practice
Oral and Maxillofacial Implant Center
Oral Mucosal Disease in Aging Center
Pappajohn Entrepreneurial Center
Preventive Intervention Center
Science Education Center
Small Business Development Center
Specialized Caries Research Center
Specialized Center (SCOR) for Occupational and Immunological Lung Disease

Laboratories
Bone Healing Research Laboratory
Laboratory for Photonics and Quantum Electronics
National Laboratory for the Study of Rural Telemedicine
Orthopaedic Biochemistry and Cell Biology Laboratory
Orthopaedic Biomechanics Laboratory
Translation Laboratory

Others
Biotechnology Byproducts Consortium
Birth Defects and Genetic Disorders Unit
Collaborative Studies of Affective Disorders
Epidemiology of Diabetes Intervention and Complications Study
Gerontology Projects
International Forum for U.S. Studies
Iowa Drug Information Service
Iowa Libel Research Project
Iowa Testing Programs
Lipid Research Clinic
Pharmaceutical Service
Project on the Rhetoric of Inquiry

Iowa Lakeside Laboratory
The Iowa Lakeside Laboratory, a biological field station on West Okoboji Lake, in northwest Iowa, is the site of a cooperative program in teaching and research carried out under the auspices of Iowa State University, the University of Northern Iowa, and The University of Iowa. Courses are offered in two four-week terms and a three-week term during June, July, and August. Facilities for year-round research are available. (See “Iowa Lakeside Laboratory” in the College of Liberal Arts section of the Catalog.)

Iowa Quaternary Studies Group
Director: E.A. Bettis III
Professors: Aust B. Buell (Geoscience), Russell Cochon (Anthropology), George P. Malanson (Geography)
Professors emeriti: Richard G. Baker (Geoscience), Brian F. Glenister (Geoscience), Holmes A. Semken (Geoscience)
Associate professors: James Enloe (Anthropology), Luis A. Gonzalez (Geoscience), Diana G. Horton (Biological Sciences), Frank H. Weirich (Geoscience), Mary Whelan (Anthropology)
Assistant professor: E.A. Bettis III (Geoscience)
Adjunct assistant professor: William Green (Anthropology)

Programs and Facilities
Students working towards master’s and doctoral degrees in the Departments of Anthropology, Biological Sciences, Geography, and Geology may develop programs emphasizing some aspect of Quaternary studies. Students with interests in Quaternary studies are encouraged to broaden their programs with courses in these collateral sciences as they progress toward a degree in their chosen fields.
Research by faculty and students includes paleoecological and paleoclimatological studies using pollen, vascular-plant macrofossils, bryophytes, mollusks, insects, vertebrates, and oxygen and carbon isotopes in cave stalagmites; studies of glacial geology, geomorphology, and stratigraphy; fluvial geomorphology, paleohydrology, and stratigraphy; soil stratigraphy and geomorphology; paleo-oceanography of reefs and shorelines; studies in water distribution, geography, and ecology; studies of hunter-gatherer societies and their environments; and studies of cultural development and its relation to environmental change.

Field areas have ranged from the arctic to the tropics, and from the Rocky Mountains across the Great Plains and Central Lowlands to the Caribbean.

Facilities available on campus include both trailer-mounted and hand-operated coring devices, laboratories for sedimentologic analyses, pollen preparation, vertebrate preparation, artifact preparation, X-ray equipment, optical microscopy, and scanning electron microscopy. Graduate students and faculty have access to campus computing facilities through the University’s ITS Computing Center.

The Museum of Natural History and individual departments have a number of important reference collections, including the Paleontological Repository (two million specimens including both vertebrates and invertebrates) and the Herbarium (more than 200,000 specimens of vascular plants and about 45,000 specimens of bryophytes). The Office of the State Archeologist houses the State Archeological Repository, with more than half a million specimens. Other specialized collections of more than 2,900 seeds and fruits and more than 1,600 pollen types are available in the geology department.

Departmental branches of the library have extensive holdings of books and journals in the biological sciences and geology departments, and the Office of the State Archeologist has a library as well.

Students may design programs that result in a degree from one of the cooperating departments but that involve considerable course work, research, and consultation with one or more other departments. The weekly Quaternary Seminar provides a forum for discussion of research topics.

Financial Support

Teaching and research assistantships are available on a competitive basis from each of the departments involved. Space and facilities are available for postdoctoral students. Some funding is available from individual departments for field expenses. Computer funds are available for graduate students, postdoctoral students, and faculty.

For further information, write directly to the Departments of Anthropology, Biological Sciences, Geography, or Geology or to the director of the Quaternary Studies Group.

Institute for Cinema and Culture

The Institute for Cinema and Culture draws on the University’s strong tradition of film studies to coordinate existing resources on campus and to initiate new ventures. It serves as an information bank concerning availability of films and film materials for faculty and students, and provides assistance to departments, faculty members, and student groups that bring to campus films and speakers who attract an interdisciplinary audience.

Each semester the institute sponsors a symposium and a related film series that focus alternately on topics of general theoretic interest or those addressing a specific culture and moment. The Proseminar in Cinema and Culture (36F:112 or 048112) gives undergraduates and graduate students the opportunity to prepare for the symposia through weekly readings and screenings.

The institute publishes the bilingual journal IRIS.

Office of the State Archaeologist

The Office of the State Archaeologist (OSA) develops, disseminates, and preserves knowledge of Iowa’s prehistory and history through archaeological research, service, and education. Under Iowa statute, OSA is responsible for discovering, excavating, and preserving archaeological remains in Iowa. Protection of ancient burial sites and human remains is one of its major functions.

The OSA works throughout the state and provides consulting services for agencies, municipalities, and firms that need archaeological expertise. Fieldwork emphasizes archaeological survey and evaluation of development areas, such as new highway corridors, to recover data from threatened sites. OSA also conducts field schools, teacher workshops, and cooperative research projects with other departments and agencies. Through OSA, University of Iowa students participate in a variety of laboratory studies and fieldwork.

OSA staff members collaborate on research projects with the Departments of Anthropology and Geoscience, the American Indian and Native Studies Program, and the Iowa Quaternary Studies Group. Several OSA archaeologists have adjunct faculty appointments and teach courses in the anthropology department.

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OSA resources include more than 10,000 accessioned artifact collections from sites around the state; comprehensive collections that aid in identifying archaeological material; extensive archival and document holdings on Iowa archaeology and related subjects; GIS capabilities; and field equipment that supports large-scale archaeological fieldwork. Members of the University community and the public are welcome to visit the OSA. OSA offices, laboratories, document collection, and artifact repository are located in the Clinton Street Building.

Project on Rhetorics of Inquiry

The Project on Rhetorics of Inquiry (POROI) is an interdisciplinary study program involving faculty and students who focus on investigating the persuasive bases of scholarship. Its purpose is to improve academic inquiry, argumentation, and writing in the arts, humanities, sciences, and professions, especially at the intersections between disciplines.

POROI’s executive committee coordinates the project’s initiatives and programs, which include the Faculty Rhetoric Seminar. Founded in 1980 by a small group of Iowa faculty members, the seminar provides a forum for improving scholarly work in progress. Before each seminar, POROI makes available the work being discussed and invites participants from University of Iowa departments and programs, other colleges in Iowa, and interested members of the community. Papers are available on the POROI web site.

POROI also offers an interdisciplinary graduate certificate program in rhetorics of inquiry (see the Graduate College section of the Catalog) and has directed two book series, one at The University of Wisconsin Press and the other at The University of Chicago Press. In addition, the project sponsors an electronic journal, scholar workshops, lectures, topical seminars, local symposia, national and international conferences, and individual research projects by POROI associates.

University of Iowa faculty members with broad textual interests in both inventional and stylistic aspects of rhetorical study advise and participate in the program.

International Programs

The University of Iowa’s International Programs consists of a number of offices, centers, degree programs, academic programs, research projects, and services. Organized under the associate provost and dean for international programs, these units serve to further the University’s international character and promote global scholarship, research, and teaching.

The following International Programs resources are housed in the International Center: African Studies Program; Artists, Artisans, and Traditional Technologists Project; Bridging Project; Center for Asian and Pacific Studies; Center for International Rural and Environmental Health; Center for Russian, East European, and Eurasian Studies; Council for International Visitors to Iowa Cities; Foreign Language Acquisition Resources and Education Program; Global Health Studies Program; Global Studies Program; International Forum for U.S. Studies; Iowa City Foreign Relations Council; Latin American Studies Program; Office for Study Abroad; Office of International Students and Scholars; Southeast Asian Studies Program; Third World Development Support; University linkages and exchange programs; Midwest Universities Consortium for International
Activities (MUCIA) faculty and staff travel grants; and international internships, scholarships, and fellowships.

A number of other international programs and resources are located elsewhere on campus: International and Comparative Legal Studies Program, in the Boyd Law Building; International Writing Program, in the English-Philosophy Building; Language Media Center, in Phillips Hall: Project for the Advanced Study of Art and Life in Africa, in the Art Building; Translation Laboratory, in Brewery Square; and the International Business Certificate, in the Pappajohn Business Building.

Programs, Centers, and Projects

International Programs includes a number of interdisciplinary centers and programs: area studies programs, most of which offer degrees or certificates through the College of Liberal Arts; topical programs and projects, which offer instruction and research opportunities within a broad range of disciplines and across colleges; and major externally funded projects, which explore the frontiers of teaching and research.

African Studies Program (ASP) offers an undergraduate certificate in African Studies and a minor through the Department of African American World Studies. Faculty members from 12 University departments contribute to the program’s curriculum, which focuses on African peoples, visual arts, literature, politics, history, development, law, and medicine, among other topics. The program collaborates with the University’s International Writing Program and the Project for Advanced Study of Art and Life in Africa. It also has strong links with several African universities, especially in Burkina Faso, Nigeria, Ghana, Tanzania, and South Africa. See “African Studies” in the College of Liberal Arts section of the Catalog.

The Bridging Project in International Studies supports collaborative inquiries by faculty and students from The University of Iowa and Grinnell College. Its purpose is to enhance teaching and research on both campuses. The project supports teams that address frontier issues of scholarship, reaching across national or disciplinary boundaries. Most projects involve faculty organizers from Iowa and Grinnell, additional faculty members from each institution, and students. Inquiries extend throughout the academic year and into the summer. Some groups stage conferences and generate publications, and all create new curricula and exercises for teaching.

The Center for Asian and Pacific Studies (CAPS) promotes research projects designed to generate new knowledge, enhance understanding of East Asian nations, and to create reservoirs of expertise. It also disseminates information about the nations of East Asia—their cultures, laws, economic opportunities, societies, and governments to interested persons outside the University. To this end, CAPS supports faculty research, academic symposia, and cultural events, and presents lectures by distinguished scholars. It also facilitates student and faculty exchanges with institutions in Asia.

CAPS has received endowment funds to create a distinguished chair in Chinese studies and another in Korean studies, and it is working to create a third chair, in Japanese culture and institutions.

The Center for International Rural and Environmental Health (CIREH) is an interdisciplinary program in international health whose mission is to research and promote education in the causes, consequences, and prevention of communicable, chronic, environmental, and occupational diseases in countries with substantial agrarian economies. CIREH supports student international health research; hosts international visiting scholars; develops courses, seminars, and workshops on international health issues; establishes international linkages with environmental, educational, and public health institutes; and provides technical and administrative support to facilitate international health and service projects.

The Center for International Studies is one of 12 comprehensive Title VI National Resource Centers in International Studies. Its focus is to develop, expand, and strengthen four major undergraduate and graduate degree programs at Iowa: the undergraduate global studies degree program, the undergraduate certificate program in global health studies, Russian master’s degree program in third world development support, and a new Ph.D. degree program in second language acquisition. Funded by the U.S. Department of Education, the center also works closely with the University Libraries to develop electronic journals and with the Study Abroad Office to create a number of new study abroad sites and internship programs. The center also offers teacher training workshops throughout the state of Iowa.

The Center for Russian, East European, and Eurasian Studies (CREEES) focuses on training law, medicine, business, journalism, and liberal arts students in the languages, culture, politics, and economics of more than 24 new nations that developed in the wake of the Soviet Union’s collapse. The center’s mission is to help develop new courses and revise current ones, and to introduce new languages to the University curriculum. The center also invites visiting faculty members from former Soviet and East European countries to teach at Iowa. See “Russian, East European, and Eurasian Studies” in the College of Liberal Arts section of the Catalog.

Crossing Borders Area Studies Pilot Project focuses on dynamic interactions that take place across cultural, regional, or national divides and emphasizes examination of how people, concepts, and material artifacts from varied places and societies intersect to produce cultural hybrids and complex political and economic effects. The project provides opportunities for students with special interests in global theory, foreign languages, and interdisciplinary methods. The student fellows work with faculty mentors to design plans of study leading to dissertation research. The project, which is funded in part by the Ford Foundation, is a collaborative effort of the Departments of Anthropology, Cinema and Comparative Literature, English, Geography, History, and Political Science, and the School of Art and Art History. It is linked to faculty research in Africa, India, the Caribbean, and North America.

The Foreign Language Acquisition Research and Education Program (FLARE) brings together University specialists in foreign and second language acquisition, language pedagogy, teacher preparation, instructional technology, and language assessment and is dedicated to furthering knowledge in these fields through multidisciplinary collaboration. FLARE collaborates with the University’s Second Language Acquisition Program, which offers a Ph.D. degree and features specializations in three areas of second language acquisition: linguistics, language pedagogy, and instructional technology. FLARE also sponsors a lecture series, a poster conference, and collaborative research projects. See “Second Language Acquisition” in the College of Liberal Arts section of the Catalog.

The Global Health Studies Program (GHSP) focuses on the complex processes that influence health and disease around the globe. The program’s educational and research opportunities offer students experiences that increase their understanding of the web of social, economic, political, legal, cultural, historical, and environmental factors that affect human health worldwide. The Global Health Studies Program offers an undergraduate minor and a graduate certificate. The program also coordinates a plan of study for Master of Public Health students interested in international health. The program offers conferences, seminars, workshops, study abroad experiences, career counseling, and international scholarships and internships. See “Global Health Studies” in the College of Liberal Arts section of the Catalog.

Global Studies Program (GSP) offers undergraduate students an opportunity for interdisciplinary and integrated study of the global system. The program explores key challenges in four vital areas: war, peace, and security; development, health, and human resources; the environment; and a region’s importance to the global system. Most global studies students study abroad at least for a summer and usually for a semester or more. See “Global Studies” in the College of Liberal Arts section of the Catalog.

The International Forum for U.S. Studies (IFUSS) was conceptualized jointly by International Programs and the American Studies Program. Funded by a grant from the Rockefeller Foundation, the four-year program seeks to promote humanities scholarship by non-U.S. scholars working on social and cultural issues that shape or affect the United States. The forum acknowledges the lively growth of intellectual communities around the world that study the United States and seeks to promote greater contact with their scholars, and knowledge of their work, within the U.S. intellectual community. In so doing, the forum takes contemporary U.S. discussions of cultural diversity, a new world order, and multiculturalism one step further by promoting scholarship on the United States done by scholars working in different national histories, intellectual institutions, and scholarly traditions.
Each year, the forum brings five non-U.S. scholars to campus as fellows-in-residence for the spring semester. These scholars work on specific research projects, participate in a biweekly faculty seminar, and share their expertise with the University community through public lectures, and have the option of teaching a course during the summer session.

Latin American Studies Program (LASP) offers an undergraduate certificate and minor and sponsors a wide variety of activities, including speakers, conferences, films, exhibits, and performances. The program offers several interdisciplinary courses, including the team-taught Latin American Studies Seminar, and coordinates offerings on Latin America among a variety of University of Iowa departments. See “Latin American Studies” in the College of Liberal Arts section of the Catalog.

The South Asian Studies Program (SASP) brings together University specialists on South Asia and is dedicated to enhancing instruction and research and the dissemination of knowledge about India, Pakistan, Bangladesh, Afghanistan, Nepal, and Sri Lanka. SASP sponsors a bimonthly research seminar and occasional public lectures, conferences, colloquia, films, and distinguished scholars. In conjunction with a community-based performing arts circle, it sponsors cultural events by dancers, musicians, and artists from South Asia. The program promotes interdepartmental studies and research, builds on the language curriculum in Hindi and Sanskrit, and is involved with two interdisciplinary degrees offered by the Department of Asian Languages and Literature-a bachelor’s degree in Asian studies and a master’s degree in Asian civilizations.

Third World Development Support (TWDS) is a graduate program that offers an M.A. degree for students interested in pursuing careers as professional practitioners in international development. See “Third World Development Support” in the Graduate College section of the Catalog.

University of Iowa Center for Human Rights (UCHR) grew up from the University’s commemoration of the 50th anniversary of the Universal Declaration of Human Rights. It reflects the institution’s commitment to a permanent presence for human rights issues and action on the Iowa City campus, the surrounding community, and beyond. The center emphasizes a diverse array of cross-disciplinary activities designed to support constructive and critical consideration of the problems and prospects of human rights at home and abroad. Activities emphasize transdisciplinary collaboration and focus on scholarly commentary, educational innovation, artistic advocacy and expression, community outreach, and direct action.

Affiliated Programs

International Programs also works closely with several affiliated programs: the Artists, Artisans, and Traditional Technologies Project; the Council for International Visitors to Iowa City (CMC); the Institute for Cinema and Culture; the International and Comparative Law Program; the International Writing Program; the Iowa City Foreign Relations Council (ICFRC); and the Project for Advanced Study of Art and Life in Africa (PASALA).

Study Abroad

The University of Iowa sponsors a wide variety of study abroad programs. Summer, semester, and academic year programs and exchanges in two dozen countries complement and extend the University’s academic programs across the curriculum.

The Office for Study Abroad encourages University of Iowa students to pursue study and research opportunities abroad, to step through the intellectual doors opened by the University and experience other cultures directly. The office works with faculty, departments, programs, and colleges to develop and administer study abroad programs and exchanges that are integrated with the University’s academic programs.

The office also administers several scholarships supporting undergraduate and graduate study and research abroad, including the Presidential Scholarships for Study Abroad, the Stanley Undergraduate Scholarships for International Research/Fieldwork, the Stanley Fellowships for Graduate Student Research Abroad, and the Fulbright Grants for Graduate Study and Research Abroad.

University of Iowa students also may participate in study abroad programs sponsored by accredited U.S. and foreign institutions. Before leaving the United States, students should obtain approval of all transfer credit from non-University of Iowa programs by completing a Study Abroad Credit Approval form.

Information about University of Iowa and other study abroad programs is available at the Office for Study Abroad, in the International Center.

In addition to the study abroad courses listed below, the following programs are offered through foreign language departments in the College of Liberal Arts

*165:105 International Student Exchange Program arr. Study on reciprocal exchange at foreign universities worldwide; some instruction in English. Year-long, one semester, and summer options. Grade-point average of at least 3.00, and in some cases command of a foreign language, required. Prerequisite: 40 s.h. of credit.
*165:106 UK Exchange Program arr. Regular degree course work at the Universities of Hull and Lancaster (England) and the Universities of Strathclyde and Abderdeen (Scotland); humanities, social sciences, physical sciences, business, engineering. Grade-point average of at least 3.00 required. Prerequisite: 40 s.h. of credit.
*165:108 Japan Exchange Program arr. Intensive Japanese language and area studies at the Center for Japanese Studies, Nara University, Nara, Japan, or degree course work at Meiji University, Tokyo. Meiji University exchanges are open to graduate students. Proficiency in Japanese and grade-point average of at least 3.00 required.
*165:112 The Iowa Exchanges arr. Choice of several institutions. University of Iceland: anthropophy, Icelandic literature, linguistics, foreign languages; semester or year-long program. University of Nijmegen: European studies, American studies, English literature; and linguistics; all taught in English. Bachelor’s, master’s, and cultural studies, all taught in German; semester or year-long. Universidade de las Americas: liberal arts, business, international relations; taught in Spanish; semester or year-long. Fachhochschule Giessen-Friedberg: engineering; and related course work, taught in German; semester or academic year. University of Dortmund, Germany: German language and culture for foreigners, regular course work in liberal arts, sciences, engineering, and business; taught in German; semester or academic year. Korean exchanges: choice of six universities in Republic of Korea offering Korean language and Korean and/or Asian Studies courses, taught in English; regular university course work in full range of disciplines, taught in Korean; semester or academic year; course offerings vary by university. Josep Lluita University, Sedgefield, Hungary: Hungarian language, Hungarian and East-Central European Studies, taught in English; regular university course work in liberal arts and sciences taught in Hungarian; semester or academic year. Denmark Aalborg Exchange-Aalborg University: regular university course work in communication studies, European studies emphasizing economics and politics, taught English; semester or year-long. Estonia University of Tallinn: Estonian language and culture, all taught in Estonian; regular university course work for advanced university level, taught in English; semester or academic year.
*165:119 Vienna Exchange Program arr. Regular degree course work in business administration and economics at Wirtschaftsuniversität in Vienna, Austria; taught in English and German. Arranged through the College of Business. May be repeated. Prerequisite: at least two years of college German, or equivalent.
*165:500 Study Abroad 0 s.h.
*165:501 Study Abroad 0 s.h.
*165:805 Iowa Regents Semester in Wales arr. Grade-point average of at least 3.00 required. Prerequisite: three years of college-level Spanish.
*165:810 CIEE Spain Program arr. Five programs in Seville and Alicante addressing specific language proficiency levels and academic interests. Prerequisites vary.
*165:811 USAC Studies in the Basque Country arr. Intensive Spanish language at beginner level; advanced language, civilization, literature at third-year level; intensive Basque language; some courses taught in English; two program sites-Bilbao, San Sebastian. Grade-point average of at least 2.50 required.
*165:812 CIEE Paris Program arr. Film studies and contemporary French critical thought in literature, philosophy, semantics, taught at the Centre-Franco-American Odeon and University of Paris III. Grade-point average of at least 3.00 required. Prerequisite: three years of college-level French.
*165:813 CIEE China Program arr. Three programs in the People’s Republic of China, one program in Taiwan. Mandarin Chinese, Chinese civilization, and culture. Summer, semester, or academic year. Prerequisites and session vary.
*165:816 CIC Latin American Health and Nutrition Program arr. Latin American/Caribbean health and nutrition; interdisciplinary and field-based study with course work in Spanish language, community medicine, public health, medicine, nutrition, Afro-Caribbean cultures literature of the Hispanic Caribbean, history of the Caribbean, Latin American film, independent study. Summer/Fall. Grade-point average of at least 2.50 required. Prerequisite: one year of Spanish (summer), or two years of Spanish (summer and fall), or three years of Spanish (full).
165:820 Ireland in Comparative Perspective arr. Courses at The Queen’s University of Belfast. Northern Ireland; nearly 100 subjects, including social sciences and humanities from Irish and Northern Irish perspectives. Grade-point average of at least 3.00 required.

165:821 University of Ibadan (Nigeria) Exchange arr. Accelerated language study and other work in collaboration with the University of Ibadan’s Arts, Media, some courses may be applicable to GE requirements in foreign civilization and culture and humanities Spring semester. Grade-point average of at least 2.50 required. Prerequisite: one semester of Spanish.

165:826 Summer Art Program in Italy arr. Printmaking and drawing courses in collaboration with the Scuola Internazionale de Grafica; cultural and artistic introduction to Venice and surrounding area; for students at all levels of artistic accomplishment.

165:827 Korea Summer Program arr. Russian language programs at institutions in Moscow, Leningrad. One semester of academic year or summer. Prerequisite: three years of college-level Russian or equivalent.

165:829 London Performance Study arr. Selected theater productions, lectures, performances, discussions, written exercises, workshops, cultural activities. Credit may be applied toward a University of Iowa major in English and/or theater.

165:830 College of Education Summer Study Tour arr. Supervised student teaching in an overseas school.

165:831 Elementary Student Teaching Abroad arr. Supervised student teaching in an overseas school.

165:832 Secondary Student Teaching Abroad arr. Supervised student teaching in an overseas school.

165:833 Academic Year in Freiburg arr. 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. Prerequisites: at least 5 Semesters College German or equivalent with grade-point average of at least 3.00.

165:834 Environmental Studies in Slovenia arr. Short-term course at the School of Environmental Sciences, Nova Gorica, Slovenia; topics vary; taught in English. Offered summer session.

165:835 Historic Organ Culture-Colonial Mexico arr. Concepts of organ design, construction, maintenance, restoration; visits to sites of historic instruments, hands-on participation in organ restoration. Based in Mexico City and Oaxaca.

165:836 Semester in South India arr. Indian civilization and culture; science, technology, and development; women’s studies; Kannada, Hindi or Sanskrit, internships or independent research project. Based in Mysore. Fall semester.

165:837 Iowa Regents Semester in Australia arr. Regular course work in humanities, social sciences, business, engineering, and physical sciences at the University of Newcastle, Newcastle, Australia. Fall and spring semesters. Grade-point average of at least 2.80 required.

165:838 Irish Writing Program arr. Trinity College, Dublin, Ireland; writing workshops directed by Irish writers, literature courses taught by faculty. Summer.

165:839 International Student Exchange Program I arr. Study at some ISEP member institutions in Australia, Costa Rica, Estonia, Ghana, Malta, The Netherlands, the United Kingdom; adds and duration vary. Group fee options.

165:840 Archaeological Field Work in France arr. 

165:841 International Perspectives: Engineering arr. Explores historical, cultural, social, economic, ethical, environmental, and/or political conditions that may affect engineering projects in a specific country or world region; location and topics vary.

165:842 Cross-Cultural Nursing Experience arr. Practical experience to build understanding of nursing roles and responsibilities in different cultures and health care systems; for advanced nursing students.

165:843 Sustainable Cities Tour: Western Europe arr. Efforts by a select group of cities to promote patterns of urban and economic development that can be sustained over generations.

165:844 Language and Culture: Post-Soviet Ukraine arr. 

165:845 Intermedia Exchange: Dortmund Germany arr. 

165:846 Ethnographic Field School-St. Lucia arr. Intensive beginning-level Spanish language; advanced language, literature, civilization at third-year level; tropical ecology. Two program sites—Heredia and Puntarenas. Some courses taught in English. Grade-point average of at least 2.50 required.

165:847 University of Natal Exchange arr. Introduction to South African culture from varied academic perspectives, summer session. Enrollment in regular University of Natal courses; full and spring semesters.

165:848 Social Work International Travel/Study Seminar arr. Impact of socio/political economy on family and community systems in the country visited; seminars, guest speakers, field visits. Prerequisite: 042:143 or consent of instructor.

165:850 USAC Studies in Costa Rica arr. Intensive beginning-level Spanish language; advanced language, literature, civilization at third-year level; area studies. Some courses taught in English. Grade-point average of at least 2.50 required.

165:851 USAC Studies in Chile arr. Intensive beginning-level Spanish language; advanced language, literature, civilization at third-year level; study area. Some courses taught in English. Grade-point average of at least 2.50 required.

165:852 Summer Study in Havana, Cuba arr. Cuban history and culture at the Centro de Estudios Martianos, Havana: three-and-a-half weeks in summer. Two years of Spanish, good academic standing, and enrollment in a degree program required.

165:853 Creative Writing in Italy arr. Workshop at the Sagrada School, Lucca, Italy. Taught in Italian and English. Two weeks in July. Appropriate academic background required.

165:854 International Business in London arr. Study of international finance in one of the world’s financial capitals. Three weeks in summer. Open to business undergraduates in good academic standing. Prerequisite: 042:100.

Research
International Programs supports faculty research and curriculum development, awards graduate fellowships for the study of foreign languages, and awards undergraduate scholarships for international research and fieldwork abroad. It supports faculty and staff exchanges, technical assistance, development consultancies, and internships. In conjunction with The University of Iowa Libraries, International Programs publishes faculty research in the Iowa International Papers and the Iowa International Bibliographic Guides. A number of visiting foreign scholars, research fellows, and international writers are invited to spend from one month to a semester in residence at the center annually. They teach courses, offer workshops, seminars, and lectures, and do their own research.

International Programs also sponsors a Scholar Affiliate Program, a network of local, national and international research and fieldwork abroad. It supports faculty and staff exchanges, technical assistance, development consultancies, and internships. In conjunction with The University of Iowa Libraries, International Programs publishes faculty research in the Iowa International Papers and the Iowa International Bibliographic Guides. A number of visiting foreign scholars, research fellows, and international writers are invited to spend from one month to a semester in residence at the center annually. They teach courses, offer workshops, seminars, and lectures, and do their own research.

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Scholarships and Fellowships
International Programs offers a number of scholarships and fellowships, including foreign language and area studies fellowships, which are administered through several of its constituent programs: Center for Asian and Pacific Studies; Center for International Rural and Environmental Health; Center for International Studies; Center for Russian, East European, and Eurasian Studies; Latin American Studies Program; and Office for Study Abroad. For a detailed listing of scholarships and fellowships, contact International Programs.

International Students and Scholars
The Office of International Students and Scholars (OISS) provides information, services, and programs that help international students and scholars benefit from their stays in Iowa. The office also seeks to foster constructive relationships among international and other members of the University community. Student advisors provide orientation for international students and scholars, personal counseling and advising, immigration advising, financial counseling, conflict resolution, and crisis intervention. They also serve as liaisons with the Friends of International Students and the International Women’s Club.

Cross-Cultural Programming, Outreach
Through its public programming, International Programs brings together faculty, staff, students, the local community, and visitors to create an ongoing dialogue on international issues. In conjunction with other University units and community organizations, more than 150 public lectures, seminars, symposia, workshops, film festivals and conferences are presented each year. International Programs collaborates often with the Iowa City Foreign Relations Council, which airs lectures on local and statewide public radio, and presents a weekly brown bag lunch that features students, staff, faculty, visiting scholars, writers, artists, and scholar affiliates. There also are seminars on urban Africa, global health, South Asia, and contemporary issues in development.

Visiting scholars and professionals-in-residence present seminars and teach short courses at the University. They also lecture at other colleges and universities in the region. Each spring International Programs hosts a writer-in-residence from the UI International Writing Program, who gives presentations on campus and travels across the state to present readings and workshops at senior centers, public libraries, and schools.

International Programs also sponsors the International Classroom Program and the Cultural Consultant Program to promote international understanding. The International
Classroom Program arranges for international students to visit Iowa elementary and secondary school classrooms, where they share their culture and experiences with students. The Cultural Consultant Program arranges for international students to act as cultural consultants for academic courses and programs that have a comparative, international, or cross-cultural focus.

International Programs works with nationality groups on campus to organize activities and special events where domestic and international faculty, staff, students, and scholars can interact with each other. The largest special event—the annual Celebrating Cultural Diversity Festival—features more than 50 activities and attracts an audience of some 5,000. Cross-cultural training programs and seminars are offered as well.

UNIVERSITY LIBRARIES

The University’s Main Library and its 11 branch libraries, plus the Law Library, contain more than 4 million volumes. Branch library holdings are: art, 91,405 volumes; biological sciences, 47,395; the Marvin A. Pomerantz Business Library: 33,600; chemistry, 92,555; engineering, 110,391; geology; 55,212; mathematics. 55,918: the Rita Benton Music Library, 104,680; physics, 57,531; and psychology, 66,606. The Hardin Library for the Health Sciences contains 290,034 volumes.

The Law Library is independent of University Libraries and is administered by the College of Law. See the College of Law section of the Catalog.

The libraries at The University of Iowa make up the largest library system in Iowa. Among 111 university research libraries in the United States and Canada, the system ranks 28 in number of volumes held and 36 in expenditures for library materials.

The Main Library, its 11 branch libraries, and the Law Library occupy more than 11 acres of space, provide seating for more than 6,500 users, and have more than 80 miles of shelving for collections.

Recent statistics show that each year, more than 1.6 million library materials are used. Library staff members answer nearly 340,000 questions and help nearly 2.2 million patrons.

University Libraries has developed a comprehensive user education program to provide information on its resources and services and instruction in their use. In 1998-99, more than 15,000 people participated in programs such as subject-based faculty/graduate seminars, course-related instruction, OASIS and Internet training, and reference consultations. Special programs included workshops for international students, programs for debaters in the Iowa National Summer Institute in Forensics, and programs on library use for student athletes. Library Explorer is a web-based tutorial that helps students learn to choose information sources, use the on-line catalog, and use indexes and abstracts to find periodical articles. A multitude of Internet resources are found via the Uloa Libraries Web site as well as information about programs and services. The Hardin Library for the Health Sciences provides training for searching MEDLINE and other health science resources on Healthnet, a local database system for resources in the health sciences.

In addition to its holdings of bound volumes and access to numerous electronic databases, the libraries provide some 4 million microforms (microfilm, microcards, and microprint and microfiche sheets) as well as various other formats, including maps, video recordings, and sound recordings. Also available are information resources in electronic formats, including CD-ROM, locally mounted databases, and web-accessible resources. These resources include indexes for almost all academic fields and a growing number of full-text databases in a variety of disciplines. Students and faculty can conduct computer searches on a wide variety of topics using CD-ROM or World Wide Web based resources. Customized research consultations are available by appointment.

The Main Library serves as the principal repository for the social sciences and the humanities. Located within this building are various special collections. The Government Publications Department holds more than 1 million printed pieces and more than 1.5 million microformatted items, and more than 4,600 items in electronic format. As a full U.S. Government Depository Library, it automatically receives thousands of items published by the federal government. This department is also a state of Iowa depository, a European Union depository, and a United Nations depository.

The Map Collection contains over 273,000 items, including 100,000 aerial photographs of Iowa counties.

The Special Collections Department of the Main Library holds 85,000 rare books, nearly 500 historical manuscript collections, and 10,000 cataloged manuscript letters and individual manuscripts. This department also manages the University Archives. The rare book collections are particularly strong in the areas of 19th and 20th-century English and American literature, American history, culinary history, history of printing and book arts, private press books, miniature books, and Iowa authors. In addition, there are important collections on the French Revolution, Abraham Lincoln, and travel.

The Iowa Women’s Archives, also part of Special Collections, is a non-circulating collection of 19th- and 20th-century documents by and about Iowa women of diverse backgrounds and occupations. The archives holds more than 300 manuscript collections and has significant collections pertaining to African American women, the women’s movement, women in politics, and the social history of Iowa women.

The Main Library’s Information Arcade facilitates integration of new information technologies into teaching, learning, and research by providing students, staff, and faculty with a variety of resources for learning advanced information skills and for acquiring and manipulating information in various formats. The arcade provides access to a wide range of electronic source materials, with an emphasis on textual and multimedia databases; to information sources on the Internet; and to equipment and software to support independent learning, classroom instruction, and research.

Information Arcade facilities include information stations (MacOS and WIN2000), primarily for research and independent learning; multimedia development stations, for creating and manipulating digital text, images, and sound; the electronic showcase, which provides facilities to support advanced research and development projects that focus on incorporating new technologies into learning and research; an electronic classroom with two instructor’s stations; and 24 student stations. The classroom is fully networked, allowing the instructor and students to interact and work collaboratively on projects.

The Information Commons, a 10,000-square-foot educational technology facility located at Hardin Library for the Health Sciences, features two large electronic classrooms, each seating 50 students. One of these, a “smart” classroom, offers mobile student and instructor stations, a state-of-the-art room control system, and other instructional enhancements. More than 50 individual workstations are available in areas outside the classroom facility, including multimedia development stations equipped with scanners, digital video components, and other peripherals.

The Hardin Library also houses a special collection of nearly 5,000 rare and classical medical works in the John Martin Rare Book Room, named after the collection’s principal donor.

The Scholarly Digital Resources Center (SDRC) is a Libraries-wide initiative, many of whose projects involve partnerships with faculty from a wide range of disciplines. The center’s activities include acquisition of digital collections, electronic publishing, digitizing of unique research materials, and providing access to digital collections located in other institutions. The SDRC is a resource for faculty and students who are interested in electronic publishing or who wish to explore issues related to electronic scholarly communication. The creation of multimedia resources is a key strength of the SDRC. For example, the center supports several ongoing multimedia initiatives, such as the emerging Center for Electronic Resources in African Studies (in partnership with the African Studies Program), the Virtual Exhibitions Program, and an electronic text center for humanities materials.

The current automated on-line catalog system operated by the University Libraries and the Law Library will be replaced by a new system beginning fall 2000. When the new system is fully implemented, it will contain information about all of the 4 million volumes in the University of Iowa Libraries and the Law Library, will support 500 simultaneous users, and will run on a dedicated IBM 570 class system server.

The new system will be user-friendly with an on-line catalog (OPAC) that features a web interface allowing access to full text and multimedia as well as to remote web sites. Most OPAC features are available to both in-library and remote users working on home or

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Office computers. Extensive indexes provide access to virtually any data field.

Traditionally, the strength of a library system has been based primarily on the number of volumes it holds. Because of the substantial, seemingly geometric growth in recorded information, and because of dwindling resources available to acquire this information, it is expected that an increasingly important measure of library effectiveness will be the staff's ability to provide timely access to material not held locally.

The University of Iowa Libraries is a member of several consortiums: the Iowa Computer-Assisted Network; the Center for Research Libraries; the National Library of Medicine’s Regional Medical Library Network; and a resource-sharing network for the Committee on Institutional Cooperation (CIC) institutions (the Big Ten and the University of Chicago). Through these organizations, especially CIC, Iowa's students and faculty members have gained greatly increased access to materials held at other institutions. Through a CIC project known as the Virtual Electronic Library, users of the UI Libraries' OASIS system can search the catalogs at other CIC institutions. The next step in the evolution of the Virtual Electronic Library will be the capacity to request information resources directly from other CIC institutions.

The University of Iowa Libraries' OASIS system allows students, faculty, and staff of the University of Iowa Libraries to request information resources from the collections held at other participating institutions. More than 150 University Hospitals and Clinics and the CIC network of hospitals and health care providers throughout the United States are participating in this program. The OASIS system provides users with access to the full text of many articles, reports, and other resources held at the participating institutions.

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University of Iowa Hospitals and Clinics

University of Iowa Hospitals and Clinics, ranked as one of the best hospitals in the United States, is committed to providing the finest health care. This commitment is carried out in collaboration with the University of Iowa College of Medicine under a partnership called University of Iowa Health Care.

Working together, University Hospitals and Clinics and the College of Medicine find new ways to improve health care through world-class biomedical research and by the training of future health care professionals.

University of Iowa Hospitals and Clinics’ commitment to patient care involves the work of more than 640 highly trained physician specialists and dentists, 1,400 nurses, and 4,400 other professional and support staff members. During a typical year, University Hospitals and Clinics serves more than 41,000 patients who are admitted and another 690,000 who make ambulatory patient visits to the outpatient clinics.

Premier health care services for children are provided through Children’s Hospital of Iowa, part of University Hospitals and Clinics.

Primary care services are provided at the University of Iowa Family Care Center. Beyond the University campus, a network of UI Family Care clinics located in various east and central Iowa communities provides convenient primary care services.

As part of their mission of service, many staff physicians, nurses, and other UI health care professionals travel throughout the state to provide specialized patient care. On-site outreach clinics have been developed to serve patients who cannot come to the hospital or who need specialized care. Staff members also travel to the homes of patients who are unable to get to the hospital.

The Eye Institute brings patients together with world-class specialists in ophthalmology and visual sciences, who provide advanced care for problems relating to the eye and loss of vision.

The Eye Institute offers specialized care for virtually all problems related to the eye, including hearing problems and deafness, balance disorders, problems with the voice and swallowing, and cancer.

James A. Clifton Center for Digestive Diseases provides expert diagnosis and treatment of gastrointestinal diseases by physician specialists from a variety of disciplines.

Center for Advanced Reproductive Care offers help for couples with fertility disorders.

Hyperbaric Oxygen and Wound Care Service uses its six-person hyperbaric chamber to treat patients with various medical conditions, including carbon monoxide poisoning, pulmonary embolism, radiation necrosis, and chronic nonhealing wounds.

Surgical Intensive Care Unit provides continuous intensive medical care to critically ill post-surgical patients.

Neonatal Intensive Care Unit provides specialized treatment for critically ill newborns.

Pediatric Surgical Intensive Care Unit serves older children with serious medical problems.

Family Centered Maternal Child Care Unit cares for high-risk patients and attends to routine infant deliveries in a warm, caring environment.

Many other centers and clinical services at University Hospitals and Clinics focus on conditions such as Alzheimer’s disease, AIDS, burn care, sleep disorders, stroke, and geriatric needs. University of Iowa Health Care’s internationally recognized transplant programs serve patients with problems of the cornea, liver, kidney, pancreas, heart, bone, skin, and bone marrow. The organ transplant service is one of fewer than five programs nationwide performing adult living-related liver transplants.
University of Iowa Health Care’s commitment to high-quality patient service and health care expertise would not be possible without a long-standing collaborative relationship with the physicians, hospitals, and people of Iowa. An important component of this partnership involves regionalized systems for advanced trauma care-triage, stabilization, and transport of seriously injured patients in Iowa and parts of western Illinois and Wisconsin to University Hospitals and Clinics. Under state legislation, University Hospitals and Clinics has received verification by the American College of Surgeons and has been designated by the Iowa Department of Public Health as a Level I Center with Pediatric Commitment.

The Air Care emergency helicopter service carries specially trained medical and nursing teams to aid critically ill and injured patients and transport them to University Hospitals and Clinics for treatment.

University of Iowa Hospitals and Clinics also is a major health training resource for the state. It is the home of clinical training for some 2,200 health care students in 43 disciplines at the University, including students from the Colleges of Dentistry, Medicine, Nursing, Pharmacy, and Public Health.

Clinical departments of University Hospitals and Clinics collaborate in conducting accredited health professional education programs in dietetics, radiologic technology, ultrasound technology, and medical sonography; medical technology; nuclear medicine technology; hospital pharmacy; physical therapy; physician assistantship; and cytotechnology. University Hospitals and Clinics also provides supervised clinical settings for Kirkwood Community College programs in nursing education, surgical technology, and respiratory therapy.

Of the programs cited above, those conducted through collaboration of the hospitals and the Colleges of Medicine and Nursing are described in the appropriate college sections of the Catalog. The following courses are conducted exclusively by University Hospitals and Clinics staff.

670:901 Radiologic Technology Program 0.1 s.h.
Patient care and ethics, radiographic positioning, radiographic critique, medical terminology, radiologic physics, anatomy and physiology, radiographic technique, computer technology, radiation biology, radiographic processing, imaging equipment, quality assurance; supervised clinical education; two-year program; national board examination required at completion.

671:902 Orthoptics Program 0 s.h.
Clinical science of binocular vision, ocular motility, and related 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. Prerequisite: Bachelor’s degree with specific class recommendations.

672:903 Radiation Therapy Program 0 s.h.
Theory and techniques of radiation therapy technology; emphasis on 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. Graduation from an accredited radiography program and eligibility for registration with a national certification program required.

673:904 Diagnostic Medical Sonography 0 s.h.
Principles, methods in using ultrasound as an imaging modality; specialties including abdominal, obstetric, gynecologic, interventional procedures, vascular imaging and neurosonography; 18-month program; national certification examination required at completion. Prerequisite: completion of an accredited two-year allied health program or registered nursing program.

673:905 Medical Sonography Clinical Course 0 s.h.

673:911 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 of program. Prerequisite: completion of an accredited medical sonography or vascular technology program.

673:912 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.

674:906 Magnetic Resonance Imaging Technology 0 s.h.
Procedures, pathophysiology, physics, advanced sectional anatomy, instrumentation, supervised clinical education; nine-month program; national recognition examination recommended at completion of program. Prerequisite: completion of radiologic technology program.

675:908 Vascular Imaging Technology-I 0 s.h.
Imaging equipment, pharmacology, special techniques, cardiac monitoring, vascular anatomy and physiology, imaging procedures, interventional techniques, digital angiography; six-month program; national recognition examination recommended at completion of program. Prerequisite: completion of radiologic technology program.

675:909 Vascular Imaging Technology-II 0 s.h.

676:910 Fellowship in Computed Tomography 0 s.h.
Sectional anatomy, procedures and pathology, physics and imaging, introduction to multidetector CT, anatomic and cross-sectional imaging; 18-month program; national recognition examination recommended at completion of program. Prerequisite: completion of radiologic technology program.

676:913 Computed Tomography Clinical 0 s.h.

Council on Speech Pathology and Audiology

The council coordinates clinical services and training in speech-language pathology and audiology offered by The University of Iowa Hospitals and Clinics [Division of Developmental Disabilities, Department of Pediatrics, Child Health Specialty Clinics, Department of Psychiatry-Child Psychiatry Service, Department of Otolaryngology-Head and Neck Surgery, Department of Neurology]; the Veterans Affairs Medical Center in Iowa City, and the Department of Speech Pathology and Audiology.

Dental Service

The College of Dentistry Dental Clinics provide comprehensive dental care to anyone interested in receiving dental treatment. Patients may choose to be treated by students, graduate students, or private dentists. Because the student clinics are teaching clinics, dental procedures take longer and may require more visits to complete. However, treatment by students is provided on a reduced-fee basis.

The Dental Clinics operate on a fee-for-service basis payable at each visit by cash, check or credit card. Appointments or additional information may be requested through the clinics.

Health Occupations Education

The Program in Health Occupations Education collaborates with the Iowa Department of Education to provide technical assistance, development of curricula, instructional materials and competency tests for continuing education, and short-term preparatory health occupations programs in Iowa’s 15 community colleges and in public secondary schools. In addition, its staff members provide in-service programs and courses for development of community college and secondary teachers. They also serve as undergraduate advisers to students majoring in health occupations education.

Hardin Library for the Health Sciences

The Hardin Library for the Health Sciences serves the combined information and research needs of the Colleges of Dentistry, Medicine, Nursing, Pharmacy, and Public Health; the Department of Speech Pathology and Audiology; and the University of Iowa Hospitals and Clinics. The largest of the departmental libraries in the University library system, the Hardin library contains more than 340,000 volumes and receives more than 2,500 periodicals.

In addition to providing ample space for these collections, the interior allows for enough reading, study, and workstation space to accommodate approximately 700 people. The library’s special features and services include Healthnet, which provides computerized access to the latest health sciences literature, including citations from MEDLINE, Current Contents, and other databases. Healthnet databases can be reached via workstations in the Hardin Library and from other computers equipped with modems or connected to the campuswide electronic network.

The Information Commons provides two multimedia classrooms, each of which can accommodate 50 people. The commons also supports special instructional development facilities. All of the workstations in the Information Commons are fully networked for access to campus resources and the Internet.

The Hardin Library has a large collection of print materials ranging from electronic journals to rare books in the John Martin Rare Book Room.

Users can contact the Hardin Library using electronic mail if they have reference questions or would like to order documents. As part of The University of Iowa’s library system, the Hardin Library uses an automated integrated library system available both on and off campus. All materials acquired since 1980 are available through this system as are current periodicals, a large number of government publications, and many older items. Several electronic databases to journals in other sciences, the humanities, and social sciences also are available through the University of Iowa Libraries web service.
Oakdale Research Campus

The Oakdale Research Campus and adjacent Oakdale Research Park are located in Coralville, about 10 minutes from the main University campus in Iowa City.

Among more than 20 health-related programs based on the Oakdale Research Campus are the Center for Advanced Drug Development, the University Hygienic Laboratory, and the Institute for Rural and Environmental Health.

Others include the dental research clinic, Animal Care Research Facility, biology laboratories, Iowa Drug Information Service, Pediatrics Bone Healing Laboratory, the Center for the Health Effects of Environmental Contamination, the University Hospitals’ Air Care emergency helicopter service hanger and landing pad, and other College of Medicine research units. Also at Oakdale is the Obermann Center for Advanced Study.

Seven health-related companies are tenants at the University’s Technology Innovation Center business incubator on the Oakdale Campus. A major University industrial biotechnology laboratory, the Center for Biocatalysis and Bioprocessing, is located in the Multi-Tenant Facility on the Oakdale Research Park. College of Medicine genetics laboratories also are located in the Multi-Tenant Facility. Three health-related companies reside at the Research Park.

The National Advanced Driving Simulator is expected to be fully operational in 2000.

The University of Iowa Research Foundation, which manages patents and licenses involving UI intellectual property, is on the Oakdale Research Campus.

The Oakdale Research Campus is administered by the Office of the Vice President for Research. For more information, see “Research and Interdisciplinary Activities” in this section of the Catalog.

Ronald McDonald House

The Iowa City Ronald McDonald House provides a home away from home for families of critically ill children receiving care at University of Iowa Hospitals and Clinics. Many of these children and their families must travel long distances from their homes and are in Iowa City for prolonged stays.

The Ronald McDonald House is a not-for-profit organization. It relies more than 50 volunteers to help with daily activities. Since the Iowa City Ronald McDonald House opened in 1985, its occupancy has averaged 90 percent. More than 25,000 adults and children from 10,500 families have stayed there.

Rossi Volunteer Guest House

The Helen K. Rossi Volunteer Guest House, a 14-room hospitality house located in University Hospitals and Clinics, provides comfortable accommodations for adult patients and/or their families. Guests are eligible to stay while patients are receiving medical treatment. Referrals are accepted from UI Hospitals and Clinics staff, or guests may refer themselves.

Named for one of the founders of University Hospitals and Clinics’ Volunteer Program, the Helen K. Rossi Volunteer Guest House honors the contributions of the hundreds of volunteers at the hospitals and clinics.

University (State) Hygienic Laboratory

The University Hygienic Laboratory is the state of Iowa’s environmental and public health laboratory. It tests every baby born in the state for inborn errors of metabolism, monitors water and air quality, and provides critical information for decision support, consultation, and training in bacteriology, immunology, parasitology, serology, virology, molecular biology, toxicology, mycology, prenatal and neonatal disease screening, environmental monitoring, inorganic/organic chemistry, radiochemistry, and industrial hygiene.

The laboratory also provides complete laboratory program support to the Iowa Department of Public Health, the Iowa Department of Natural Resources, and the Division of Labor of Iowa Workforce Development.

Specialized Child Health Services

The Iowa Specialized Child Health Services is an organization that administers several statewide health services for children. Among these are the Genetic Consultation Service, Coronary Disease Prevention Program, Cystic Fibrosis Program, Childhood Cancer Diagnostic and Treatment Program, Rural Comprehensive Care Program for Hemophilia Patients, Statewide Perinatal Care Program, Iowa Newborn Screening Program, and a program of Mobile and Regional Child Health Specialty Clinics.

At Mobile and Regional Child Health Specialty Clinics (CHSC) conducted in communities throughout the state, Iowa residents are provided with diagnosis and evaluation services in pediatrics, orthopaedics, otolaryngology, speech pathology, audiology, physical therapy, nutrition, and clinical and educational psychology. CHSC also provides monitoring and follow-up services on special health problems related to special health care needs such as juvenile rheumatoid arthritis, muscular dystrophy, phenylketonuria, and hemophilia.

University Hospital School

University Hospital School (UHS), a component of The University of Iowa Hospitals and Clinics, is Iowa’s premier resource for comprehensive family-centered care. Its goals are to guide health care students and consult with professionals in disability-related fields; to care for people of all ages with disabilities of all kinds; to advance knowledge of disabilities; and to share knowledge with individuals, families, and professionals.

The U.S. Administration of Developmental Disabilities has designated University Hospital School as Iowa’s university-affiliated program.

Each year, UHS provides services and supports to more than 3,500 individuals with disabilities-infants, children, and adults-and to their families. Because people who use UHS services have complex needs, UHS uses an interdisciplinary team approach to meet these needs. UHS teams provide expert care for individuals with concerns related to physical and mental disabilities, behavior disorders, communication disorders, learning and attention disorders, mobility concerns, nutrition disorders, and sleep disorders. The UHS staff includes professionals from fields such as audiology, education, medicine, nursing, nutrition, occupational therapy, pediatric dentistry, physical therapy, psychology, recreation therapy, rehabilitation engineering, social services, and speech-language pathology.

As a member of the University community, UHS places a high priority on both preservice and in-service training. In an average year, more than 300 individuals receive training at UHS in one of more than 18 different disciplines, including health administration, audiology, medicine, physical therapy, occupational therapy, speech/language pathology, and nursing. All first- and second-year pediatric residents and second-year family practice residents complete a month-long rotation at UHS. In cooperation with the UI College of Dentistry, UHS provides a required component of the Maternal and Child Health training for dental residents. In addition, the MCH Leadership Training Project at UHS provides graduate training for future leaders in the field of health care for children with developmental disabilities and chronic health conditions.

Recent research at UHS has added to the store of knowledge in areas such as aging in people with developmental disabilities, folate acid levels in women with epilepsy who take anticonvulsants, prevention of secondary complications of disabilities, the use of pneumococcal vaccine in children with Down syndrome, sleep disturbances in children with developmental disabilities, prenatal pharmacogenetic screening, the molecular genetics of neural tube defects, and the use of telemedicine to bring health care to rural Iowans. UHS also has a strong commitment to the development and support of community-based services. Each year UHS staff provide more than 1,000 outreach training and consultation sessions to local providers throughout Iowa.

Wendell Johnson Speech and Hearing Clinic

Located in the Wendell Johnson Speech and Hearing Center, the clinic provides evaluations and consultation for individuals with speech,
language, stuttering, voice, or hearing problems; habilitation or rehabilitation programs for persons who can come to the clinic for such service; summer residential camp and day-camp programs for children with speech, language, hearing, and reading problems; and clinical practicum training for graduate students in speech-language pathology and audiology. Any University of Iowa student may receive services without charge. Products (e.g., hearing aid supplies and accessories), devices (e.g., hearing aids), and hearing aid repair services are provided to University of Iowa students at cost plus handling expenses. Services include diagnostic examinations, consultations, individual and small-group remedial sessions, hearing aid services, and referrals to other clinics as needed.

Veterans Affairs Medical Center

Medical students, residents, and others in health-related fields receive much of their clinical training in this 94-bed facility, which serves as a tertiary referral center for the Department of Veterans Affairs (VA) facilities at Knoxville and Des Moines, Iowa; the VA community outpatient clinics in Bettendorf, Dubuque, and Waterloo, Iowa, and in Galesburg and Quincy, Illinois; and for the some 184,000 veterans residing in its primary service area of eastern Iowa and western Illinois. A full range of inpatient medical, surgical, neurologic, and psychiatric care and more than 25 outpatient primary and specialized services are provided, with some 3,700 admissions and more than 100,000 outpatient visits made to the center annually.

The Iowa City VA medical center, formally affiliated with the University’s four health science colleges, offers unique training opportunities in clinical pharmacology, gastroenterology, cardiology, nephrology, oncology, and applied immunology. Modernization and construction of a new ambulatory care clinic has resulted in the latest facilities for radiology, nuclear medicine, clinical laboratory, and outpatient clinics.

Research also plays a major role at the medical center. Major research areas include the Diabetes and Endocrinology Research Center (DERC). Infectious Disease Laboratories, and Cardiovascular Laboratories. It ranks among the top three nationally in VA research funding.

IOWA CENTER FOR THE ARTS

The University of Iowa is America’s pioneer in the integration of higher education and the creative arts. As the first university in the nation to grant the credit for creative work in the arts, The University of Iowa served as the model for the creative arts programs that now exist in many American universities and colleges.

The legacy of that leadership is found in the Iowa Center for the Arts, a collection of academic and performance units that constitute what may be the most extensive creative arts campus in the country, embracing the arts of fiction, poetry, playwriting, nonfiction writing, classical and contemporary music, jazz, theater, ballet, modern dance, numerous disciplines in the visual arts, multimedia, television, film, arts education, and book arts.

Throughout the arts campus are programs and activities that embody the University’s commitment to creativity, including the Writers’ Workshop, the International Writing Program, the Center for the Book, the Center for New Music, the Composers Workshop, the Experimental Music Studios, and the Playwrights Workshop.

Gathered along the Iowa River are facilities that house the arts center’s academic, performance, and exhibition functions-Hancher Auditorium, the Museum of Art, the Theatre Building, the Voxman Music Building, Clapp Recital Hall, the Art Building, Halsey Hall, Dev House, the English-Philosophy Building, and North Hall.

The arts center facilities include many of the academic arts units in the College of Liberal Arts, together with performance and exhibit spaces in the Theatre Building, Voxman Music Building, School of Art and Art History, the Museum of Art, and Hancher Auditorium, the center’s largest performing arts showcase.

In addition to activities housed in these facilities, various educational programs in other parts of the campus reflect the University’s strong commitment to artistic creativity.

Financial support from many sources, both public and private, is reflected in the physical structures and the educational and cultural offerings of the Iowa Center for the Arts. In addition to resources from the state of Iowa and the federal government, private contributions from growing numbers of corporate and individual patrons play an important role in the quality and diversity of the center’s services to University students and to the people of Iowa and the surrounding region.

School of Art and Art History

The School of Art and Art History provides an exciting creative and scholarly environment for students of art, art history, and art education. A large and diverse faculty enjoy collaborative opportunities across many related disciplines at the University.

The school provides a broad spectrum of interdisciplinary resources and programs, including the Project for Modern Studies, the Project for Advanced Study of Art and Life in Africa, open forums, colloquia, and workshops in the studio arts and a distinguished lecture series in art and art history. In addition, the University houses the Fine Arts Dada Archive and Alternative Traditions in the Contemporary Arts.

Other outstanding resources include the Office of Visual Materials, with a collection of almost 300,000 slides, and a large art library whose holdings include 95,000 volumes, an exceptional periodical collection, and a microfilm and microfiche archive.

The school’s faculty and students have the opportunity to work closely with the director and staff of the Museum of Art, which is adjacent to the school. The museum houses a significant permanent collection with special strengths in 20th-century art and African and pre-Columbian art.

Dance Department

The Dance Department’s strength in both ballet and contemporary dance and its emphasis on both performance skills and artistic creativity make it distinctive among college dance programs. In recent years, professional ballet companies have employed more graduates from Iowa than from any other college dance program.

Students in all dance styles find many performance opportunities each season. In the annual Dance Gala, the UI Dance Company performs in Hancher Auditorium, one of the Midwest’s finest dance stages. Students selected for the roster of Dancers in Company, the department’s touring repertory company, gain practical experiences similar to those encountered by professional touring companies. Faculty, student, and thesis concerts provide other creative and performance opportunities throughout the year, and many dance students also perform in productions of University Theatres and the UI Opera Theater.

Teaching opportunities for graduate and undergraduate dance students may be found in the Arts Share Program, the Young Dancers Program, the Saturday Dance Forum, and through graduate teaching assistantships.

The many Hancher Auditorium dance performances by prominent companies each season provide a valuable resource to dance students, enabling them to observe and interact with dance artists of the highest level. On occasion, touring companies at Hancher have involved University of Iowa dance students in their performances, and many of the companies are engaged to provide open rehearsals, master classes, workshops, and lecture-demonstrations for dance students.

Housed in Halsey Hall, the Dance Department enjoys some of the finest teaching and rehearsal facilities in the nation, including five studios, two classrooms, an audiovisual room, and a 200-seat workshop and performance space in North Hall.

Teaching responsibilities are shared by eight full-time faculty members and from four to eight teaching assistants. Each year the department schedules a series of guest-artist residencies, in which leading dance professionals teach and create new works of choreography.

Ninety percent of the department’s technique classes are accompanied by a staff of two full-time and several part-time musicians, and a full-time technical director attends to all of the department’s production needs.

The Dance Department has participated for the last two decades in the American College Dance Festival Association festivals, where University
of Iowa choreography, productions, and student dancers have consistently achieved regional and national recognition. The University hosted ACDAF festivals in 1981, 1986, 1993, and 1997, and an Iowa dance production was invited again to the 2000 national festival.

School of Music

The School of Music enjoys a longstanding national reputation for excellence and innovation. It provides students with rich and diverse opportunities for music research and scholarship, as well as extensive training in applied music. They study with faculty mentors whose performance experience is wide-ranging—from playing in or conducting high school marching bands to singing with major opera companies to presenting new works in collaboration with their composers.

Each year, faculty artists and student ensembles present about 200 major public concerts, including performances by the University’s bands, orchestras, and choruses. Some 200 vocal and instrumental recitals are presented by students.

The school produces both opera and musical theater. These stage presentations provide interdepartmental opportunities for educational and performance experience, using the talents and resources of other units of the Division of Performing Arts.

The School of Music is at the vanguard of innovation in the arts, creating and performing works in new forms. Its Center for New Music, originally funded by the Rockefeller Foundation, is a laboratory and extension of the composition area. Faculty and student members of the Center for New Music form a repertory ensemble for the performance of both new compositions and masterworks of the 20th century. The Composers Workshop has extended the creative workshop concept that was pioneered in the literary arts to the development of young composers.

Two experimental music studios provide a wide range of technical capability for creative audio-musical forms, including computer-generated music. Works created in the studios are presented with other student compositions in an annual series of performances. Outstanding recording facilities link the various performance spaces of the Voxman Music Building/Hancher Auditorium complex with a central-recording studio in the music building. The digital recording capability of the studios has been widely used to produce commercial compact discs by major artists.

The Voxman Music Building, opened in 1971-72, was designed to include spacious and convenient performance facilities. Its broad corridors lead from rehearsal rooms to recital halls and to the stage of Hancher Auditorium.

The University of Iowa Center for the Book is an interdisciplinary program for the study and practice of traditional and nontraditional book arts and for study of the book as a cultural and historical artifact. The center provides a unique configuration of workshops designed for personal work or artistic collaboration and offers an academic and scholarly program that complements the workshops by focusing on the book’s histories, its role in culture, contemporary theoretical approaches to its study, and related research. The center offers a graduate certificate in book studies/book arts and technologies (see “Center for the Book” in the Liberal Arts section of the Catalog).

As an interdepartmental program, the center brings together faculty members and other specialists who have gained favorable recognition in the international book arts community. They teach classes, train apprentices, conduct research, and practice book crafts. Faculty members in history, classics, communication studies, English, creative writing, and other academic areas also teach courses and work with the center’s academic curriculum relating to historical and cultural areas of book studies.

Close affiliates of the center include University Libraries’ Conservation Lab and Special Collections, the School of Library and Information Science, the School of Art and Art History, and the Writers’ Workshop. The center also sponsors lectures and exhibitions and cosponsors events with the Iowa City Book Arts Club.

Writing Programs

The University of Iowa nurtures one of the most active literary centers in the country. Its academic writing programs and frequent public readings inspired a national magazine to rank Iowa City’s literary scene as second only to New York City’s

The Writers’ Workshop was America’s first college degree program in creative writing and continues to be one of the most selective graduate programs in America. The workshop served as the blueprint for the many creative writing programs that now flourish on campuses in the United States and abroad, and it remains the most influential creative writing program anywhere. The Writers’ Workshop has produced 15 Pulitzer Prize winners and winners of virtually every other major literary award and recognition. The Writers’ Workshop administers the world’s largest annual prize in literary criticism on behalf of the Truman Capote estate.

A growing presence in the UI literary scene is the English Department’s respected program in nonfiction writing, which nurtures writers in the arts of personal essay, portraiture, and autobiography. The Iowa Playwrights Workshop, described under “University Theatres,” is closely allied with the writing programs in the English Department.

The University of Iowa also is home to the International Writing Program, a unique residency program for established writers from other countries. Its participants range from emerging talents to writers who are among their countries’ leading literary figures and writers of world stature.

Each fall the International Writing Program organizes a community of poets, fiction writers, essayists, playwrights, and journalists from around the world. At the University they live and interact with each other while working on writing and translation projects. They are accessible to the public through a series of readings, panel discussions, and other presentations.

In addition to being the largest foreign-writer residency program anywhere, the International Writing Program serves as an active advocate for imprisoned, persecuted, and censored writers. The importance of this unique program to international understanding has been recognized with a Nobel Peace Prize nomination.

The International Writing Program sponsors the following courses.

48W:180 Creative Drawing, Writing, and Storytelling 3 s.h.
48W:189 International Literature Today (Same as 008:191) 1,3 s.h.

University Theatres

The University of Iowa Department of Theatre Arts has been a pioneer in the study of all aspects of theatrical creation and production. While University Theatres produces many plays from the standard repertoire, the department’s emphasis is the creation, development, and production of new works.

The Iowa Playwrights Workshop is recognized as one of the nation’s leading programs in creative writing for theater. The department’s special strength is the integration of this playwriting workshop with a full range of acting, directing, design, and technical resources. Student playwrights are able to refine their scripts through production—the most practical and effective way to develop plays—while student actors, directors, and designers have an opportunity to grapple with the challenges of producing new work. Each season University Theatres presents as many as 40 new scripts in productions and readings.

This focus on new work is exemplified in the spring Iowa Playwrights Festival, which presents productions of as many as a half-dozen of the workshop’s best new scripts in a single week and gathers a group of distinguished theater professionals as respondents.

The department has also initiated a Partnership in the Arts program, which invites prominent theater artists to develop significant new works for the theater in collaboration with University students, faculty, and staff.
The University of Iowa Museum of Art (UIMA) recognizes its responsibility to serve a varied statewide audience. Although its primary constituency is the University community, especially students and faculty members, the museum’s reputation and growing permanent collection attract a national and international audience as well. The UIMA collection of more than 11,000 objects has three notable strengths: late 19th and 20th-century European and American painting, works on paper, and African art. Paintings number some 550, including Jackson Pollock’s Mural, Max Beckmann’s Carneval, and Joan Miro’s A Drop of Dew Falling from the Wings of a Bird. The museum’s 4,200 prints include impressions by James McNeill Whistler, Mary Cassatt, Rembrandt van Rijn, Henri Toulouse-Lautrec, Francisco Goya, and contemporary masters; its collection of drawings represents artists from Francois Boucher to Mark Rothko.

The museum’s collection of African art, which features more than 1,100 examples of art from west, central, and east Africa, represents the entire sub-Saharan continent. Begun with major gifts from the late Max and Betty Stanley of Muscatine, it is one of the most prized collections of the museum. Other distinguished collections include 20th-century sculpture, British and American silver, contemporary American ceramics, 20th-century photographs, and Pre-Columbian, Oceanic, and Native American art.

In the early 1960s Owen and Leone Elliott of Cedar Rapids offered the University their extensive collection of 20th-century paintings, prints, antique silver, and jade on the condition that a museum be built to house it, along with the University’s existing and future acquisitions of art.

In response to this challenge, more than 2,000 individuals and businesses contributed funds for the museum’s construction. Opened in 1969, the museum quickly earned recognition as one of the nation’s finest university art museums. A gift from the late industrialist Roy Carver, of Muscatine, made possible the construction of a major addition, which opened in 1976.

The museum presents an average of 10 special exhibitions per year as well as continuous rotation of the permanent collection. At any one time, the galleries provide for visitors of all ages a variety of exhibition and educational experiences ranging from the scholarly and esoteric to the popular.

Museum special events include slide-lectures by visiting artists, scholars, and collectors; “Music in the Museum,” a Sunday afternoon concert series; and “Perspectives,” a weekly program of lectures, discussions, and demonstrations. Museum docents lead groups on guided tours of the museum’s exhibitions, and catalogs of many exhibitions are available for purchase. Friends of the Museum of Art, a private support group, sponsors receptions and exhibition openings and participates in active print, and ethnographic study clubs.

Hancher Auditorium
Hancher Auditorium is recognized nationally and internationally as a leading university-based center for the performing arts. The 2,500-seat multipurpose facility opened in 1972, and in its first quarter-century has hosted a total of more than three million audience members. A major renovation that began in 1995 included improvements in services for people with disabilities. In addition to a hearing augmentation system that has been in use for many years, the auditorium now is one of a handful of theaters in the country to offer audio description for people with visual impairment.

Hancher’s programming is renowned for its quality, diversity, and innovation. Audiences from throughout Iowa and surrounding states are attracted to a packed schedule of Broadway shows, touring theater companies, classical and jazz superstars, the traditional arts of other cultures, family entertainment, and prominent dance companies. But while Les Miserables, Cats, Spock, and other big-name events attract sell-out crowds, Hancher’s international reputation as a leader in the performing arts is based on its active cultivation and advocacy of new works and emerging artists.

Hancher has commissioned dozens of choreographers, composers, and playwrights and has presented the world and American premières of numerous dance, theater, and music events. The auditorium is probably best known for its co-production of large-scale works by the Joffrey Ballet, including The Nutcracker and the Jeffrey/Prince collaboration Billboards, but its commissioning activities also have included multiple project associations with the Kronos Quartet, the Bill T. Jones/Arnie Zane Dance Company, the Parsons Dance Company, the Paul Dresher Ensemble, Rinde Eckert, the Cleveland Quartet, and other artists.

In its 1999-2000 season, Hancher presented a millennium festival, featuring more than a dozen major commissions and several American and world premieres.

A pioneer in arts education and outreach, Hancher sponsors artist residencies, performances, and master classes for school groups, seminars and symposia in conjunction with performances; and pre-and post-performance discussions. Hancher also presents artists to schools statewide through interactive broadcasts on the Iowa Communications Network. Also a Midwest pioneer in fundraising for the arts, Hancher’s programming and commissioning is supported by the Hancher Auditorium Enrichment Fund, a growing endowment launched by a National Endowment for the Arts Challenge Grant, as well as by an expanding annual fundraising effort that is attracting support from businesses and individuals.

Hancher’s innovative programming has attracted recognition from the International Society for the Performing Arts, Chamber Music America, the Association of Performing Arts Presenters, and the National Endowment for the Arts. The auditorium is one of 21 American arts presenters and one of only two university-based organizations profiled as “exemplary” in the book 21 Voices.

Hancher is also an educational laboratory that is the site of performances by the UI Opera Theatre, the UI Dance Company, the Old Gold Singers, the University Symphony, the Symphony Band, and ensembles of the All State Music Camps. The auditorium is a source of employment for dozens of University of Iowa students each year, and students qualify for discounts on tickets to virtually all Hancher events. Hancher traditionally is among the nation’s top university performing arts halls in student attendance as a percentage of its audience.

Arts Share
The University of Iowa’s Arts Share Program continues a longstanding University of Iowa tradition by providing arts education outreach programming to Iowa schools and community organizations through off-campus workshops and performances by faculty and graduate student artists. Arts Share features more than 100 artists from the School of Art and Art History, the Dance Department, the School of Music, the Department of Theatre Arts, and the Writers’ Workshop. Among their specialties are film writing and production, creative dance movement, papermaking and bookmaking, vocal and instrumental music, pottery, storytelling, poetry and fiction writing, playwriting, and acting.

MUSEUM OF NATURAL HISTORY
The Museum of Natural History, located in Macbride Hall, is an outgrowth of the Cabinet of Natural History, established in 1858 by an act of the Iowa General Assembly. It is the oldest university museum west of the Mississippi River.

To meet the needs of the general public and the various natural science departments of the
University, the Museum of Natural History provides a repository and the proper care for objects and specimens that come to the University either by gift or through the efforts of its own collectors. These collections, with primary focus on Iowa, the Midwest region, and North America, are representative of the disciplines of biology, geology, and anthropology and are used for research and teaching by University faculty and students as well as for public exhibition and interpretation.

The museum’s 6,000-square-foot Iowa Hall gallery features 60 multisensory exhibits linked by space, theme, and time, illustrating Iowa’s natural heritage—its geology, native culture, and ecology. Exhibit highlights of Iowa Hall include the Marquette-Joliet diorama, Devonian reef, Mesquakie lodge, and a life-size reconstruction of an Ice Age giant ground sloth.

The William and Eleanor Hagebock Hall of Birds features the Laysan Island cyclorama, a large and well-known bird habitat exhibit comprising a complete representation of a bird island of the Hawaiian group. Other exhibits showcase the museum’s comprehensive collection of more than 1,000 mounted North American birds. Included are thematic and interactive displays illustrating the adaptations, diversity, habitats, and behaviors of birds.

Mammal Hall exhibits are topically designed to illustrate the evolutionary biology and diversity of mammals. Habitat exhibits feature walrus, bison, antelope, mountain lion, musk-ox, and giant panda. Also displayed is a complete 47-foot-long skeleton of the rare Atlantic right whale.

The major invertebrate phyla are represented in several ground floor exhibits; they include familiar groups such as insects and crustaceans, snails and clams, sea stars, and corals.

Ethnological exhibits in the museum present cultural artifacts from many parts of the world. Northern Athapaskan and Inuit materials, including the Frank Russell Collection of beadwork and carved ivory received in the late 19th century, are exhibited. The ancestry of humans through 12 million years of time is portrayed in a display featuring replicas of fossil remains from Africa, Asia, and Europe.

Guided group tours of exhibit halls are offered daily by museum docents and can be arranged by advance reservation. The University offers free classroom training courses on e-mail, statistical packages, database tools, word processors, and other computing applications. Training centers are equipped with computers and TV/VCRs, and the video lab holds videos on various software programs.

OTHER SERVICES

Evaluation and Examination Service

The Evaluation and Examination Service duplicates, scores, and provides statistical analysis of classroom tests; processes course and instructor evaluations; conducts institutional research; prepares informational bulletins pertaining to evaluation and testing issues; and provides consultation on questionnaire design, data collection, and processing.

The exam service administers The University of Iowa placement test program to help students and their advisers make decisions about course selection. It also operates a computer-based test center for the administration of national admission test programs. Information bulletins and registration materials for most test programs are available from the Exam Service.

Information Technology Services

The Printing Department is the University’s only authorized printer. A full-production facility, it offers design, editorial, composition, typesetting, proofreading, platemaking, printing, duplicating, and binding services.

The department also supports faculty, staff, and students using electronic publishing to produce University-related print and display materials. Its services include staff computer consultants; compatibility with a variety of fonts and software; laminating; and archival scanning. The department provides the University community access to a range of printing devices: standard-size digital color; large-format digital color; large-format digital black-and-white; high-resolution; and three Xerox DocuTechs. All equipment is on-line and capable of receiving files electronically. Experienced customer service staff members are available to advise clients on printing and to help plan print-related orders. The department’s six satellite document centers, conveniently located throughout campus, offer 24-hour turnaround on copying, duplicating, and finishing services, such as collating and stapling.
Radio Broadcasting Services

WSUI (910) and KSUI-FM (91.7) extend the resources and activities of the University to the people of eastern Iowa with 24 hours of daily broadcasting. The broadcast schedule consists of educational, cultural, and informational programming not generally available elsewhere. An affiliate of National Public Radio (NPR), WSUI contributes program materials to a national network of more than 400 noncommercial radio stations. The main studios and offices are located in the Clinton Street Building and a free copy of the WSUI-KSUI Program Guide is available.

The University of Iowa Alumni Association

Since its organization in 1867, The University of Iowa Alumni Association has worked to encourage graduates, former students, and friends to continue their involvement with the University. In addition to offering traditional programs such as class reunions, the Alumni Association offers career networking opportunities and promotes camaraderie through its alumni tour program. The association also provides alumni enrichment programs, sponsors a network of alumni clubs that take the University to alumni throughout the state and nation, recognizes distinguished alumni, and publishes the Iowa Alumni Magazine to keep its more than 50,000 members up-to-date on University news and alumni achievements.

Iowa students are an important part of the UI Alumni Association’s work on behalf of the University. Not only does the association help recruit prospective students, it also provides the on-campus Career Information Network for students exploring careers, and it sponsors the Student Alumni Ambassadors, who plan and conduct the annual fall Parents Weekend.

Outreach activities of the Alumni Association are supported primarily by membership dues.

The University of Iowa Foundation

The University of Iowa Foundation was organized in 1956 to help the University obtain the greatest possible educational benefit from private giving. The foundation is the preferred channel for private gifts to The University of Iowa through annual giving programs, planned gifts such as bequests and trusts, and capital and other special-purpose campaigns.

The UI Foundation is a nonprofit organization empowered to solicit and receive gifts and bequests; to accept trusts subject to the conditions imposed on them; and to hold, administer, or distribute gifts, bequests, and trusts—all for the benefit of The University of Iowa.

The foundation pursues numerous fund-raising initiatives for broad-based needs throughout the University. These priorities, which are set by the University’s central administration, include student financial aid, faculty and staff support, research programs, and campaigns for new and renovated facilities. In addition, the foundation works with University faculty and staff members on numerous projects and campaigns dedicated to expanding private support for specific collegiate and departmental priorities.

The University of Iowa Press

The University of Iowa Press was established to publish significant results of original scholarly research and outstanding creative work in the arts. The press annually publishes 35 new books in a variety of fields—works that are reviewed nationally by a wide spectrum of magazines, journals, and newspapers. The press reports directly to the vice president for research and to an advisory board appointed by the vice president.

Office of University Communications and Outreach

The Office of University Communications and Outreach (UCO) works to promote awareness, understanding, and support for the University’s missions of teaching, research, and service, both within the University community and among the general public. It counsels the University administration on public relations, community relations, and communication needs. It also serves as a liaison to facilitate communication between the central administration and appropriate University, governmental, civic, and other groups.

University communications and outreach programs are implemented through coordinated efforts of the director’s office, University News Service, Arts Center Relations, Health Sciences Relations, Outreach and Special Projects, and Publications. The staff members of these units specialize in coverage of the arts, humanities, and sciences. They supply news and information to print, broadcast, and electronic media. In addition, University Communications and Outreach staff members provide web content, development expertise, and policy advice for a number of University programs.

Publications publishes Spectator for alumni and friends of the University; Parent Times for students’ parents; fyi, the University’s newsletter for faculty and staff; Arts Iowa, featuring forthcoming arts activities; and specialized materials for prospective students, in association with the Office of Admissions. The department produces other special and general-interest publications and web projects for external audiences, in collaboration with other University of Iowa departments and colleges.

UCO also serves as the executive office of The University of Iowa Parents Association.

University Ombudsperson

The Office of the University Ombudsperson responds to problems and disputes brought forward by any member of the University community—student, staff, and faculty. The ombudsperson investigates claims of unfair treatment or erroneous procedure and serves as a neutral and detached listener, information resource, adviser, intermediary, and mediator. See “University Ombudsperson” in the Student Life at Iowa section of the Catalog.
# College of Liberal Arts

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Dean: Linda Maxson  
Executive associate dean: Raul Curto  
Associate dean for academic programs: Frederick J. Antczak  
Associate dean for research and development: Michael O’Hara  
Web site: [http://www.uiowa.edu/~libarts](http://www.uiowa.edu/~libarts)
The College of Liberal Arts provides a comprehensive liberal arts education and advanced education in specialized areas. Its students and faculty members work together to create, preserve, and disseminate knowledge. The college’s faculty also provides postbaccalaureate education through the Graduate College.

The college is closely linked with the University’s professional colleges. Undergraduate students planning to graduate from the Colleges of Business, Medicine, and Nursing all begin their course of study in the College of Liberal Arts. Students admitted to the Teacher Education Program in the College of Education receive their degrees from the College of Liberal Arts. The college also provides instruction for students in the Colleges of Engineering and Pharmacy. Students in liberal arts may complete degrees and minors in other colleges; similarly, other colleges may award their students minors for work done in the College of Liberal Arts.

More than 50 undergraduate majors are available, each offering extensive study of a particular academic discipline or set of related disciplines. The range and scope of the college help every student achieve breadth of knowledge and exposure to a variety of analytical approaches. The college encompasses educational programs in fine arts, humanities, social sciences, and mathematics, as well as interdisciplinary studies. These programs prepare students to participate in the complex and ever-changing economic and political life of their community and society. They also can provide the foundation for specialized training in dentistry, medicine, nursing, pharmacy, business, law, and education.

The General Education Program exposes all undergraduate students regardless of their majors to course work in every area of the college: the natural and mathematical sciences, the social sciences, and the humanities and the arts. This breadth is designed to enable students to understand the physical and technological world in which they live, the social organizations in which they act, and the values of past and present civilizations that form their own and others’ cultures. Students are expected to raise significant questions, find satisfying answers, and evaluate their attitudes and beliefs.

The graduate and undergraduate majors, certificates, and minors offered by the college’s schools, departments, and programs are described in detail in the departmental sections of the Catalog.

The College on the Internet

The college’s web site serves as a gateway to departmental web sites, where departments post extended and updated information about their programs, faculty, and students. The college’s site also includes information from the Office of the Dean and the Liberal Arts Office of Academic Programs, news of the college, and links to other helpful sites.

Admission Requirements

Students are admitted to the College of Liberal Arts on the basis of three criteria: completion of a set of high school unit requirements; high school class rank or college transfer grade-point average; and ACT/SAT results or a combination of high school/college records and standardized test scores. Some College of Liberal Arts programs have selective admission procedures. Admission to these programs is based on grades in specified prerequisite courses, cumulative grade-point average, and other criteria.

The University of Iowa requires all students entering directly from high school and all transfer students who present fewer than 24 semester hours of transferable credit to complete either the ACT Assessment Test (ACT) or the Scholastic Assessment Test (SAT I: Reasoning Test) and have their scores reported to the University before they register for classes. These examinations are used as a criterion for admission, for placement purposes, for advising, and for awarding University-administered scholarships and loans.

Unit Requirements

The College of Liberal Arts faculty recognizes that entering students need to be prepared for college course work immediately upon matriculation at the University. Students who enter with a strong college preparatory curriculum have a better chance to succeed academically and are more likely to be admitted to the degree program of their choice.

To qualify for unconditional admission to the College of Liberal Arts, applicants are required to have completed the following set of high school courses or their equivalents, in addition to the other requirements listed below. These high school unit requirements apply to entering first-year students who graduated from high school after 1985; transfer students with fewer than 24 semester hours of transferable credit who graduated from high school after 1985; and transfer students with 24 or more semester hours of transferable credit who graduated from high school in 1991 or after. The unit requirements are:

- four years of English/language arts, with emphasis on writing, speaking, and reading as well as understanding and appreciation of literature;
- three years of mathematics [two years of algebra and one year of geometry are required];
- two years of a single foreign language;
- three years of natural science (including one year from each of two of these: biological sciences, chemistry, and physics); three years of social studies (American history, anthropology, economics, geography, government, world history, psychology, and sociology);

The following preparation is not required but is strongly recommended for admission to the College of Liberal Arts:

- one year of the visual arts, performing arts, and/or humanities (cinema, dance, drama, music, photography, studio art, theater, visual arts, and survey courses in the arts and humanities);
- a fourth year of mathematics (analytic geometry, trigonometry, or calculus); and
- two additional years of the same foreign language.

Students whose high school curriculum did not provide the courses necessary to complete the unit requirements or who experienced difficulties in scheduling the required courses may apply to the director of admissions for an exception.

Students Entering Directly from High School

Students entering directly from high school with deficiencies in the unit requirements may be offered conditional admission to the College of Liberal Arts if they meet the high school class rank or index requirements for admission. As a condition of admission, these students are required to complete specified college-level courses with a passing grade; they may not take the specified courses P/N. Courses taken to remove deficiencies are not applicable to the General Education Program, with the exceptions of rhetoric and foreign language.

With prior approval of the Office of Admissions, these courses may be taken at an accredited college, university, or community college. Courses taken to remove deficiencies must be completed by the beginning of the student’s second year of study at The University of Iowa. Students may not graduate from the College of Liberal Arts without completing the high school unit requirements.

Applicants whose high schools verify in writing that a two-year sequence of the same foreign language was not available to them at their high school are offered conditional admission if they meet all other unit, high school class rank, and index requirements. They must complete specified college-level foreign language courses with passing grades.

In general, one semester of college work in a core curriculum area (3 semester hours or 4 quarter hours) is required to remove a deficiency of one year or less of high school credit.

Transfer Students

Transfer students who have received an A.A. degree from a college participating in an articulation agreement with The University of Iowa are considered to have fulfilled the unit requirements if they have completed the requirements of the articulation agreement. Other transfer students may use college courses taken elsewhere to make up high school deficiencies. Courses must be completed with passing grades; they may not be taken P/N. Courses taken to remove deficiencies are not applicable to the General Education Program, with the exceptions of rhetoric and foreign language.
Removal of Deficiencies through Testing

Deficiencies in mathematics or foreign language may be removed by satisfactory scores on examinations administered by The University of Iowa. Applicants also may remove deficiencies in English, mathematics, natural science, or social studies by earning acceptable scores on approved standardized tests. Test scores used to remove deficiencies are not applicable to the General Education Program.

Additional Admission Requirements

When applicants seek admission directly from high school, the high school from which they graduated must provide to the University a certificate of high school credits, including a complete statement of high school record, class rank, and certification of graduation. Applicants may be admitted tentatively after they have completed the junior year of high school, but admission is not final until the University has received the final transcript and certification of high school graduation.

Graduates of approved Iowa high schools who are in the upper half of their graduating class generally are admitted after certification of graduation.

Graduates of accredited high schools in other states who are in the upper 30 percent of their graduating class generally are admitted after certification of graduation.

Applicants who do not meet the high school class rank criteria are admitted if they meet a minimum admission index, which is calculated by multiplying the ACT composite score by two and adding the percentile rank in class. A comparable index is used for students who submit SAT instead of ACT scores. The minimum index for admission may vary from year to year. For Iowa residents it ranges from 90 to 100 and for nonresidents from 100 to 110. If a high school does not rank its graduates or if the high school graduating class is small, the applicant’s credentials are reviewed by the admissions review committee.

Applicants also may be considered for admission based on other characteristics that indicate definite promise of success. At the discretion of the admissions officer, such students may be admitted unconditionally, admitted on probation, or denied admission.

Graduates of nonapproved high schools must submit all the information required above and must take examinations that demonstrate their general competence to do successful college work.

Admission without High School Graduation

Applicants who are not high school graduates must submit all the information required above, take examinations to demonstrate general competence to do college work, and provide evidence of specific competence for admission to a given curriculum.

Recruited Students

Some prospective students are recruited as part of the University’s Educational Opportunity Program or because of their exceptional achievement in athletics, fine arts, or other skills related to University programs, performing groups, or other areas of institutional priority. Recruited students who do not meet the standards for regular admission may be admitted through the IowaLink Program, which provides affective and cognitive support to help these students make a successful transition to college.

Admission through IowaLink

Factors considered in determining admissibility through the IowaLink Program include, but are not limited to, the following:
- analysis of the applicant’s high school transcript, with particular attention to course grading patterns and to whether the applicant’s choices are appropriate preparation for college level study;
- standardized test scores, both aptitude and achievement;
- recommendations of teachers, counselors, and administrators;
- the applicant’s own written statement of educational goals and objectives.

In addition to a strong motivation to excel, the applicant must have an overall record showing reasonable evidence that with the use of available academic support and other services, he or she could earn a degree in five to six years at The University of Iowa.

Students recruited by Men’s or Women’s Intercollegiate Athletics must meet the initial eligibility requirements for athletic scholarships set by the National Collegiate Athletic Association (NCAA) in order to be admitted through IowaLink. Students recruited by other units or departments must meet equivalent minimum standards.

Administration of IowaLink resides at the Academic Advising Center. IowaLink includes an academic year (fall and spring semesters). To successfully complete the IowaLink Program, students must meet the College of Liberal Arts standards for good standing or continued enrollment at the time of the May academic review.

Denial of Admission through IowaLink

Recruited students whose records do not meet the standards for the IowaLink Program are denied admission to the University. Although the director of admissions maintains close communication with the recruiting unit or department, he or she has the full authority and responsibility for final decisions on the admissibility of all recruited students.

Transfer Students

Transcripts of records are given full value if they come from colleges or universities accredited by the North Central Association of Colleges and Secondary Schools or similar regional associations. The recommendations contained in the current issue of the Transfer Credit Practices of Designated Educational Institutions, published by the American Association of Collegiate Registrars and Admissions Officers, are followed for schools not regionally accredited.

Applicants must submit an official transcript from each college or university they have attended. They also must submit high school transcripts, scores on standardized tests, and any other records or letters the College of Liberal Arts may require to support their applications for admission.

Transfer applicants who have a minimum of 24 semester hours of graded credit from regionally accredited colleges or universities and who have maintained a grade-point average of 2.25 (based on a 4.00-point system) on all college work previously attempted are admitted.

Students with fewer than 24 semester hours of college credit are considered for admission based on a combination of high school and college academic records and scores on the ACT or SAT.

In general, transfer applicants under academic suspension from the last college attended are not considered for admission during the period of suspension; if they were suspended for an indefinite period, they are not considered until one year has passed since their last date of attendance.

Transfer applicants under disciplinary suspension are not considered for admission until a clearance and a statement of the reason for suspension from the previous college are filed. When it becomes proper to consider an application from a student under suspension, the college must take into account the previous suspension. Applicants granted admission under these circumstances are admitted on probation, and their admission is subject to cancellation.

Students with A.A. Degrees

Students who receive degrees from two-year institutions are granted a maximum of 62 semester hours of degree credit earned at two-year institutions toward the 124 semester hours required for a baccalaureate degree at Iowa. If students have earned more than 62 semester hours of degree credit in completing a degree at a two-year institution, the excess credit is used in computing grade-point averages and may be used to satisfy requirements, but it does not count toward the semester hours needed for a baccalaureate degree at the University.

English Proficiency

The University of Iowa’s English proficiency requirement assures that a student whose first language is not English knows English well enough to study without being hindered by language problems, can understand lectures, and can participate successfully in class discussions.
U.S. Citizens and Permanent Residents

A U.S. citizen or permanent resident whose first language is not English is required to take an English proficiency evaluation as part of the Orientation/Registration program. Exceptions to this requirement are made in the cases of applicants whose ACT English subscore is 21 or higher (SAT 470 or higher) and those whose Test of English as a Foreign Language (TOEFL) score is 600 or higher on the paper-based test or 250 or higher on the computer-based test. Applicants seeking exceptions are directed to the Office of Admissions.

International Applicants

International applicants whose first language is not English are required to submit scores on the Test of English as a Foreign Language (TOEFL) with their application for admission. Automatic waiver of this requirement is granted to applicants who have received a baccalaureate or more advanced degree from a university in the United States, the United Kingdom, Canada (excluding French-language institutions in Quebec), and English-language institutions in Africa, Australia, and New Zealand. Newly admitted students whose TOEFL scores are 600 or higher on the paper-based test or 250 or higher on the computer-based test may begin academic course work without restriction. Applicants whose academic credentials indicate that they should be admitted, but whose TOEFL scores fall between 530 and 599 (paper-based) or 197 to 249 (computer-based), are required to complete an English proficiency evaluation before their first registration for courses.

Based on the results of the evaluation, these students:

- are not required to take English as a Second Language courses; or
- are required to enroll in credit-bearing English as a Second Language courses; or
- are required to enroll in the Iowa Intensive English Program until their language proficiency reaches an appropriate level.

CONDITIONAL ADMISSION

Applicants who meet the academic requirements for admission but whose TOEFL scores fall between 450 and 530 (paper-based) or 133 to 197 (computer-based) may be considered for conditional admission to the College of Liberal Arts. As space permits, conditionally admitted students may enroll in the Iowa Intensive English Program until their language proficiency reaches an appropriate level.

Based on the results of the evaluation, these students:

- are not required to take English as a Second Language courses; or
- are required to enroll in credit-bearing English as a Second Language courses; or
- are required to continue in the IIEP until their language proficiency reaches an appropriate level.

Students without TOEFL scores or with scores below 450 (paper-based) or 133 (computer-based) are not considered for admission to the College of Liberal Arts. These students may enroll in the IIEP. However, IIEP enrollment without conditional admission to the College of Liberal Arts does not imply or guarantee admission to an academic program at The University of Iowa.

English Proficiency Evaluations

On-campus proficiency evaluations are conducted by the Department of Linguistics. If such evaluation warrants, students are required to enroll either in credit-granting courses in English as a Second Language or in the noncredit Iowa Intensive English Program until their language proficiency reaches the appropriate level. Once such proficiency has been established, students are allowed to take a full academic course load. Such students may begin their academic course work only upon the written recommendation of the coordinator of English as a Second Language. (English as a Second Language Courses are described under “Linguistics” in the Catalog.)

Nondegree Students

Students may be admitted to the college as nondegree candidates. These students are classified as nondegree students (A9) and may enroll in courses for personal enrichment, to prepare for admission to professional or graduate college, or to complete a certificate program. Students enrolled in courses as nondegree students are subject to the rules of the college for academic probation and dismissal.

Re-entry

Students who have been absent from the University for 12 months or more must apply to the Office of Admissions for reentry. Students who have been absent for less than 12 months are not required to file an application for re-entry; they should report directly to the Registration Center to begin the registration process.

Students who have been enrolled in another college or university since leaving The University of Iowa are required to submit official transcripts along with their application for re-entry.

Completed application materials must be received two weeks before the opening of classes. Applications received after that date are considered on an individual basis.

Students who have been dismissed from the college for unsatisfactory scholarship have earlier deadlines and must complete an interview in the Office of Academic Programs. See “Reinstatement to the College” under “Academic Standards” in this section of the Catalog.

Office of Academic Programs

The Liberal Arts Office of Academic Programs is an integral part of the Office of the Dean. The staff welcomes students wishing to declare or change majors, file second-grade-only options, request permission to register late, add or drop a course late, or withdraw an entire registration after the established deadlines.

Students may request exceptions to the rules and requirements of the college by petitioning the Student Appeals Committee through the Office of Academic Programs.

Staff members answer questions about the General Education Program, graduation requirements, and collegiate policies affecting students; coordinate the advising of candidates for the B.A. in interdepartmental studies; conduct interviews with students on academic probation; conduct semiannual reviews of students on academic probation and take dismissal actions when students do not meet academic standards; and respond to requests for reinstatement to the college after the period of dismissal has elapsed.

The Office of Academic Programs also considers evidence and recommends appropriate disciplinary action for student plagiarism, cheating, forgery, and other academic misconduct.

Advising

Every student in the college has an adviser to consult about academic and other issues. Most undergraduates are advised during their first semesters by professional advisers at the Academic Advising Center. Others are advised in their major departments. Advising by faculty advisers in the student’s major department is always available by junior year or earlier. Each department also identifies a specific honors adviser.

University Honors Program

The University Honors Program offers special academic and extracurricular opportunities to outstanding students. Every semester a number of honors seminars are offered by senior faculty members in the College of Liberal Arts. These seminars, for first-year students and sophomores, can be used to complete the General Education Program; some of them also can be applied to the requirements of a major. Other special honors sections are offered in some courses approved for General Education. At the junior and senior levels, most departments offer honors seminars, independent research, and the opportunity to pursue a senior project under the guidance of a faculty member.

The Shambaugh House Honors Center is a meeting place and study center for students in the honors program. It houses a reference library, study lounges, and computer terminals. Each year the Associated Iowa Honors Students plans a variety of recreational, social, cultural, and academic activities. Entering students with strong academic records are admitted to the
honors program, and any student whose grade-point average meets or exceeds the required minimum (3.20) may join at any time.

Honors Commendation Award
Students in the Honors Program may earn the Honors Commendation Award if, by the end of their second year or their first 59 semester hours (whichever comes second), they complete at least four graded honors courses with a grade of B or higher in each. The Honors Award includes a Certificate of Commendation from the University Honors Program and a letter of commendation from the University president.

Graduation with Honors
The director of the University Honors Program certifies to the dean of the college the names of graduating students eligible to graduate “with honors.” To be eligible, students must be recommended by their major department and be approved by the Honors Council and the dean of the college.

For more information see “Honors Program” in the Learning at Iowa section of the Catalog, contact the Honors Program at Shambaugh House Honors Center, or visit the Honors Program web site.

National Honorary Societies
The college helps sponsor several opportunities for students to participate in national honorary societies.

Phi Beta Kappa is represented on campus by the Alpha of Iowa chapter. Outstanding students who are eligible, primarily seniors, are invited to join each semester. The University also hosts two national honor societies whose criteria include scholarship, leadership, and service. These are Mortar Board (the Staff and Circle Chapter) and Omicron Delta Kappa. Students in the College of Liberal Arts are among those invited to apply each spring.

Several departments have chapters of national honor societies related to specific academic disciplines: anthropology sponsors the Lambda Alpha national collegiate honors society; geoscience hosts a chapter of Sigma Gamma Epsilon national earth science honor society; journalism sponsors the Leslie G. Moeller chapter of Kappa Tau Alpha, a national honor society honoring scholarship in journalism; music has a chapter of Pi Kappa Lambda; political science has a chapter of Pi Sigma Alpha; psychology sponsors a chapter of Psi Chi, national undergraduate honorary society of the American Psychological Association; and sociology has a chapter of Alpha Kappa Delta, an international sociological honor society.

Special Opportunities for First-Year Students

Four-Year Graduation Plan
The College of Liberal Arts participates in the University’s Four-Year Graduation Plan. Students eligible to participate in the plan can choose from almost all of the programs and degrees offered by the College of Liberal Arts. Participating students sign an agreement that lists general requirements for continuation in the Four-Year Graduation Plan. Specific requirements for each available major program are found in the departmental sections of The Catalog. The “checkpoints” listed for each major represent only the minimum requirements, and many students will want to supplement the minimum work with additional course work in the major. Failure to meet a checkpoint or satisfy the other requirements of the plan does not mean that a student cannot graduate in four years, but it does void the guarantees of the Four-Year Graduation Plan agreement.

Students who take noncredit course work must take additional credit-earning courses to earn the semester hours required for the degree and to satisfy the semester-hour requirement stated in the checkpoints. Students who intend to study abroad or to complete an internship as part of their degree must plan very carefully in order to graduate in four years. In some cases, students may find that the Four-Year Graduation Plan is not a feasible option.

The College of Liberal Arts provides remedies if graduation in four years would be delayed by the unavailability of a course. Students often wish to earn two majors or two degrees, or to add minors or certificates to their programs, and many find it possible to make graduation plans that allow them to achieve these goals. However, the remedies of the Four-Year Graduation Plan are provided to students for only one major.

Failure to meet the academic standards of the College of Liberal Arts voids the guarantees of the agreement (see “Academic Standards” in this section of the Catalog).

Additional information on the Four-Year Graduation Plan is available from students’ advisers or from the Liberal Arts Office of Academic Programs. Notification forms to be used when a needed course is unavailable can be obtained from departments, the Academic Advising Center, and the Liberal Arts Office of Academic Programs.

Courses in Common
First-year students registering during summer orientation have the opportunity to enroll in Courses in Common, a program in which students may register for two or three courses that they will take in conjunction with about 20 other students. Participation in Courses in Common helps students get to know other students more quickly, feel more comfortable in their classes, socialize more, and study together better.

A special selection of Courses in Common combinations, called FACETS, offer a unique, multifaceted learning experience. Students who take FACETS combinations reflect the cultural diversity of the campus and are eligible for tutoring and other academic support services.

OnLine at Iowa
Recognizing the importance of electronic literacy, the College offers entering students an introduction to the UI campus and to electronic communication at Iowa through OnLine at Iowa. During the course, students take an electronic tour of the campus and learn about web sites with services available to students. They are introduced to the Main Library and to electronic searching for information at the library and on the World Wide Web. They learn how to browse and evaluate electronic networks and information sources, send and receive e-mail, use electronic writing and editing tools, and create individual web sites.

Requirements for Graduation
Students may earn Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.), Bachelor of liberal Studies (B.L.S.), and Bachelor of Music (B.M.) degrees from the College of Liberal Arts. Requirements for graduation include completion of a major (the B.L.S. degree is awarded with no major designation), completion of the General Education Program, satisfaction of the residence requirement, completion of a minimum of 124 semester hours, and achievement of a satisfactory grade-point average.

First-Year Seminar Program
The First-Year Seminar Program is designed to give entering students an opportunity to work closely with faculty members and to introduce new students to the intellectual life of the University. Faculty members from many different departments participate, including those from other colleges at the University.

Each First-Year Seminar is limited to a maximum enrollment of 15 students. Seminars are offered for 1 or 2 semester hours of credit, depending on the amount of time spent in class and the amount of outside work required by the instructor. Credit from First-Year Seminars counts toward graduation as elective hours. First-Year Seminars cannot be used to complete the General Education Program, and they do not satisfy requirements for majors or minors.

Additional information on the First-Year Seminar Program is available from students’ advisers or from the Liberal Arts Office of Academic Programs.
Degrees, Majors, Certificates, and Minors

Degrees and Majors

The college confers degrees as indicated in the following major fields. The Bachelor of Liberal Studies (B.L.S.) degree is awarded with no major designation.

Actuarial science-B.S.
American studies-B.A.
Ancient civilization-B.A.
Anthropology-B.A.
Applied physics-B.S.
Art-B.A., B.F.A.
Art history-B.A.
Asian languages and literature-B.A.
Asian studies-B.A.
Astronomy-B.A., B.S.
Biochemistry-B.A., B.S.
Biology-B.A., B.S.
Chemistry-B.A., B.S.
Classics-B.A.
Communication studies-B.A.
Comparative literature-B.A.
Computer science-B.A., B.S.
Dance-B.A., B.F.A.
Economics-B.A., B.S.
Elementary education-B.A., B.S.
English-B.A.
Environmental science-B.S.
Exercise science-B.S.
French-B.A.
Geography-B.A., B.S.
Geoscience-B.A., B.S.
German-B.A.
Global studies-B.A.
Greek-B.A.
Health, leisure, and sport studies-B.S.
Health occupations education-B.A., B.S.
History-B.A.
Interdepartmental studies-B.A.
Italian-B.A.
Journalism and mass communication-B.A., B.S.
Latin-B.A.
Linguistics-B.A.
Literature, science, and the arts-B.A.
Mathematics-B.A., B.S.
microbiology-B.S., B.M.
Music-B.A., B.M.
Philosophy-B.A.
Physics-B.A., B.S.
Political science-B.A., B.S.
Portuguese-B.A.
Psychology-B.A., B.S.
Religion-B.A.
Russian-B.A.
Russian, East European, and Eurasian studies-B.A.
Science education-B.S.
Social studies-B.A.
Social work-B.A.
Sociology-B.A., B.S.
Spanish-B.A.
Speech and hearing science-B.A.
Statistics-B.S.
Theatre arts-B.A.

Two Baccalaureate Degrees

Students may be awarded two different baccalaureate degrees from the College of Liberal Arts, either simultaneously or successively, if they meet the requirements described below. For example, a student may earn a B.S. in biology and a B.A. in English, or a B.A. in mathematics and a B.M. (Bachelor of Music). Students may not earn two different baccalaureate degrees with the same major (for example, a B.A. and a B.S. in psychology).

Simultaneous Degrees

Students who wish to earn two different baccalaureate degrees at the same time in the College of Liberal Arts must complete 30 semester hours beyond the 124 required for a single degree, for a total of 154 semester hours, besides satisfying the requirements for both degrees. The B.L.S. may not be awarded simultaneously with another degree.

Returning for an Additional Degree

Students who already have been awarded a baccalaureate degree from the College of Liberal Arts and are not enrolled in a graduate or professional program may apply for admission to earn an additional baccalaureate degree. Students with a baccalaureate degree from another college or university also may apply for admission to The University of Iowa to earn an additional degree. The department in which the student wishes to study reviews the student’s application and supporting documents and recommends an admission decision. Admitted students must complete at least 30 consecutive semester hours of study in residence at the college beyond their first degree (students who wish to earn two additional degrees must earn 60 additional semester hours).

Holders of B.A. or B.S. degrees are considered to have completed the General Education Program except the foreign language component if the degree was awarded in a liberal arts discipline. Holders of other degrees must complete the General Education Program.

(Students with a degree from The University of Iowa may return and complete a second major, rather than an additional degree, if the program offers the same degree as that which the student previously earned. See “Returning for a Second Major” under “Requirements for the Major” in this section of the Catalog.)

Combined Degree Programs

Business Administration and liberal Arts

Students may earn two University of Iowa baccalaureate degrees in a combined program in the College of Liberal Arts and the Henry B. Tippie College of Business. Successful candidates are awarded a B.B.A. (Bachelor of Business Administration) by the business college and a B.A. (Bachelor of Arts), B.S. (Bachelor of Science), B.F.A. (Bachelor of Fine Arts), or B.M. (Bachelor of Music) by the liberal arts college.

To enter the combined degree program, students must be eligible for admission to the Tippie College of Business and to the College of Liberal Arts. Interested students should contact an advisor in the business college’s Undergraduate Program Office. Students must be approved for candidacy in the combined degree program by the business college and must be admitted to both the Tippie College of Business and to the College of Liberal Arts.

Students who enter the program are required to complete the general education requirements and the requirements for a major in each college. To qualify for both degrees in the combined degree program, candidates must complete an overall total of 150 semester hours of credit, including at least 30 semester hours of courses offered by the Tippie College of Business and at least 30 semester hours of courses offered by the College of Liberal Arts.

Accelerated Professional Track

This program is for superior students in the College of Liberal Arts who plan to continue for a Master of Business Administration [M.B.A.] at The University of Iowa. Students pursue an undergraduate degree in a field other than business while taking M.B.A. foundation courses. Upon receiving the baccalaureate degree, students enter the Graduate College to complete the M.B.A. More information is available from the Academic Program Office of the Tippie College of Business.

Engineering and liberal Arts

Students may earn two University of Iowa baccalaureate degrees in a combined program in the Colleges of Engineering and Liberal Arts. 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.B.S. (Bachelor of Science), B.F.A. (Bachelor of Fine Arts), or B.M. (Bachelor of Music) by the College of Liberal Arts.

Students in this combined program usually are able to meet the baccalaureate degree requirements of both colleges in about five academic years. The exact length of time necessary to complete the program is determined by the major areas of study selected in each college. Students who enter the combined degree program are assigned two faculty advisers, one in their major department in the College of Engineering and the other in their major department in the College of Liberal Arts.

To enter the combined degree program, students must be eligible for admission to the College of Engineering and the College of Liberal Arts. Interested students should contact the engineering college’s Student Development Center. Students must be approved for candidacy in the combined degree program by the College of Engineering and must be admitted to both the College of Engineering and the College of Liberal Arts.

Students who enter the program are required to complete the General Education Program and
the requirements for a major in the College of Liberal Arts, and all the requirements for the B.S.E. degree in a major in the College of Engineering.

It is crucial that students enroll in the proper mathematics and engineering courses early in their course of study to expedite completion of their programs. The specific engineering courses taken by students vary according to the engineering major selected. Since courses in natural sciences, mathematics, humanities, and social sciences are accepted regularly for credit by both colleges, students may be able to count one course toward a requirement in each college.

To qualify for both degrees in the combined degree program, candidates must complete an overall total of 158 semester hours of credit, including at least 30 semester hours of courses offered by the College of Engineering and at least 30 semester hours of courses offered by the College of Liberal Arts.

Medicine and Liberal Arts

Students who select this program must meet the baccalaureate degree requirements specified by both colleges and usually do so in about five academic years. The exact length of time necessary to complete the program is determined by the major areas of study selected in each college. Students who enter the combined degree program are assigned two faculty advisers, one in the major department of the College of Medicine and the other in the major department of the College of Liberal Arts.

Candidates must satisfy all requirements for both degrees and complete an overall total of 154 semester hours of credit, including at least 30 semester hours of courses offered by the College of Medicine and at least 30 semester hours of courses offered by the College of Liberal Arts.

Students interested in the combined degree program should see the director of the baccalaureate program of their choice in the College of Medicine.

Nursing and Liberal Arts

Students who are working toward a baccalaureate degree from the College of Liberal Arts may accept early admission to the University of Iowa College of Medicine or College of Dentistry or to any accredited medical or dental school in the United States that offers advanced degrees.

To be eligible for a baccalaureate degree from the College of Liberal Arts after early admission to a college of medicine or dentistry, students must meet certain requirements. Before enrolling in the medical or dental college, students must have:

- completed the General Education Program;
- completed the requirements for a major;
- earned at least 94 semester hours as undergraduates; and
- satisfied the residence requirement of the College of Liberal Arts.

Students who have successfully completed the first year of medical or dental school are permitted up to 30 semester hours of ungraded elective credit toward a baccalaureate degree from the College of Liberal Arts.

Students who plan to accept early admission to a college of medicine or dentistry and who wish to receive a baccalaureate degree from the College of Liberal Arts should request a graduation analysis from the Office of the Registrar before their final semester in the College of Liberal Arts to ensure they will have completed all requirements. Students apply for the baccalaureate degree from the College of Liberal Arts in the semester in which they will earn 30 semester hours from the medical or dental school.

Declaring or Changing Majors

Liberal arts students who are advised at the Academic Advising Center can declare or change majors there. All students in the College of Liberal Arts can declare or change majors in the Office of Academic Programs.

Admission to the following programs is based on grades in specified prerequisite courses, cumulative grade-point average, preparation of a plan of study, or other criteria: actuarial science, the B.F.A. in art, communication studies, dance, elementary education, exercise science, interdepartmental studies, journalism and mass communication, music, social work, the B.S. degree in computer science, the B.S. degree in psychology, and the health promotion and therapeutic recreation tracks in health, leisure, and sport studies. Students may declare a pre-major in actuarial science, elementary education, journalism and mass communication, and social work. Students should check with these departments and programs for admission information or consult a staff member in the Office of Academic Programs.

Liberal arts students wishing to declare a major in another college of the University first must be admitted to that college.

Students seeking the Bachelor of Liberal Studies degree (B.L.S.) must formally apply for admission at the Center for Credit Programs.

Teaching Licensure

Students may indicate a major in one of the fields of education or an interest in secondary education at the time of admission, or they may change their majors to one of these fields at any time after enrolling. In order to be allowed to enroll in the courses for an education major or licensure, a student must be admitted to the teacher education program (TEP).

To be admitted to the TEP, students must have attained sophomore standing (30 semester hours) and must have earned a total cumulative grade-point average of at least 2.70. Transfer students who meet these standards may apply to the TEP upon admission to the University. In order to remain in the TEP, students must maintain an overall cumulative grade-point average of at least 2.70 and a University of Iowa grade-point average of at least 2.70.

Application forms for admission to the TEP are available from the Office of Student Services and Field Experiences in the College of Education. For more information, see the College of Education section of the Catalog.

Double Majors

A student may meet the requirements of more than one major, and if the majors award the same degree, the student may earn a single baccalaureate degree with two or more majors (e.g., a B.A. in history and English or a B.S. in psychology and sociology).
 Returning for a Second Major

Students who have already earned a B.A. or B.S. degree from the College of Liberal Arts and who are not enrolled in a graduate or professional program may complete the requirements for another major. These students must apply for readmission to the College of Liberal Arts and declare the appropriate major on the application.

Students may return to the college to complete the requirements for a second major developed from their liberal arts minor.

Students who return to the University to complete another major must meet only the requirements for that major; they need not meet the residence requirement. It is the student’s responsibility to apply to graduation analysis in the Office of the Registrar upon completion of the requirements for the second major so that a notation can be placed on the student’s permanent record. Students who hold a baccalaureate degree from another college or university may not complete a second major at The University of Iowa. They may apply for admission to complete an additional degree (see “Returning for an Additional Degree”).

General Requirements for the Major

Specific requirements for majors offered in the College of Liberal Arts are listed in the departmental sections of the Catalog. Students should confer with their advisers in outlining plans for a major.

Ordinarily, students may apply a maximum of 50 semester hours of credit from one academic department toward a B.A. or B.S. degree; 62 toward a B.F.A.; and 40 toward the B.A. in interdepartmental studies. B.A. or B.S. students who earn more than 50 semester hours from one department cannot apply the extra credit toward the 124 semester hours needed for graduation. However, grades awarded for the extra semester hours are used in computing grade-point averages, and the semester hours count toward semester loads for all official purposes (e.g., full-time and half-time status, maximum schedule, minimum semester-hour requirement, reasonable academic progress, dean’s list eligibility, and so forth).

A student earning two majors or a major and a minor from a department that offers degrees in more than one subject area may earn more than 50 semester hours from that department, but he or she must earn a minimum of 56 semester hours from course work taken outside of that department.

A student seeking two majors or a major and a minor in the programs within the Division of Mathematical Sciences (actuarial science, computer science, mathematics, and statistics) must earn a minimum of 56 semester hours in courses taken outside the division. A student seeking two majors in the teacher education programs must earn a minimum of 56 semester hours in courses taken outside the College of Education.

The rules on maximum and minimum semester hours apply to both University of Iowa and transfer course work.

Departments have different policies on the acceptance of transfer credit and correspondence credit toward the requirements for a major.

Courses in the major department may not be taken P/N (pass/nonpass), except by departmental action for courses that are not to be applied toward the major. This restriction applies to both University of Iowa and transfer course work. Courses required for the major in cognate or related areas may be taken P/N, if available, at the discretion of the major department.

S (satisfactory) grades may be earned in the major.

A maximum of 16 semester hours of credit by examination may be awarded in the major. See “Credit by Examination in the Major or Minor” in this section of the Catalog.

Specialization within Degree Programs

There are many ways for students to specialize within degree programs. Some departments offer options within degree programs. For example, athletic training is a specialization within the B.S. in exercise science; specializations in Chinese, Hindi, Japanese, or Sanskrit are available to students seeking a B.A. in Asian languages and literature; and the School of Music has many emphases in the B.A. and B.M. degrees: performance, composition, jazz studies, music history, music education, and music therapy.

Students can add individual specializations to their majors with combinations of courses taken from several areas—for example, a specialization in public relations and advertising, with courses taken in the Department of Communication Studies and the School of Journalism and Mass Communication; a specialization in public service, with courses taken from the Departments of Political Science and History, and the School of Social Work; or a specialization in management, with courses taken in various social sciences departments, including psychology and sociology.

Some student-designed specializations may be appropriate for the interdepartmental studies B.A.

For more information on specializations within and between programs, see the program descriptions in the Catalog and consult with advisers in the appropriate departments.

Certificates

The College of Liberal Arts offers undergraduate certificates in nine interdisciplinary programs: African studies; aging studies; American Indian and native studies; global health studies; global studies; Latin American studies; philosophies and ethics of politics, law, and economics (PEOPLE); medieval studies, and sexuality studies. A tenth certificate program, international business, is administered jointly by the Tippie College of Business and the College of Liberal Arts.

Students in the College of Liberal Arts also may earn a certificate in entrepreneurship through the John Pappajohn Entrepreneurial Center and the Tippie College of Business.

Each certificate program in the College of Liberal Arts draws on courses from at least three departments, and most draw on courses offered by other colleges. Certificates require from 18 to 36 semester hours of prescribed course work. Specific requirements are listed in the departmental sections of the Catalog.

Guidelines

Students may indicate their intention to complete a certificate at the Liberal Arts Office of Academic Programs. Students should contact and work with an adviser from the certificate program(s) in which they are interested.

A grade-point average of at least 2.00 is required in all course work applied toward a certificate.

Each certificate program sets its own policy on the acceptance of transfer course work; students are advised to check with the program director.

Courses applied toward a certificate also may be used to complete the General Education Program or the requirements for a major or a minor. A student may not be awarded both a minor and a certificate in the same area.

Certificates are awarded upon completion of a baccalaureate degree. Holders of Iowa baccalaureate degrees may return to the University to complete the requirements for a certificate. Holders of other baccalaureate degrees may enroll as nondegree students (A9) to complete a certificate program.

Minors

Students graduating from the College of Liberal Arts may earn a minor or minors in any minor-granting program in the college outside of their major field or in another college of the University. The minor may relate directly to the major or may allow a student to follow an interest entirely different and separate from the major.

The college offers minors in the following fields: African American studies; aging studies; American studies; American Indian and native studies; ancient civilization; anthropology; art; art history; Asian languages (Chinese, Hindi, Japanese, and Sanskrit); Asian studies; astronomy; biology; chemistry; cinema; classics; communication studies; comparative literature; computer science; dance; economics; English; French; geography; geoscience; German; global studies; Greek; health, leisure, and sport studies; history; Italian; journalism and mass communication; Latin; Latin American studies; linguistics; mathematics; microbiology; music; philosophy; physics; political science; Portuguese; psychology; religion; Russian; social work; sociology; Spanish; statistics; theatre arts; and women’s studies.

The following degree-granting programs do not offer minors: actuarial science; applied physics; biochemistry; elementary education;
Environmental science, exercise science, health occupations education; interdepartmental studies; liberal studies; literature, science, and the arts; Russian, East European, and Eurasian studies; science education; social studies; and speech and hearing science.

Students in the College of Liberal Arts also may earn minors offered by the College of Education and by the Tippie College of Business.

Requirements

The requirements outlined below are the general requirements for a minor in the College of Liberal Arts. Requirements for specific minors are described in the departmental sections of the Catalog.

A minimum of 15 semester hours must be taken in the minor department or program.

At least 12 of the 15 semester hours must be earned in University of Iowa advanced courses acceptable to the academic unit granting the minor. Neither transfer credit nor credit by examination is accepted toward the 12 semester hours of advanced work. Guided Correspondence Study courses may be acceptable. Students should check with the department or program to identify acceptable courses.

Students must have a grade-point average of at least 2.00 in all work attempted in the minor department or program.

No course taken pass/nonpass will be accepted toward the minor.

Guidelines and Restrictions

Each academic unit determines which of its advanced courses it considers acceptable for a minor. Students seeking information about acceptable courses should contact the department or program office.

Students do not declare minors. At the time of application for a degree, students indicate their desire to have a minor listed on their record. If the requirements for a minor have been completed, a notation is placed on the permanent record.

Students who already have earned a baccalaureate degree from The University of Iowa and are not enrolled in a graduate or professional program may complete the requirements for a minor and apply to the Office of the Registrar to have a notation regarding the minor placed on the permanent record.

Course work applied toward the minor also may be used to complete the General Education Program.

Course work applied toward a minor may not be used to satisfy the requirements for a major.

(Exceptions: Students earning minors in American Indian and native studies or in Latin American studies may count up to 6 semester hours from their major department toward the minor.) Course work applied toward the minor may be used to satisfy major requirements in cognate or related areas. Cognate requirements are those courses outside of the major department that are required as part of the major.

Course work applied toward a minor may be used to satisfy the requirements of a certificate, but students may not earn a certificate and a minor in the same area.

Course work applied toward a minor may not be used to satisfy the requirements for another minor.

Candidates for the B.L.S. degree are not eligible to earn minors.

Minor in Business Administration

Students in the College of Liberal Arts may elect a minor in business administration. The courses listed below satisfy all requirements for the minor. At least 15 semester hours of courses taken for a minor must be completed at The University of Iowa. A grade-point average of at least 2.00 is required in all courses taken for the minor and in all of these courses taken at Iowa.

Calculus (22M:016, 22M:017, 22M:025, or 22M:035) 3-4 s.h.
Statistics (22S:008, 22S:039, 22S:102, 22S:120, or 07P:143) 3-4 s.h.
06E:001 Principles of Microeconomics 3-4 s.h.
06E:002 Principles of Macroeconomics 3-4 s.h.
06A:001 Introduction to Financial Accounting 3 s.h.
06A:002 Introduction to Managerial Accounting 3 s.h.
06K:070 Computer Analysis 3 s.h.
06J:047 Introduction to Law 3 s.h.
06J:048 Introduction to Management 3 s.h.
*06M: 100 Introduction to Marketing 3 s.h.
*06F: 100 Introductory Financial Management (or 057:014) 3 s.h.

*Must be taken in junior or senior year

Minors in Education

Liberal arts students may earn minors in the College of Education. The three minors offered by the College of Education are educational psychology, general education, and human relations. Contact the Office of student Services and Field Experiences in the College of Education for specific requirements.

Liberal Arts Minors for Students in Business, Engineering, Medicine, and Nursing

Undergraduate students in the Tippie College of Business and in the Colleges of Engineering, Medicine, and Nursing may earn liberal arts minors by satisfying College of Liberal Arts requirements for minors. (For restrictions, see appropriate collegiate sections of the Catalog.)

Residence

To earn a degree from the College of Liberal Arts, students must satisfy the College of Liberal Arts residence requirement. This may be met by earning the final 30 consecutive semester hours in residence, or 45 of the final 60 semester hours in residence, or an overall total of 90 semester hours in residence.

Resident instruction includes course work in the College of Liberal Arts and in other University of Iowa colleges (e.g., the Tippie College of Business and the Colleges of Engineering and Nursing), with the 30-semester-hour limitation noted below under “Restrictions and Limits on Semester Hours Applied Toward a Degree.”

Nonresident instruction includes course work at colleges and universities other than The University of Iowa and all work by correspondence, including University of Iowa Guided Correspondence Study courses.

B.L.S. students are not subject to the residence requirement but must earn at least 30 semester hours of credit at The University of Iowa after they are admitted to the program.

Total Hours Earned

All degree candidates in the College of Liberal Arts must earn a minimum of 124 semester hours of credit. The degree evaluation records the number of hours earned.

Classification of Students

Rank (Semester hours earned) Code
First-year student (0-29) A1
Sophomore (30-59) A2
Junior (60-89) A3
Senior (90 or more) A4
Nondegree student (any number of hours) A9

Credit by Examination

Students may earn credit toward graduation by examination. A maximum of 32 semester hours of credit by examination from all approved sources is accepted toward graduation. Credit by examination may be used as elective credit or it may be applied to the General Education Program or requirements in the major or minor. Credit awarded through the Foreign Language Incentive Program and the Mathematics Incentive Program is considered credit by examination.

Credit by Examination in the Major or Minor

Departments may administer examinations covering required courses or areas of instruction in the major field and may grant credit with a grade of P for the successful completion of such examinations. The maximum amount of credit by examination that may be applied toward the requirements of a major is 16 semester hours.

Credit by examination may not be applied to the 12 semester hours of advanced courses required for the minor.

Advanced Placement Program (APP)

Students who pursue college-level learning while still in high school may use the APP testing program to demonstrate their level of achievement. This program was designed by the College Board to provide a means for colleges and universities to evaluate the college-level preparation of participating students and to provide opportunities for high school students to
begin college-level study while still in high school.

Scores earned by students on APP tests are evaluated to determine whether course credit or advanced placement is warranted. Credit awarded through APP may be applied to the General Education Program, to requirements in the major or minor, or as elective credit.

The “Credit by Examination” table in the Schedule of Courses indicates scores needed, credit awarded, and courses duplicated for all APP tests accepted by the College. Further information is available from the Office of Academic Programs.

College-Level Examination Program (CLEP)

CLEP is an achievement testing program offered by the College Board that allows students to demonstrate college-level competence they may have achieved outside of formal college instructional programs. General examinations cover broad content areas such as natural sciences and social sciences/history; subject examinations cover more narrow ranges of content, as typically dealt with in a single college course. Credit earned for achievement on a general examination may be applied to the General Education Program or as elective credit. Those who earn a high enough score on a subject examination are eligible to receive credit for the corresponding University course.

The CLEP program is administered by The University of Iowa Evaluation and Examination Service. Students who wish to participate in CLEP are encouraged to do so before their first enrollment so that test results can be used to plan their first-semester schedules.

The “Credit by Examination” table in the Schedule of Courses indicates scores needed, credit awarded, and courses duplicated for all CLEP tests accepted by the College. For more information, contact the Office of Academic Programs.

Foreign Language Incentive Program

The Foreign Language Incentive Program (FLIP) enables entering Liberal Arts students to earn extra college credit. To be eligible for FLIP credit, students must take the Foreign Language Placement Test in the language or languages in which they wish to earn FLIP credit. Entering students who complete the final course in a General Education-approved sequence with a grade of B- or higher receive 4 semester hours of credit. Those who complete a course beyond the final course in a General Education-approved sequence with a grade of B- or higher receive 8 semester hours of credit. The credit is ungraded but counts toward the hours required for graduation. It is counted as residence credit. Incentive credit is not granted for college or college-level course work for which credit has already been received.

Students with Advanced Placement credit in foreign language must avoid duplication and regression when registering for FLIP-eligible courses. Students should consult with the appropriate language department for help in choosing FLIP courses. Students are eligible for incentive credit only during their first and second registrations at The University of Iowa. For more information consult the Office of Academic Programs.

Mathematics Incentive Program

The Mathematics Incentive Program (MIP) enables entering liberal arts students to earn extra college credit. Entering students who wish to earn MIP credit must take the MPT Level 3 exam (given during orientation and monthly at Evaluation and Examination Service). A score of 6 or higher on the MPT Level 3 exam places a student into MIP-eligible course work. Students who complete a MIP-eligible course with a grade of B or higher earn 4 semester hours of credit for the prerequisite course. The credit is ungraded but counts toward the hours required for graduation. It is counted as residence credit. Incentive credit is not granted for college or college-level course work for which credit has been received.

Students with Advanced Placement or CLEP credit in mathematics must avoid duplication and regression when registering for MIP-eligible courses. Students should consult with their advisers and the Department of Mathematics for help in choosing an appropriate MIP course. Students are eligible for incentive credit only during their first and second registrations at The University of Iowa. For more information consult the Office of Academic Programs.

Transfer Credit by Examination

Results of CLEP and APP tests brought to The University of Iowa on transcripts from other institutions are evaluated by the Office of Admissions under the same rules as other transfer credit.

Credit for Military Service

The admissions officer is authorized to evaluate transcripts from the military services according to recommendations in the American Council on Education’s Guide to the Evaluation of Experiences in the Armed Forces, with the understanding that any inconsistencies between those recommendations and the standards of the College of Liberal Arts will be referred to the Office of Academic Programs. Armed Forces Institute correspondence courses may be accepted for credit under appropriate circumstances.

Validation of Credit

Students with educational experience obtained at a nonaccredited institution or in a formal training program in which there is no standardized procedure for evaluation of credit may request the validation of their credit. Students should consult the Office of Academic Programs and the department concerned for approval to take the appropriate examinations.

Course Without Degree Credit

Courses 010:009, 22M:001, 22M:002, and 22M:003 carry no degree credit, but grades awarded in them are used in computing grade-point averages and may be used to satisfy course requirements.

Restrictions and Limits on Semester Hours Applied toward a Degree

Ordinarily, a maximum of 50 semester hours of credit from one academic department is accepted toward a B.A. or B.S.; 62 toward a B.F.A.; and 40 toward the B.A. in interdepartmental studies. This includes both University of Iowa and transfer course work. Special rules on credit from one department apply when a student completes two programs in a single department (for example, a major in physics and a major in astronomy). See “Requirements for the Major” in this section of the Catalog.

A maximum of 30 semester hours of credit earned in other colleges of the University while the student is enrolled in the College of Liberal Arts may be accepted toward the 124 semester hours required for graduation. Undergraduate courses in the College of Education are exempt from this rule.

A maximum of 62 semester hours of degree credit from two-year colleges is accepted in transfer toward the 124 semester hours required for graduation. A student who has earned more than 62 semester hours of degree credit from two-year colleges cannot count the extra credit toward the total semester hours needed for graduation. However, the extra semester hours and grades are used in computing the grade-point averages and may be used to satisfy course requirements.

Ordinarily, a maximum of 16 semester hours of vocational-technical credit is accepted in transfer toward the 124 semester hours required for graduation. The number of hours transferable by students with A.S. and A.A.S. degrees from institutions that have established special articulation agreements with The University of Iowa may vary.

A maximum of 30 semester hours of credit by correspondence from all approved sources is accepted toward the 124 semester hours required for graduation. B.L.S. students are not subject to this restriction.

A maximum of 20 semester hours of ROTC credit is accepted toward the 124 semester hours required for graduation.

A maximum of 32 semester hours of credit by examination from all approved sources is accepted toward the 124 semester hours required for graduation.

A maximum of 32 semester hours of credit from all sources with a grade of P (pass) or S (satisfactory) is accepted toward the 124 semester hours required for graduation. Only 16 semester hours of P and 16 semester hours of S credit from The University of Iowa is accepted.

The second-grade-only option may be applied to a maximum of three courses.

Courses Without Degree Credit

Courses 010:009, 22M:001, 22M:002, and 22M:003 carry no degree credit, but grades awarded in them are used in computing
grade-point averages, and the semester hours earned in them count toward semester loads for all official purposes (e.g., full-time and half-time status, maximum schedule, minimum semester-hour requirement, reasonable academic progress, dean’s list eligibility, and so forth). Students who take these courses, or equivalent courses at another college or university, must complete additional course work to earn the semester hours needed for graduation.

The degree evaluation gives the correct number of semester hours taken toward the 124 semester hours required for the degree by subtracting semester hours from courses without degree credit. However, the permanent record (official transcript) includes these semester hours in “hours earned” even though they do not count toward the 124 semester hours required for graduation.

Dissertation

Dissertation occurs when a student takes a course more than once. Credit toward graduation is not earned for the repeated course.

GUIDELINES

Although duplicated courses carry no degree credit, grades awarded for a duplicated course are used in computing grade-point averages, and the semester hours count toward semester loads for all official purposes. Grade reports and the permanent record include duplicated semester hours in “hours earned” even though these semester hours do not count toward graduation.

At the time courses are transferred, the Office of Admissions determines whether transfer course work duplicates work already completed. The Office of Admissions also provides information on duplication before a student takes a course. For more information contact the Office of Admissions.

Dissipation of courses taken at The University of Iowa is determined at the time of final graduation analysis, and any hours of duplication are deducted from the total semester hours earned toward graduation.

Ordinarily, the course number—not the title—determines duplication. A department may change a course title but still consider the course as duplicating earlier versions. When a department drops a course and adds a new course that uses the same number, duplication is not charged. Questions about the status of a course should be directed to the department or to graduation analysis. When courses are cross-listed by two or more departments, the course numbers are different, but duplication is charged if the course is taken more than once, regardless of the number under which the student enrolls.

Departments sometimes identify a course as repeatable—that is, the course may be taken more than once with credit toward graduation awarded each time. If a course has not been marked as repeatable by the department offering the course, duplication is charged.

Duplication is charged when a student takes a course that has been identified as equivalent to a course for which the student has transfer, APP, or CLEP subject exam credit. For transfer course equivalencies, consult the Office of Admissions. For APP and CLEP subject exam equivalencies, see the “Credit by Examination” table in the Schedule of Courses.

Duplication is not charged when a student chooses to exercise the second-grade-only option (see below).

Regression

Departments and programs sometimes identify courses as part of particular learning sequences that require a progression from one course to the next. Regression occurs when a student takes a course that is earlier in the sequence than a course he or she has already taken and passed.

Regression is identified only at the time of final graduation analysis, and hours of regression do not count toward graduation.

Current regression sequences are listed in the Schedule of Courses.

Satisfactory Grade-Point Average

In order to be granted a degree, students must earn satisfactory grade-point averages.

Candidates for B.A., B.S., B.F.A., and B.M. degrees must earn a grade-point average of at least 2.00 (C) in all four of these grade-point average calculations:

- all college work attempted;
- all work undertaken at The University of Iowa;
- all work attempted in the major field; and
- all University of Iowa work in the major.

Candidates for the B.L.S. degree satisfy the qualitative requirements for graduation by earning a grade-point average of at least 2.00 (C) in these three grade-point average calculations:

- all course work completed;
- all course work completed after admission to the program; and
- all advanced course work.

General Education Program

All students earning B.A., B.S., B.F.A., B.L.S., or B.M. degrees must complete the College of Liberal Arts General Education Program. The General Education Program is designed to ensure that liberal arts graduates develop a breadth of knowledge. The program offers students considerable flexibility in selecting courses. In completing the program, students acquire important proficiencies and skills in the use of language (both English and a second language), in the manipulation and analysis of symbols (both mathematical and verbal), and in critical reasoning. Students gain familiarity with the modes of thinking and basic information across the liberal arts disciplines. The General Education Program aims to develop in every student these enduring qualities that mark a liberally educated person:

- a lifetime pursuit of personal intellectual growth and practice of social responsibility;
- open-mindedness, tolerance, and the ability to question and evaluate one’s own attitudes and beliefs;
- sufficient general knowledge and proficiencies to adapt to new vocations and new opportunities;
- the ability to understand and to cope with the complexity and diversity of contemporary life.

The program requires courses in rhetoric, foreign language, interpretation of literature, historical perspectives, humanities, natural sciences, quantitative or formal reasoning, and social sciences as well as distributed general education hours, as follows.

Rhetoric: one or two courses, 4-8 semester hours

Foreign language: fourth-semester competency (or the last course in an approved sequence)

Interpretation of literature (08G:001): one course, 3 semester hours

Historical perspectives: one course, 3 semester hours

Humanities: one course, 3 semester hours minimum

Natural sciences: two courses, one with lab, 7 semester hours minimum

Quantitative or formal reasoning: one course, 3 semester hours minimum

Social sciences: one course, 3 semester hours minimum

Distributed general education: 6 semester hours, with a minimum of 3 semester hours chosen from each of two of these areas: cultural diversity, fine arts, foreign civilization and culture, historical perspectives, humanities, physical education, social sciences.

General Education Program Areas

Rhetoric

The College of Liberal Arts considers the rhetoric component basic to all General Education course work. Rhetoric courses are introductory courses in college-level reading, writing, and speaking. Rhetoric challenges students to consider what it means to speak and write as a member of a community, or of many communities.

All students must register for their assigned rhetoric course at either their first or second registration and continue to enroll in rhetoric until the required courses are completed. All transfer students, regardless of the number of hours transferred, must satisfy the rhetoric requirement. Some students receive credit for rhetoric through an APP test or by taking college course work while still in high school.
Students required to enroll in English as a Second Language (ESL) classes as a result of their English proficiency evaluation must complete all ESL classes before registration in any rhetoric class. Required ESL courses are prerequisites to rhetoric courses.

Cultural Diversity

Courses in this area foster greater understanding of the diversity of cultures in the United States and provide knowledge and critical understanding of these cultures. Courses in this area focus on one or more nondominant cultures or peoples of the United States. Some courses include comparative study with cultures outside the United States, but the primary focus is on United States experience.

In completing the General Education Program, students are not required to take a course approved in the area of cultural diversity; however, they may use 3 semester hours of course work approved in this area in the Distributed General Education portion of the General Education Program.

Fine Arts

Courses in this area provide students with knowledge of the history, theory, and appreciation of various disciplines in the creative arts. Courses in this area may also provide students with studio, performance, and production experiences.

In completing the General Education Program, students are not required to take a course approved in the area of fine arts; however, they may use 3 semester hours of course work approved in this area in the distributed general education portion of the General Education Program.

Foreign Civilization and Culture

Courses in this area promote better understanding among students of their own culture through comparative analysis with others; provide students with some knowledge about one or more foreign civilizations, cultures, or societies; stimulate students’ desire for further study of foreign civilizations, cultures, and societies; and foster international and intercultural understanding.

In completing the General Education Program, students are not required to take a course approved in the area of foreign civilization and culture; however, they may use 3 semester hours of course work approved in this area in the distributed general education portion of the General Education Program.

Foreign language

Courses in this area provide students with speaking, listening, reading, and writing skills in a second language. These courses also provide some knowledge of the culture(s) in which the language is spoken.

As part of their General Education Program, all students in the College of Liberal Arts must demonstrate the study of and competence in a language other than their own first language. For most students, that means a language other than English. Students who graduated from a high school (grades 9-12 or 10-12) in which English was the language of instruction may complete this part of the General Education Program in one of the following ways:

- by successfully completing the fourth-year level of a foreign language in high school;
- by successfully completing the fourth-semester course, or the last course in a designated sequence of courses, in a language other than English at The University of Iowa, or the equivalent course at another college or university, or the equivalent course during study abroad;
- by passing a test measuring proficiency in a foreign language equivalent to that usually attained after four semesters of college study, for example, through the Advanced Placement Program and testing or through a University of Iowa proficiency test (see “Foreign Language Proficiency Examinations”).

Students may use English to complete this part of the General Education Program only if:

- they graduated from a high school (grades 9-12 or 10-12) in which the language of instruction was not English; and
- they hold a nonimmigrant visa; and
- they meet the college’s English proficiency requirement.

Students who have undergone formal assessment by the Office of Student Disability Services and are found to have a language learning disability may substitute other approved courses to satisfy the requirement. Such substitutions must be approved in the Academic Programs Office.

FOREIGN LANGUAGE PROFICIENCY EXAMINATIONS

Students proficient in a language for which they have received no formal instruction (or formal instruction below the fourth-semester level) may validate their proficiency with an examination. Students who earn satisfactory scores on Advanced Placement Program examinations in French, German, Latin, or Spanish are awarded semester hours of credit toward graduation. They also may earn exemption from the foreign language component of the General Education Program. For more information, see the “Credit by Examination” table in the Schedule of Courses.

Students proficient in French, Japanese, Latin, or Spanish should may take one of the University of Iowa foreign language placement tests regularly administered to entering students during orientation programs and at the Evaluation and Examination Service on a monthly basis. Examinations in American Sign Language, Chinese, ancient Greek, Hindi, Italian, Portuguese, Russian, Sanskrit, Swahili, and Zulu are arranged by contacting the appropriate department.

Students proficient in more than one language may take a test in each language. Semester hours toward graduation are not awarded for successful completion of these evaluations; exemption from the foreign language component of the General Education Program may be granted. Students who have been enrolled in a University of Iowa course in a particular language past the deadline for adding courses may not take the placement exam in that language. Ordinarily, students may take a placement exam in a particular language only once. Students may repeat an exam only if they have had a significant language learning experience outside the classroom since they first took the exam. Students seeking exceptions to these rules should consult with the specific language department.

Students proficient in a foreign language not regularly offered at The University of Iowa may apply to the Academic Programs Office for assessment. In some cases, arrangements can be made for an on-campus proficiency evaluation. Evaluations are available for only a limited number of languages. Semester hours toward graduation are not awarded for these evaluations; exemption from the foreign language component of the General Education Program may be granted.

Students proficient in a language for which testing is not available must complete the foreign language component of the General Education Program by another approved method.

Historical Perspectives

Courses in this area help students understand a period of the past in its own terms, comprehend the historical processes of change and continuity, sharpen their analytical skills in the evaluation of evidence, and develop their ability to generalize, explain, and interpret historical change.

In completing the General Education Program, all students must include 3 semester hours of course work approved in this area of historical perspectives; they may use 3 semester hours of course work approved in this area in the distributed general education portion of the General Education Program.

Humanities

Courses in this area focus on the ways in which cultures have interpreted and understood themselves, others, and the world. Courses exploring the nature of artistic forms and of human values and value systems in the arts, literature, philosophy, and religion are approved in this area, as are many interdisciplinary courses. Courses approved in this area teach verbal, analytic, perceptual, and imaginative skills needed for interpreting and examining culture, community, identity formation, and the human experience.

In completing the General Education Program, all students must include 3 semester hours of course work approved in the area of humanities; they may use 3 semester hours of course work approved in this area in the distributed general education portion of the General Education Program.

Interpretation of literature

Building on previously acquired skills of reading and writing, students in 08G:001 become conscious of and adept at the processes of
interpreting texts. They also reflect on the aesthetic and intellectual pleasures of reading. Students explore a variety of literary forms, concentrating on poetry, drama, and prose, and sometimes other forms such as film, autobiography, and the essay. Students must complete all required rhetoric courses before taking 08G:001.

In completing the General Education Program, all students except English majors must include 08G:001. Students who major in English may include in their General Education Program a course approved in the humanities area to take the place of Interpretation of Literature.

**Natural Sciences**

Courses in this 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 methods of scientific inquiry.

In completing the General Education Program, all students must include a minimum of 7 semester hours of course work in the natural sciences. At least one course must include a laboratory component.

**Physical Education**

Courses in this area help students acquire knowledge and skills that will promote good health and lifelong pleasure from physical activities.

In completing the General Education Program, students are not required to take a course approved in the area of physical education; however, they may use 3 semester hours of course work approved in this area in the distributed general education portion of the General Education Program.

**Quantitative or Formal Reasoning**

Courses in this area help develop analytical skills. They focus on the presentation and evaluation of evidence and argument, the appreciation of use and misuse of data, and the organization of information in quantitative or other formal systems.

In completing the General Education Program, all students must complete an approved course in quantitative or formal reasoning or a course for which one of the approved courses is a prerequisite.

**Social Sciences**

Courses in this area focus on human behavior and the institutions and social systems that shape and are shaped by that behavior. They provide an overview of one or more social science disciplines, their theories, and methods.

In completing the General Education Program, all students must include 3 semester hours of course work approved in the area of social science; they may use 3 semester hours of course work approved in this area in the distributed general education portion of the General Education Program.

**Policies and Additional Information**

**P/N and S/F Graded Course Work**

Courses taken pass/nonpass (P/N) may not be used to complete the General Education Program. Courses approved for General Education and taken P/N may be used only as electives.

Courses approved for satisfactory/fail (S/F) grading may be approved for General Education; however, only under special circumstances will such courses be approved for General Education.

**Courses from the Major or Minor Department**

Students may use General Education-approved courses offered by their major departments to complete the General Education Program. Course work applied toward the minor also may be used to complete the General Education Program. However, the restriction on courses from one department applies, as follows.

**No More Than Three Courses from One Department**

Students may use no more than three courses from any one department in completing the General Education Program. Courses taken to satisfy the foreign language requirement are excluded from this rule.

**Repeatable Courses**

Courses that may be repeated for credit may be approved in any General Education area. Students may use more than one repeatable course in completing the General Education Program; however, only 3 semester hours of credit from any one repeatable course may be used in completing the General Education Program.

**Courses Approved in More Than One Area**

Courses may be approved in more than one area of General Education. Students may use a course to satisfy a General Education requirement in any area for which it is approved, but they may not use a single course in more than one area in completing the General Education Program requirements.

**Courses Approved for Honors Credit**

Students who are admitted as honors students or who join the University Honors Program are eligible to satisfy some General Education Program requirements in special honors sections or in honors seminars approved for general education.

**Students with Disabilities**

Students with documented learning disabilities or physical disabilities may need accommodation in order to complete the General Education Program. Accommodations are arranged by the Office of Student Disability Services in consultation with instructors, departments, and the Office of Academic Programs.

**Satisfaction of Requirements by Examination**

Satisfactory performance on tests administered at The University of Iowa may lead to full or partial exemption from the foreign language requirements of the General Education Program. Semester hours toward graduation are not awarded. Satisfactory scores on examinations administered by the Advanced Placement Program (AP) and the College Level Examination Program (CLEP) may lead to semester hours of credit and exemption that can be applied to the General Education Program.

**Transfer Courses**

General Education Program requirements can be satisfied with course work completed at other institutions. Transfer course work is evaluated by the Office of Admissions, and satisfaction of General Education Program requirements with transfer credit is shown on the degree evaluation.

**Students with Degrees from Two-Year Institutions**

Students who receive degrees from two-year institutions participating in articulation agreements with The University of Iowa are considered to have satisfied all requirements of the General Education Program, except foreign language, if the program of study for which the degree was awarded includes the following:

- a minimum of 60 semester hours (90 quarter hours) of credit acceptable toward graduation;
- completion of an agreed-upon group of courses; and
- a grade-point average of at least 2.00.

Representatives from the cooperating institutions and the Regents universities meet periodically to review the provisions of the articulation agreements.

**Course Lists**

**Cultural Diversity**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>01H:002</td>
<td>Art of Africa, Oceania, and Pre-Columbian America</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>01H:104</td>
<td>American Indian Art</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>01H:109</td>
<td>(129:109) The Arts of the African Diaspora</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>07F:154</td>
<td>Education. Race. and Ethnicity</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>07F:180</td>
<td>Human Relations for the Classroom Teacher</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>07U:133</td>
<td>Culturally Different in Diverse Settings</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>08G:005</td>
<td>(149:005) Literatures of Native American Peoples</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>08G:011</td>
<td>Literature and Sexualities</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>08G:013</td>
<td>Literatures of Latinos/as in the U.S. A.</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>016:040</td>
<td>Perspectives: Diversity in American History</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
019:165 African Americans and Mass Communication 3 s.h.
025:141 History of Jazz 3 s.h.
032:016 Religion and Liberation 3 s.h.
033:030 Cultural Diversity and Identity 3 s.h.
034:166 Social Inequality 3 s.h.
035:143 (048: 196) Cuban American Literature and Culture 3 s.h.
045:030 (129:061) Introduction to African American Culture 3 s.h.
113:119 (149:110) Indians of North America 3 s.h.
129:060 Introduction to African American Society 3 s.h.
149:049 Introduction to American Indian and Native Studies 3 s.h.
154:110 Introduction to Sexuality Studies 3 s.h.

Fine Arts
01B:001 Elements of Art 3 s.h.
01C:006 Ceramics I 3 s.h.
01H:001 Art and Culture Before 1400 3 s.h.
01H:002 Art of Africa, Oceania, and Pre-Columbian America 3 s.h.
01H:004 Masterpieces: Art and Cultural Paradigms 3 s.h.
01H:005 Western Art and Culture Before 1400 3 s.h.
01H:006 Western Art and Culture After 1400 3 s.h.
01H:010 First-Year and Sophomore Tutorial: Introduction to the History of Art 4 s.h.
01H:016 (039:016) Asian Art and Culture 3 s.h.
01H:020 (141:030) Introduction to African Art 3 s.h.
01H:066 Introduction to American Art 3 s.h.
01N:015 Undergraduate Sculpture I 3 s.h.
008:184 (049: 114) Contemporary Theatre and Drama 3 s.h.
08C:001 Creative Writing Studio Workshop 3 s.h.
014:108 (049: 180) Greek Drama in Translation 3 s.h.
025:013 Concepts and Contexts of Western Music 3 s.h.
025:014 Great Musicians 3 s.h.
025:059 Performance Instruction for Non-Majors 1 s.h.
025:082 Group Piano I Non-Music 1 s.h.
025:104 Music of Latin America and the Caribbean 3 s.h.
025:144 History of Music I 3 s.h.
025:146 History of Music II 3 s.h.
033:161 The Arts in Performance 3 s.h.
034:001 Art of the Theatre 3 s.h.
049:002 (049: 112) Theatre and Society: Ancients and Moderns 4 s.h.
049:003 (049: 113) Theatre and Society: Romantics and Rebels 4 s.h.
049:020 Basic Acting 3 s.h.
049:021 Basic Acting II 3 s.h.
049:062 Basic Playwriting 3 s.h.
049:118 American Women Playwrights: 19th and 20th Century 3 s.h.
137:001 Beginning Tap 2 s.h.
137:002 Beginning Jazz 2 s.h.
137:003 Beginning Ballet 2 s.h.
137:004 Beginning Modern Dance 2 s.h.
137:011 Continuing Tap 2 s.h.
137:012 Continuing Jazz 2 s.h.
137:013 Continuing Ballet 2 s.h.
137:014 Continuing Modern Dance 2 s.h.
137:022 Low Intermediate Jazz 2 s.h.
137:023 Low Intermediate Ballet 2 s.h.
137:024 Low Intermediate Modern 2 s.h.
137:033 Intensive Training for the Male Dancer 2 s.h.
137:080 Dance and Society 3 s.h.
137:103 Major Ballet I 1-2 s.h.
137:104 Major Modern Dance I 1-2 s.h.
137:106 Dance Performance 0-1 s.h.
137:113 Major Ballet II 1-2 s.h.
137:114 Major Modern Dance II 1-3 s.h.
137:123 Major BalletIII 1-3 s.h.
137:124 Major Modern Dance III 1-3 s.h.

Foreign Civilization and Culture
01H:005 Western Art and Culture Before 1400 3 s.h.
01H:006 Western Art and Culture After 1400 3 s.h.
01H:016 (039:016) Asian Art and Culture 3 s.h.
01H:020 (141:030) Introduction to African Art 3 s.h.
008:013 (014:013) The Classical Views 3 s.h.
08G:014 (129:008, 141:014) Perspectives on the Modern World 3 s.h.
009:113 French Civilization 3 s.h.
009:147 (36F:105, 048:105) French Cinema 3 s.h.
013:017 German Heroic and Erotic Literature: Middle Ages 3 s.h.
013:105 German Cultural History 3 s.h.
013:115 Contemporary German Civilization 3 s.h.
013:118 The Third Reich and Literature 3 s.h.
016:001 Western Civilization I 3-4 s.h.
016:002 Western Civilization II 3-4 s.h.
016:003 Western Civilization III 3-4 s.h.
016:005 (039:055) Civilizations of Asia: China 3 s.h.
016:006 (039:056) Civilizations of Asia: Japan 3 s.h.
016:007 (039:057) Civilizations of Asia: South Asia 3-4 s.h.
016:030 Science and Medicine in World Perspective 3-4 s.h.
16E:106 Survey of Ancient Near East and Greece 3 s.h.
16E:107 The Hellenistic World and Rome 3 s.h.
16E:110 Medieval Civilization 3 s.h.
16E:113 Economic and Social History of Medieval Europe 3 s.h.
16E:117 History of the Medieval Church 3 s.h.
16E:122 European Religious Reformations, 1250-1750 3 s.h.
16E:125 (131:181) Society and Gender in Europe 1200-1789 3 s.h.
16E:126 The French Revolutions and Human Rights 3 s.h.
16E:127 European History in Text and Film 4 s.h.
16E:146 France from 1815 to the Present 3 s.h.
16E:148 (131:182) Society and Gender in Europe 1750-present 3 s.h.
16E:156 Germany since 1914: Weimar, Hitler, and After 3 s.h.
16E:176 Imperial Russia: 1598-1801 3 s.h.
16E:177 Imperial Russia: 1801-1917 3 s.h.
16E:178 Soviet Union 1917-1945 3 s.h.
16E:179 Soviet Union 1945-1991 3 s.h.
16W:111 Colonial Latin America 3 s.h.
16W:112 Introduction to Modern Latin America 3 s.h.
16W:113 The Mexican Revolution 3 s.h.
16W:194 (039:134) Imperialism and Modern India 3 s.h.
16W:196 (039:154) Modern China: 1800 to Present 3 s.h.
019:157 (044:157) Third World Development Support 3 s.h.
020:014 Love and Glory: The Literature of Rome 3 s.h.
030: 141 Russian/Post-Soviet Politics 3 s.h.
030:143 (039:178) Government and Politics of the Far East 3 s.h.
030:144 Latin American Government 3 s.h.
030:146 (044:161, 141:146) African Development 3 s.h.
032:004 (039:064) Living Religions of the East 3 s.h.
032:007 (039:020) Asian Humanities: Japan 3 s.h.
032:008 (039:018) Asian Humanities: India 3 s.h.
032:009 (039:019) Asian Humanities: China 3 s.h.
032:191 (039:167) Religion in India 3 s.h.
035:020 Contemporary Spanish American Narrative 3 s.h.
038:020 Contemporary Brazilian Narrative 3 s.h.
038:114 Culture and Civilization of the Portuguese-Speaking World 3 s.h.
39J:125 (113:125) Japanese Society and Culture 3 s.h.
041:185 Russian Culture 3 s.h.
041:186 Russia Today 3 s.h.
41S:001 Introduction to Russian, the Soviet Union, and its Successor States 3 s.h.
044:010 (047:010) The Contemporary Global System 4 s.h.
113:118 (129:115) Social Anthropology of the Caribbean 3 s.h.
113:127 Ethnology of Oceania 3 s.h.
113:131 Latin American Economy and Society 3 s.h.

Foreign language
The College of Liberal Arts offers a number of course sequences that can be used to complete the foreign language requirement. For Information on course sequences, see the departmental listings. All of the following languages are offered.
American Sign Language (offered by the American Sign Language program)
Chinese (offered by the Department of Asian Languages and Literature)
French (offered by the Department of French and Italian)
German (offered by the Department of German)
Greek (offered by the Department of Classics)
Hindi (offered by the Department of Asian Languages and Literature)
Italian (offered by the Department of French and Italian)
Japanese (offered by the Department of Asian Languages and Literature)
Latin (offered by the Department of Classics)
Portuguese (offered by the Department of Spanish and Portuguese)
INTERNATIONAL STUDENTS AND THE HISTORICAL PERSPECTIVES REQUIREMENT

In addition to the courses listed above, international students who hold nonimmigrant student visas may use the following courses to satisfy the historical perspectives requirement.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>016A:061</td>
<td>American History 1492-1877</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>016A:062</td>
<td>American History 1877-Present</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>025:014</td>
<td>Great Musicians</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>025:059</td>
<td>Performance Instruction for Non-Majors</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>025:082</td>
<td>Group Piano I Non-Music</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>025:104</td>
<td>Music of Latin America and the Caribbean</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>026:061</td>
<td>Introduction to Philosophy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>026:102</td>
<td>Introduction to Ethics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>026:072</td>
<td>Leisure and the Liberal Arts</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:030</td>
<td>Introduction to Political Thought and Political Action</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:002</td>
<td>Religion and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:003</td>
<td>Quest for Human Destiny</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:007</td>
<td>Asian Humanities: Japan</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:008</td>
<td>Asian Humanities: India</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:009</td>
<td>Asian Humanities: China</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:010</td>
<td>Introduction to Religious Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:015</td>
<td>New Testament Survey</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:016</td>
<td>Religion and Liberation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:051</td>
<td>Religious Thinkers of the West</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:065</td>
<td>Power and Justice in the Good Life</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>032:111</td>
<td>Religion and Women</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>033:050</td>
<td>Making Choices: Interdisciplinary Perspectives</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>033:121</td>
<td>The Good Society</td>
<td>2-4 s.h.</td>
</tr>
<tr>
<td>033:142</td>
<td>Natural Sciences and Human Cultures</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>033:154</td>
<td>Human Nature and the Impact of Science</td>
<td>2-4 s.h.</td>
</tr>
<tr>
<td>033:161</td>
<td>The Arts in Performance</td>
<td>2-4 s.h.</td>
</tr>
<tr>
<td>035:020</td>
<td>Contemporary Spanish American Narrative</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>036F:002</td>
<td>Survey of Film</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>036F:021</td>
<td>European Film</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>038:020</td>
<td>Contemporary Brazilian Narrative</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>039:050</td>
<td>Major Texts in World Literature III</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>041:101</td>
<td>Russian Literature in Translation 1800-1860</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>041:102</td>
<td>Russian Literature in Translation 1860-1917</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>045:001</td>
<td>American Values</td>
<td>3 s.h.</td>
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<tr>
<td>045:030</td>
<td>Introduction to African American Culture</td>
<td>3 s.h.</td>
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<tr>
<td>049:001</td>
<td>Art of the Theatre</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:020</td>
<td>Basic Acting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:021</td>
<td>Basic Acting II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:062</td>
<td>Basic Playwriting</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:108</td>
<td>American Women Playwrights</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:115</td>
<td>American Women Playwrights: 19th and 20th Century</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>137:001</td>
<td>Beginning Tap</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:002</td>
<td>Beginning Jazz</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:003</td>
<td>Beginning Ballet</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:004</td>
<td>Beginning Modern Dance</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:011</td>
<td>Continuing Tap</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:012</td>
<td>Continuing Jazz</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:013</td>
<td>Continuing Ball</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:014</td>
<td>Continuing Modern Dance</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:022</td>
<td>Low Intermediate Jazz</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:023</td>
<td>Low Intermediate Ballet</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:024</td>
<td>Low Intermediate Modern</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:025</td>
<td>Intensive Training for the Male Dancer</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:080</td>
<td>Dance and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>143:050</td>
<td>Honors Seminar in Humanities</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

INTERPRETATION OF LITERATURE

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>008:001</td>
<td>The Interpretation of Literature</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

NATURAL SCIENCES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>002:001</td>
<td>Introduction to Botany (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>002:002</td>
<td>Introductory Animal Biology (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>002:010</td>
<td>Principles of Biology I (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>-------------</td>
<td>--------------</td>
<td>--------------</td>
</tr>
<tr>
<td>02S:006</td>
<td>Principles of Biology II (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>02S:021</td>
<td>Human Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:021</td>
<td>Human Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:022</td>
<td>Ecology and Evolution</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:040</td>
<td>Biology of the Brain</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:083</td>
<td>Human Genetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04S:005</td>
<td>Technology and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04S:006</td>
<td>Technology and Society Laboratory</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>04S:007</td>
<td>General Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04S:008</td>
<td>General Chemistry II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04S:013</td>
<td>Principles of Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04S:014</td>
<td>Principles of Chemistry II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04S:016</td>
<td>Principles of Chemistry Lab (Lab)</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>04S:018</td>
<td>Chemical Science I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04S:019</td>
<td>Chemical Science II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>04S:020</td>
<td>Chemical Science Laboratory (Lab)</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>01S:003</td>
<td>Earth History and Resources (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>01S:004</td>
<td>Evolution and the History of Life (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>01S:005</td>
<td>Introduction to Geology (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>01S:006</td>
<td>Lectures in Evolution &amp; History of Life</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>01S:008</td>
<td>Introduction to Environmental Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>01S:008</td>
<td>Introduction to Environmental Science (lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>07S:055</td>
<td>Human Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>07S:130</td>
<td>Human Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:003</td>
<td>From Quarks to Quasars</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>02S:005</td>
<td>Chemistry and Physics of the Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:006</td>
<td>Basic Physics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:008</td>
<td>Basic Physics (Lab)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:009</td>
<td>Directions in Modern Physics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:009</td>
<td>Directions in Modern Physics (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>02S:011</td>
<td>College Physics (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>02S:012</td>
<td>College Physics (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>02S:017</td>
<td>Introductory Physics I (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>02S:018</td>
<td>Introductory Physics II (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>02S:027</td>
<td>Physics I (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>02S:028</td>
<td>Physics II (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>02S:050</td>
<td>Modern Astronomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:050</td>
<td>Modern Astronomy (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>02S:051</td>
<td>Introductory Astronomy Laboratory (Lab)</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>02S:052</td>
<td>Characteristics and Origins of the Solar System</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>02S:061</td>
<td>General Astronomy (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>02S:062</td>
<td>General Astronomy (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>044:003</td>
<td>Introduction to Earth Systems Science (Lab)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>113:013</td>
<td>Human Origins</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>143:070</td>
<td>Honors Seminar in Natural Sciences</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Physical Education

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>28S:005</td>
<td>Fitness and Wellness for Life</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

All courses numbered 28S:006 through 28S:097 are also approved for General Education. Each course is offered for 1 s.h. of credit.

### Quantitative or Formal Reasoning

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>07S:025</td>
<td>Elementary Statistics and Inference</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>22C:005</td>
<td>Problem Solving and Computing</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Social Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>003:117</td>
<td>Psychology of Language Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>003:118</td>
<td>Language Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>006:001</td>
<td>Principles of Microeconomics</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>006:002</td>
<td>Principles of Macroeconomics</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>006:007</td>
<td>Contemporary Economic Problems and Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>007:009</td>
<td>Politics of Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>019:090</td>
<td>Social Scientific Foundations of Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>028:070</td>
<td>Perspectives on Leisure and Play</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>028:140</td>
<td>Health for Living</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:001</td>
<td>Introduction to American Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:030</td>
<td>Introduction to Political Thought and Political Action</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:040</td>
<td>Introduction to the Politics of the Industrial Democracies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:041</td>
<td>Introduction to the Politics of Russia and Eurasia</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:042</td>
<td>Introduction to the Politics of Developing Areas</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:050</td>
<td>Introduction to Political Behavior</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:060</td>
<td>Introduction to International Relations</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:061</td>
<td>Introduction to American Foreign Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:070</td>
<td>Introduction to Political Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:140</td>
<td>Government and Politics of Europe</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:146</td>
<td>African Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>031:001</td>
<td>Elementary Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>031:013</td>
<td>Introduction to Clinical Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>031:014</td>
<td>Introduction to Child Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>031:016</td>
<td>Introduction to Cognitive Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>034:001</td>
<td>Introduction to Sociology: Principles</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>034:002</td>
<td>Social Problems</td>
<td>3-4 s.h.</td>
</tr>
</tbody>
</table>

### College of Liberal Arts

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### Registration

For general information on registration procedures, see “Registration” in the Schedule of Courses or in the Learning at Iowa section of the Catalog.

### Maximum Schedule

The maximum permitted registration is 18 semester hours during a semester, 12 total semester hours during any year’s summer sessions. Students may register for no more than 3 semester hours during the three-week summer session. Students in good academic standing may request permission to register for more hours than the maximum allowed. Students who do not plan to graduate at the end of the semester in which they wish to take excess hours must wait until the first day of the semester (instead of during early registration) to make their request. Requests are made in the Office of Academic Programs.

For purposes other than financial aid, full-time status is defined as 12 semester hours during a fall or spring semester or 6 semester hours or more during summer session. The recommended schedule for students who wish to complete a degree in eight semesters (four years) is 15-16 semester hours each semester.

### Prerequisites and Registration

Departments and instructors may wish to establish a prerequisite or prerequisites for a particular course. A prerequisite may specify previous background, class standing, course work, a specific grade in a specific previous course, overall grade point, or major status, or some combination of criteria required for the course. Departments are responsible for having all prerequisites accurately printed in the Schedule of Courses, Liberal Arts Guide to Courses, and elsewhere. Departments or instructors may, at their discretion, administratively drop from the course students.
who enroll in a course for which they do not have required prerequisites that were correctly printed in the Schedule of Courses. These drops must take place during the first eight calendar days of the semester, the first two calendar days of the three-week summer session, or the first four days of the six or eight-week summer session. These drop actions are made without the assignment of a W (withdrawn).

**Changes in Registration**

**Student Responsibility for Changes in Registration**

Students must initiate changes in registration, obtain the proper signatures on the proper forms, and deliver the forms to the Registration Center before the deadlines. The revised computer printout generated at the Registration Center is confirmation that changes have been made. Students may not attend classes for which they are not properly registered.

**Adding and Dropping Courses**

Once classes have begun, courses may be added before the add deadline with the signatures of both the adviser and instructor on a Change of Registration form. The form must be processed at the Registration Center. Courses may be dropped at any tie before the drop deadline with the signatures of the adviser and the instructor.

Students who wish to add independent study, directed readings, or honors research may do so during the first eight weeks of the semester (or first four weeks of the summer session); however, a dean’s signature is required after the add deadline. Students may request the dean’s signature in the Office of Academic Programs.

“Off-cycle” courses that start or end at times other than the beginning and end of the semester have add deadlines different from those of semester-long courses. See the “Off Cycle” information on the “Significant Deadline Dates” page of the Schedule of Courses.

Students who fail to attend class are not dropped from a course automatically. A student who wishes to drop a course must obtain the necessary signatures on a Change of Registration form and take it to the Registration Center. Only under special conditions may an instructor drop a student from a course.

**INSTRUCTOR’S OPTION TO DROP FOR NONATTENDANCE**

To provide vacancies in crowded classes, instructors may drop students who have not attended any class session during the first eight calendar days of the semester (or first two or four calendar days of a summer session), unless the students have offered acceptable reasons for beginning the course late. This provision is for the benefit of students who otherwise would be unable to enroll in certain crowded classes; it should not be used when these circumstances do not exist. These drop actions are made without the assignment of a W (withdrawn). The Registration Center notifies each student dropped from a course and the student’s adviser.

Students should not assume that they have been dropped automatically from a course because they have not attended it.

**Changes in Variable and Arranged Credit**

Students who have registered for courses offered for variable or arranged credit may change the number of semester hours according to the rules for adding and dropping courses. Students may increase the number of hours during the period in which adds are allowed, and they may decrease the number during the period in which drops are allowed. To change the number of semester hours, a student drops the course and then adds it for the desired hours.

**Auditing Courses**

Students in the College of Liberal Arts may audit a course (reduce to 0 the number of semester hours) if approval is granted by the instructor of the course and the adviser’s signature is obtained.

Audited courses may not be used to meet college requirements and carry no credit toward graduation.

To register as an auditor during early registration, a student must obtain special permission approval from the instructor. To add a course for audit after the opening of the semester, a student registers for zero credit on a Change of Registration form.

Changes from credit to audit or from audit to credit must be made before the add deadline using a Change of Registration form and obtaining the necessary signatures. No changes are accepted after the deadline.

Students receive the mark of R (registered) if their attendance and performance are satisfactory; they receive a mark of W (withdrawn) if not. Fee assessment for auditing courses is based on the number of hours for which the course is offered, with a minimum of one semester hour.

**Adding and Dropping Courses after Deadlines**

Students who wish to add or drop courses after the deadlines may do so only with the signature of the associate dean for academic programs in addition to the signatures of the adviser and instructor. Students may request the dean’s signature in the Office of Academic Programs. Approval to add or drop courses late is granted only in extraordinary circumstances and only with appropriate documentation.

**Mark of "W"**

Undergraduate students are assigned the mark of W (withdrawn) for any course in any undergraduate college dropped after the add deadline. For courses that start or end at times other than the beginning or end of the semester, students may drop the course any time within the first one-fifth of the course’s duration without being assigned a W.
Grading

Grading System

The following grading system is used in the College of Liberal Arts.

Grade and Grade point for each description semester hour
A+  4.33
A Superior  4.00
A-  3.67
B+  3.33
B Above Average  3.00
B-  2.67
c+  2.33
C Average  2.00
c-  1.67
D+  1.33
D Below Average  1.00
D-  0.67
F Failing 0

Not used in computing grade-point average:
S = Satisfactory
P = Pass
N = Nonpass

Other marks on the permanent record:
I = Incomplete
R = Registered
W = Withdrawn
# = Second-Grade-Only Option

Policies for Plus/Minus Grading

The following policies govern the use of plus/minus grading in the College of Liberal Arts.

The use of plus and minus is optional: departments and individual instructors are free to use the grades of A, B, C, D, and F with or without plus and minus. In either system, instructors may use any or all of the points on the grading scale.

The grading system used by an instructor must be applied to all students in a given class.

The grading system must be the same in all sections of a multisection course.

Instructors should announce at the beginning of the semester or summer session the grading system to be used in the class.

Grade-Point Average

Grade-point average (GPA) is computed by:
- multiplying the number of semester hours in each course by the appropriate grade points;
- totaling the grade points earned to date; and
- dividing the total grade points by the number of hours taken, excluding courses in which grades of S, P, or N or marks of I, O, R, or W have been given.

Hours of F are included in hours attempted and are used in computing the grade-point average.

Students in the College of Liberal Arts may have up to four different grade-point averages. One is based on all courses taken at The University of Iowa. The major GPA is based on all courses in the major (as defined by the department offering the major). Students who transfer work from another college to The University of Iowa have a transfer GPA. The cumulative GPA is based on all courses—both transfer and UI. Although grades of A+ have a value of 4.33 in calculating a grade-point average, the cumulative grade-point averages displayed at the bottom of the permanent record are truncated so as not to exceed 4.00.

Incomplete (I)

Instructors may report a mark of I (incomplete) only if the unfinished part of the student’s work, in a course other than research, thesis, or independent study, is small; the work is unfinished for reasons acceptable to the instructor; and the student’s standing in the course is satisfactory. Courses may not be repeated to remove incompletes. Incompletes must be removed by completing the unfinished part of the work.

The work must be completed and submitted to the course Instructor three-and-a-half weeks before the close of the examination period of the next session for which the student is registered, except that students with incompletes from the spring semester are exempt from the need to complete the work during the succeeding summer session. Failure to remove the I by that date results in an F being assigned for each incomplete.

No Grade Reported (O)

A mark of 0 is assigned by the Office of the Registrar when an instructor fails to report a grade or reports an invalid grade.

The 0 designation on a student’s permanent record is converted automatically in the Office of the Registrar. Grades of A + , A, A-, B + , B, B-, C+ , C, and C- are converted to P; grades of D+, D, D-, and F are converted to N.

The grades of P and N are not used in computing grade-point averages; the grade of N does not count as hours earned for graduation.

Satisfactory/Fail Grading (S/F)

Certain courses in the College of Liberal Arts are offered S/F and are so designated in the Schedule of Courses. All students registered for these courses receive either an S or an F.

The grade of S is not used in computing grade-point averages, but the grade of F is used. Credit with the grade of S may be applied to the General Education Program or toward requirements in the major or minor. The grade of F does not count as hours earned for graduation.

Special forms are not necessary to register for S/F courses, since all students enrolled in such courses automatically receive either an S or an F.

A maximum of 32 semester hours of P and S grades from all sources is accepted toward a baccalaureate degree. No more than 16 semester hours of P grades from The University of Iowa can be accepted toward a baccalaureate degree.

A maximum of two P/N courses may be taken in any session.

Pass/Nonpass Option (P/N)

Students in the College of Liberal Arts have the option of taking elective courses on a P/N basis. The instructor assigns a standard letter grade, which is converted automatically in the Office of the Registrar. Grades of A+, A, A-, B+, B, B-, C+, C, and C- are converted to P; grades of D+, D, D-, and F are converted to N.

The grades of P and N are not used in computing grade-point averages; the grade of N does not count as hours earned for graduation.

Students may register for P/N from the first day of classes up to the add deadline. For courses that start or end at times other than the beginning and end of the semester, students may register for P/N any time during the first one-fifth of the duration of the course. Signatures of both the instructor and the adviser must be obtained on a P/N form, and the form must be submitted to the Registration Center before the deadline. A P/N registration may not be changed after the add deadline.

Restrictions

Students on academic probation may not use the P/N grading option.

P/N grading may be used in elective courses only. Courses used to complete the General Education Program may not be taken P/N.

Course work in the major department is not available on a P/N basis, except by departmental action for courses that are not to be applied toward the major. This restriction applies to both University of Iowa and transfer course work. Courses required for the major in cognate or related areas may be taken P/N, if available, at the discretion of the major department. No course accepted toward the minor may be taken P/N.

A maximum of 32 semester hours of P and S grades from all sources is accepted toward a baccalaureate degree. No more than 16 semester hours of P grades from The University of Iowa can be accepted toward a baccalaureate degree.

A maximum of two P/N courses may be taken in any session.

Satisfactory/Fail Grading (S/F)

Certain courses in the College of Liberal Arts are offered S/F and are so designated in the Schedule of Courses. All students registered for these courses receive either an S or an F.

The grade of S is not used in computing grade-point averages, but the grade of F is used. Credit with the grade of S may be applied to the General Education Program or toward requirements in the major or minor. The grade of F does not count as hours earned for graduation.

Special forms are not necessary to register for S/F courses, since all students enrolled in such courses automatically receive either an S or an F.

A maximum of 32 semester hours of P and S grades from all sources is accepted toward a baccalaureate degree. No more than 16 semester hours of S grades from The University of Iowa can be accepted toward the baccalaureate degree.

Registered/Withdrawn (R/W)

Departments may choose to offer courses for 0 semester hours of credit. Courses offered only for zero credit are graded R/W. Courses offered for credit hours, when taken for zero credit (audited), are graded R/W. The instructor assigns a grade of R (registered) if the student’s attendance and performance are satisfactory; if they are unsatisfactory, the grade of W (withdrawn) is assigned. See “Auditing Courses” in this section of the Catalog.

Second-Grade-Only Option

Unless regression is involved, students may repeat courses taken at The University of Iowa and have only the grade and credit of the second registration used in calculating total hours earned as well as The University of Iowa cumulative and total cumulative grade-point averages. Under the provisions of this option,
the Office of the Registrar marks the permanent record (with the symbol #) to show that a particular course has been repeated. Both grades remain on the permanent record, but only the second one is used in calculating the grade-point averages and hours earned.

Students who wish to use this option register in the usual manner for the course they decide to repeat or add it during the regular period for adding courses. Students also must file for the option in the Office of Academic Programs, after the first week of classes in the semester in which the course is repeated. Unless and until this is done, both grades continue to be counted in the grade-point averages.

RULES AND RESTRICTIONS

The second-grade-only option may be used only for University of Iowa courses, including Saturday & Evening Classes, telecourses, and off-campus courses. A course taken at another college or university may not be repeated at The University of Iowa under the second-grade-only option, nor may a University of Iowa course be repeated at another institution under the second-grade-only option.

Students may apply the option to a maximum of three courses. The option may be used only once per course, and it may not be used if regression will occur.

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, it may be taken pass/nonpass or for a grade the second time.

A course taken through regular registration may not be repeated through Guided Correspondence Study (GCS) under the second-grade-only option. A course taken through GCS may be repeated through GCS or regular registration.

The option became available to students in the fall semester 1969. Courses taken or repeated before that time are not eligible.

The option may not be used by a student who already has been awarded a degree from The University of Iowa on a course taken before the degree was conferred.

Mid-Semester Reports

At mid-semester, instructors have the opportunity to report grades for students whose work is below C-. The Office of the Registrar distributes any reports it receives to advisers and to individual students, but these grades are not recorded on the permanent record.

Recognition for Academic Achievement

Dean's list

Liberal arts students who achieve a grade-point average of 3.50 or higher on 12 or more semester hours of graded work (excluding University of Iowa Guided Correspondence Study courses) during a given semester and who have no hours of I (incomplete) or 0 (no grade reported) during the same semester are recognized by inclusion on the Dean's List for that semester.

President's list

Undergraduate students who achieve a grade-point average of 4.00 on 12 or more semester hours of graded work and who have no hours of I (incomplete) or 0 (no grade reported) for two consecutive semesters (excluding summer sessions) are recognized by inclusion on the President's List.

Graduation with Distinction

The Office of the Registrar certifies to the dean of the college the names of students eligible to graduate with distinction. The college awards degrees “with highest distinction” to students in the highest 2 percent of the graduating class, “with high distinction” to students in the next highest 3 percent, and “with distinction” to the next highest 5 percent. Ranking is based on students' grade-point averages for all college-level study undertaken before the final registration.

To be eligible for graduation with distinction, students must complete a minimum of 60 semester hours in residence in The University of Iowa College of Liberal Arts, of which at least 45 semester hours must have been completed before the student’s final registration.

Graduation with Honors

Each department establishes requirements for graduation with honors. Successful completion of these requirements leads to a baccalaureate degree “with honors” in the major (see the departmental sections of the Catalog).

Academic Standards

Students in the College of Liberal Arts are expected to meet academic standards set by the college and to demonstrate reasonable progress toward a degree. Academic probation serves as a warning that unless academic performance improves, a student may be dismissed from the college and may not graduate. Academic probation also voids the college’s agreement with a student who signed The University of Iowa Four-Year Graduation Plan agreement.

Academic Probation

Students must achieve specific minimum University of Iowa and total cumulative grade-point averages or they are placed (or continued) on academic probation. Students who have earned 0-29 semester hours must earn UI and total cumulative grade-point averages of 1.85 or higher or they are placed (or continued) on academic probation. All other students, including nondegree students, must earn UI and total cumulative grade-point averages of 2.00 or higher UI or they are placed (or continued) on academic probation.

Students on academic probation are restored to good standing only if both the University of Iowa and total cumulative grade-point averages equal or exceed the grade-point averages designated above.

The pass/nonpass (P/N) grading option may not be used by students on academic probation; however, S/F courses are allowed.

Students may be admitted on probation if they fail to meet the minimum stated standards for admission; see “Admission Requirements” in this section of the Catalog.

Dismissal from the College

The College reviews the academic records of students on academic probation at the close of the fall semester and at the close of the spring semester. There is no academic review at the close of the summer session.

Dismissal in January

Students who are on academic probation during a fall semester and who fail to meet the minimum standard of a fall semester grade-point average of 1.33 [a D + average] are subject to dismissal in January. Students admitted on probation for a fall semester are included in this group.

Students who were dismissed at the end of the enrolled semester previous to fall, but who had the dismissal revoked on appeal, must in the fall enrollment either achieve good standing or demonstrate significant improvement with a fall semester grade-point average of 2.50 or higher. If not, they are subject to dismissal in January.

Students who have been reinstated for a fall semester after an academic dismissal and who fail to achieve a fall semester grade-point average of 2.00 (a C average) are subject to dismissal in January.

Students on academic probation who withdraw their entire registration after the eighth week of the fall semester are subject to dismissal at the close of that semester.

Dismissal in May

Students who enter in the fall semester directly from high school and those who transfer to the University with fewer than 24 semester hours, and who are not admitted on academic probation but are placed on probation for the spring semester, are subject to dismissal from the college in May if they fail to achieve good standing.

All other students who are on academic probation for the first time in a spring semester and who fail to meet the minimum standard of a spring semester grade-point average of 1.33 (a D + average) are subject to dismissal in May. Students admitted on probation for a spring semester are included in this group.

Continuing students who have spent the preceding two or more consecutive semesters on academic probation are subject to dismissal in May.

Students who were dismissed at the end of the enrolled semester previous to spring, but who had the dismissal revoked on appeal, must achieve good standing during the spring enrollment or demonstrate significant improvement with a spring semester grade-point average of 2.50 or higher. If not, they are subject to dismissal in May.
Students who have been reinstated for a spring semester after an academic dismissal and who fail to meet the minimum standard of a spring semester grade-point average of 2.00 (a C average) are subject to dismissal in May. Students on academic probation who withdraw their entire registration after the eighth week of the spring semester are subject to dismissal at the close of that semester.

Right to Appeal a Dismissal

Students who can document that an unsatisfactory academic record was the result of extenuating circumstances, such as a disabling illness or personal crisis, may appeal for revocation of a dismissal. Students dismissed in January must appeal in writing no later than 4:30 p.m. on the second day of spring semester classes. Students dismissed in May must appeal in writing no later than June 15. No appeals are considered for revocation of a dismissal that would permit enrollment in a six-week or eight-week summer session. Detailed information on the appeals procedure is available in the Office of Academic Programs. Appeals should be addressed to the Student Appeals Committee, Office of Academic Programs.

The decision of the committee is final.

Reinstatement to the College

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 or in person and should be addressed to the associate dean, Office of Academic Programs. Arrangements for a reinstatement interview must be made and the interview must take place between March 1 and July 1 for reinstatement to a fall semester, or between October 1 and December 1 for reinstatement to a spring semester. Late requests are deferred to the following semester.

Students who are permitted to register following a dismissal are registered on academic probation and ordinarily are allowed two semesters to achieve good standing. Very poor academic work in the first semester of a reinstatement, however, may result in dismissal at the close of that semester.

Notification and Records

Students placed on academic probation find that notation on their grade reports. Students continued on academic probation or dismissed from the college are notified in writing of these actions by the associate dean for academic programs. Mail is sent to the current residing address as listed in the student record. To ensure proper receipt of records, students must update their residing address whenever necessary.

Students admitted on probation have the notation “admitted on probation” entered on their permanent records. The notation “on academic probation” is placed on the permanent records of those students who have been placed or continued on academic probation. “Not permitted to register” is entered on the permanent records of students who have been dismissed from the college. When reinstatement has been granted, “permitted to register” for a particular semester or session is entered on the permanent record.

Class Attendance, Final Examinations, Student Conduct

Class Attendance

Individual instructors, course directors, or departments determine the policy on class attendance. Students are required to observe the regulations as announced for the course. However, University policy requires that students be permitted to make up examinations missed because of illness, mandatory religious obligations, or other unavoidable circumstances or University activities.

Excused Absences

For permission to be absent from class to participate in authorized University activities, students are expected to present to each instructor before each absence a written statement signed by a responsible official specifying exactly the dates and times necessary for them to miss class. Excused absences are granted to members of athletic teams, the marching and pep bands, debate teams, and other recognized University groups and to participants in University field trips. Participation in the National Guard also is considered an authorized activity.

Reported Absences

Students who are absent for medical or personal reasons are expected to present evidence to verify the reason. Students may report absences from class of five days or less by completing an “Explanatory Statement of Absence from Class” form, available at the Registration Center, and by presenting the form to the instructor. Students who are absent for more than five days may ask the Registration Center to send notification of the absence to each instructor. Instructors may require additional verification.

Final Examinations

A suitable period for examinations is set aside at the end of each semester, during which time no classes are held. With the exception of changes authorized by the associate dean for academic programs, all final examinations must be given according to the schedule announced in the Schedule of Courses. During summer sessions, there is no designated final examination period; final examinations are scheduled before the official end of the session, either during a regular class meeting time or at a time determined by the instructor of the course in consultation with the students in the class.

For a more complete discussion of policies governing final examinations, see the college’s Handbook for Liberal Arts Faculty, available in the Office of the Dean and on the College website.

Student Rights and Responsibilities

Students in the College of Liberal Arts have both rights and responsibilities. The College’s Handbook for Liberal Arts Faculty includes a complete discussion of instructors’ responsibilities to students. Procedures for student complaints about faculty actions are described below. All students are expected to follow the University’s Code of Student Life. The College of Liberal Arts considers cases of academic misconduct in the manner described as follows.

Plagiarism and Cheating

Plagiarism and cheating may result in grade reduction and/or other serious penalties. Plagiarism and cheating include, but may not be limited to:

- Presenting the ideas of others without credit to the source;
- Using direct quotations without quotation marks and without credit to the source;
- Paraphrasing without credit to the source;
- Participating in a group project that presents plagiarized materials;
- Failing to provide adequate citations for material obtained through electronic research;
- Downloading and submitting work from electronic databases without citation;
- Submitting material created or written by someone else as one’s own, including purchased term or research papers;
- Copying from someone else’s exam, homework, or laboratory work;
- Allowing someone to copy or submit one’s own work as his or her own;
- Accepting credit for a group project without doing one’s share;
- Submitting the same paper in more than one course without the knowledge and approval of the instructors;
- Using notes or other materials during a test or exam without authorization;
- Not following the guidelines specified by the instructor for a “take-home” test or exam.

Students who have questions about the proper use and citation of sources, or the details and guidelines for any assignment, should discuss their questions with the instructor.

An instructor who suspects a student of plagiarism or cheating must inform the student as soon as possible after the incident has been observed or discovered. If the instructor comes to the conclusion that the student has plagiarized or cheated, he or she in consultation with the departmental executive officer (DEO)
may decide to reduce the student’s grade in the course, even to assign an F. The DEO sends a written report of the case to the associate dean for academic programs; a copy is sent to the student.

The associate dean for academic programs may uphold, as the offense may warrant, the following or other penalties: placement on disciplinary probation until graduation, suspension from the college for a semester or longer, or recommendation of expulsion from the University by the president.

If a student feels that the finding of plagiarism or cheating is in error or that the penalty is unjust, he or she may request a hearing. Information on the appeal procedures is available in the Office of Academic Programs.

Forgery

The Code of Student Life prohibits forgery of University records, documents, or student identification cards. The Office of Academic Programs interviews students suspected of forgery and takes disciplinary action based on the interview and verification provided by the adviser, instructor, or dean whose signature is in doubt.

Classroom Disruption

Students who are physically or verbally disruptive in a class may be dealt with summarily by the instructor or referred to the dean of students. The instructor reports in writing to the dean of students any disciplinary action undertaken against a student.

Records of disciplinary actions taken against students reside in the Office of Academic Programs and are destroyed when the students graduate, or after five years if the students have left the University or have not graduated. A notation of disciplinary action does not appear on a student’s permanent record, even if the student has been suspended or expelled.

Student Complaints Concerning Faculty Actions

A student who has a complaint is responsible for following the procedures described below. Complaints may concern inappropriate faculty conduct (including inappropriate course materials), incompetence in oral communication, inequities in assignments, scheduling of examinations at other than authorized and published times; failure to provide disability accommodations; or grading grievances.

Note: it is college policy that grades cannot be changed without the permission of the department concerned.

Ordinarily, the student should attempt to resolve the matter with the instructor first.

If the complaint is not resolved to the student’s satisfaction, the student should consult the course supervisor (if the instructor is a teaching assistant), the departmental executive officer, or in some departments, the person designated to hear complaints.

If the matter remains unresolved, the student may submit a written complaint to the associate dean for academic programs. The associate dean attempts to resolve the complaint and, if necessary, may convene a special committee to recommend appropriate action. In any event, the associate dean responds to the student in writing regarding the disposition of the complaint.

A student dissatisfied with the outcome of a complaint involving academic accommodations may file a complaint with the Office of Affirmative Action.

If a complaint cannot be resolved through the mechanisms described above, the student may file a formal complaint, which will be handled under the procedures established for dealing with alleged violations of the statement on professional ethics and academic responsibility in the University Operations Manual. A description of these formal procedures is available from the Office of Academic Programs.

If the complaint involves sexual harassment, these procedures need not be followed. The University policy on sexual harassment and consensual relationships in the instructional context can be found in “Policies and Regulations Affecting Students,” given to all students each fall, and available at the Campus Information Center, in the Office of the Vice President for Student Services and Dean of Students, and on Division of Student Services web site.

The Office of the University Ombudsperson responds to problems and disputes brought forward by any members of the University community—students, staff, and faculty—that appear unresolved through existing channels. Before consulting the ombudsperson, an attempt should be made to resolve problems by following the procedures described above.

Questions about any of these procedures can be answered by professional staff in the Office of Academic Programs.

Nondepartmental Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>610:021</td>
<td>Intercollegiate Athletic Participation</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>610:029</td>
<td>First-Year Seminar</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td></td>
<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). Open only to first- and second-semester students.</td>
<td></td>
</tr>
<tr>
<td>610:061</td>
<td>OnLine at Iowa</td>
<td>1 s.h.</td>
</tr>
<tr>
<td></td>
<td>The University of Iowa campus and electronic communication at Iowa; campus tour; visits to World Wide Web sites with services for students; introduction to UI Libraries and electronic searching for information; how to use electronic network browsers and e-mail, create a web site, and write for printed publication. Open only to first- and second-semester students.</td>
<td></td>
</tr>
<tr>
<td>610:099</td>
<td>Peer Mentoring</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td></td>
<td>Opportunities to participate in classroom and course activities as mentors for other students. Consent of instructor required.</td>
<td></td>
</tr>
</tbody>
</table>

AEROSPACE STUDIES (AIR FORCE ROTC)

Head: Lt. Col. Mark Lacy
Assistant professors: Capt. Matt Keiper, Maj. Joe Spiess
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 educates highly qualified students who are working toward a bachelor’s degree and a commission as an officer in the United States Air Force.

AFROTC is entirely voluntary, with courses open to all undergraduate and graduate students. The amount of AFROTC academic credit that may be applied toward a degree varies from college to college at the University. The College of Liberal Arts, for example, accepts a maximum of 20 semester hours.

In order to receive a commission, AFROTC cadets must complete all University requirements for a degree as well as courses specified by the U.S. Air Force.

AFROTC offers two-, three-, and four-year programs. Joining the program early gives students the opportunity to try AFROTC without obligation. It also can give individuals an advantage in the selection process for scholarships.

The AFROTC program’s three main components are the general military course (GMC), the professional officer course (POC), and field training.

General Military Course

The general military course (GMC) consists of a 1-semester-hour course and a leadership laboratory during each semester of the first and second years. Any student who meets AFROTC qualifications and is in good academic standing with the University is eligible to participate in the GMC.

Professional Officer Course

The professional officer course (POC) consists of four 5-semester-hour AFROTC courses. 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 two years in school.

Field Training

All POC applicants must successfully complete field training at a U.S. Air Force base during a summer, usually between the sophomore and junior years. There are two types of field training: a four-week course for cadets who have completed all GMC requirements and a five-week course for all other applicants.
Field training consists of aircraft, aircrew, career, and survival orientation; junior officer training; physical training; small arms training; human relations education; and equal opportunity training. The five-week field training provides 60 hours of academic work that a student normally would have taken in the GMC.

Students receive authorized pay and allowances when they attend field training.

### Special Activities

The Cadet Corps sponsors many social events, including informal parties, formal dinners, and a military ball. The advanced training program is a voluntary program in which selected cadets may go on active duty for two or three weeks during the summer following their junior year. Cadets get hands-on experience and receive authorized pay and allowances. Selected AFROTC cadets may attend airborne training and upon completion wear the Army parachute jump wings.

### Financial Aid

Scholarships are available, based on merit, for one, two, and three years of study. They provide full tuition, a stipend for books, laboratory fees, and $200 per month, tax-free. Applicants are selected on both objective and subjective factors. Students should apply directly to the head of aerospace studies.

All cadets in the last two years of AFROTC are eligible for some financial assistance. They also receive $200 per month, tax-free. Uniforms are furnished as well as all books for AFROTC classes.

### 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.

### Courses

23A:010 The Air Force Today AS 100 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. First-year or sophomore standing or consent of instructor required.

23A:011 AFROTC Leadership Laboratory (LLAB) AS 100-FA 0 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. First-year or sophomore standing or consent of instructor required. Offered fall semesters. Corequisite: 23A:010.

23A:012 The Air Force Today AS 100 1 s.h. Continuation of 23A:011. First-year or sophomore standing or consent of instructor required. Offered spring semesters. Corequisite: 23A:011.

23A:013 AFROTC Leadership Laboratory (LLAB) AS 100-SP 0 s.h. See 23A:011. Offered fall semesters. Corequisite: 23A:011.

23A:020 The Development of Air Power AS 200 1 s.h. Air power from the dawn of man to World War II; emphasis on developments in U.S. Air Force.


23A:022 The Development of Air Power AS 200 1 s.h. Continuation of 23A:020. Air power from post-World War II to present; emphasis on developments in U.S. Air Force.

23B:023 AFROTC Leadership Laboratory (LLAB) AS 200-SP 0 s.h. See 23A:021. Offered spring semesters. Corequisite: 23A:022.

23A:126 Training AS 100 3 s.h. Emphasis on management, leadership, communication skills required of an Air Force officer. Junior standing or above or consent of instructor required.

23A:131 AFROTC Leadership Laboratory (LLAB) AS 300-FA 0 s.h. See 23A:011. Offered fall semesters. Corequisite: 23A:130.

23A:132 Management and Leadership AS 300 3 s.h. Continuation of 23A:131. Junior standing or above or consent of instructor required.

23A:133 AFROTC Leadership Laboratory (LLAB) AS 300-SP 0 s.h. See 23A:011. Offered spring semesters. Corequisite: 23A:132.

23A:140 National Security Forces AS 200-SP 0 s.h. Modern security of the United States; its relationships with world powers; the role of the United States in world affairs. Second-year or above or consent of instructor required.

23A:143 AFROTC Leadership Laboratory (LLAB) AS 400-SP 0 s.h. See 23A:011. Offered spring semesters. Corequisite: 23A:142.

23A:150 Readings in Contemporary Military Issues AS 3 s.h. Individual research. May be repeated. Consent of department head required.

### AFRICAN AMERICAN WORLD STUDIES

Chair: Horace A. Porter
Professor: Peter Nazareth (English/African American World Studies)
Associate professors: James Giblin (History/African American World Studies), Fredrick Woodard (English/African American World Studies)
Assistant professors: Michaeline Crichlow (African American World Studies), Robert Jefferson (History/African American World Studies)

**Undergraduate Program**

**Bachelor of Arts**

Students may earn a Bachelor of Arts with a major in African American world studies by following one of three programs of study: the African American studies option (30 semester hours), the African American world studies option (39 semester hours), or an African studies option (33 semester hours). Transfer course work for application to the major is evaluated on an individual basis.

The African American studies option focuses on Blacks in the United States and gives some attention to their culture and history in relation to the culture and history of Blacks elsewhere in the world. The African American world studies option places greater emphasis on interrelationships of Black history and cultures in various places in the world. The African studies option places emphasis on Africa.

Students must earn a grade-point average of 2.00 or higher in all courses in their major program.

### African American Studies Option

**REQUIRED COURSES**

129:060 Introduction to African American Society 3 s.h.
129:061 Introduction to African American Culture 3 s.h.

129:065 Introduction to African American History 3 s.h.
129:099 Senior Seminar 3 s.h.
129: 116 African American Literature I 3 s.h.
129: 117 African American Literature II 3 s.h.
129:189 Themes in African American History 3 s.h.

ELECTIVES

Students must take 6 semester hours of electives in 129-prefix courses; they are encouraged to take at least 3 semester hours of these electives in courses focused on Africa or Blacks in the Caribbean.

LANGUAGE REQUIREMENT

The language requirement for the African American studies option is the same as that of the College of Liberal Arts General Education Program. See the College of Liberal Arts introductory of the Catalog.

African American World Studies Option

REQUIRED COURSES

129:008 Literatures of the African Peoples 3 s.h.
129:060 Introduction to African American Society 3 s.h.
129:061 Introduction to African American Culture 3 s.h.
129:138 African and African American Interactions 3 s.h.
129:116 African American Literature I 3 s.h.
or
129:117 African American Literature II 3 s.h.
129:119 African Literature 3 s.h.
or
129:163 Precolonial African History 3 s.h.
or
129:164 African History since 1880 3 s.h.
129:065 Introduction to African American History 3 s.h.
129:080 Critical Skills Seminar 3 s.h.
129:099 Senior Seminar 3 s.h.
129:189 Themes in African American History 3 s.h.

ELECTIVES

Students must earn 6 semester hours of electives in 129-prefix courses.

LANGUAGE REQUIREMENT

The language requirement for the African American world studies option is four semesters, or the equivalent, in any language other than English that is regularly spoken in Africa. The languages currently taught at The University of Iowa that satisfy this requirement are Swahili, Zulu, French, Portuguese, and Spanish.

African Studies Option

This option is administered jointly by the chair of the Department of African American World Studies and the director of the African Studies Program, in consultation with their faculties. Students who elect this option are advised by the two chairs.

The program consists of 33 semester hours of course work in addition to four semesters, or the equivalent, of instruction in an African language.

The following courses are required. For course descriptions, see the appropriate departmental sections of the Catalog.

CORE COURSES

129:080 Critical Skills Seminar 3 s.h.
129:163 Precolonial African History 3 s.h.
129:164 African History since 1880 3 s.h.
141:007 Introduction to African Studies 3 s.h.
141:180 Advanced Undergraduate Seminar in African Studies (usually taken during the senior year) 3 s.h.

LANGUAGE REQUIREMENT

African languages offered at The University of Iowa are Swahili and Zulu.

129:015-016 Elementary Swahili I-II 8 s.h.
129:017-018 Intermediate Swahili I-II 8 s.h.
or
129:031-032 Elementary Zulu I-II 8 s.h.
129:033-034 Intermediate Zulu I-II 8 s.h.

Students also may fulfill the language requirement by demonstrating competence in another African language.

HUMANITIES ELECTIVES

Two courses (6 semester hours) focused on Africa, chosen from the following art, history, and literature courses:

141:030 Introduction to African Art 3 s.h.
141:107 Art of West Africa 3 s.h.
141:108 Art of Central Africa 3 s.h.
141:111 The Art of Southern and Eastern Africa 3 s.h.
141:112 Art and Archaeology of Ancient Africa 3 s.h.
141:202 Seminar: Problems in African Art 2-3 s.h.
16W:119 African and African American Interactions 3 s.h.
141:124 Women in African History 3 s.h.
141:143 The History of South Africa 3 s.h.
141:914 Literatures of the African Peoples 3 s.h.
141:119 African Literature 3 s.h.
141:163 Francophone Literature of the African Diaspora 3 s.h.
141:227 Three African Writers 3 s.h.

SOCIAL SCIENCE ELECTIVES

Two courses (6 semester hours) focused on Africa, chosen from the following:

044:162 Work, Gender, and Development 3 s.h.
141:146 African Development 3 s.h.
141:148 The Politics of Southern Africa 3 s.h.

AFRICAN CONTENT ELECTIVE

One course (3 semester hours) in African studies or having a significant African content, chosen from the following:

01H:002 Art of Africa, Oceania, and Pre-Colombian America 3 s.h.
01H:109 The Arts of the African Diaspora 3 s.h.
030:150 Politics of Emerging Market Economies 3 s.h.
044:094 International Development 3 s.h.
044:157 Third World Development Support 3 s.h.
044:162 Work, Gender, and Development 3 s.h.
044:194 Geographic Perspectives on Development 3 s.h.
129:175 Black Action Theatre 3 s.h.
141:110 African News Colloquium 2 s.h.
141:115 Topics in African Studies 3 s.h.

DIASPORA ELECTIVE

One course (3 semester hours) focused on the experience of Blacks in the diaspora; the course should be chosen from those offered by African American world studies.

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.)

AFRICAN AMERICAN STUDIES OPTION

Before the third semester begins: at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: at least two courses in the major, including 129:060 and 129:061, and at least one-half of the semester hours required for graduation
Before the seventh semester begins: four more courses in the major [for a total of six] and at least three-quarters of the semester hours required for graduation
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

AFRICAN AMERICAN WORLD STUDIES OPTION

Before the third semester begins: at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: at least two courses in the major and at least one-half of the semester hours required for graduation
Before the seventh semester begins: at least seven courses in the major, including the three...
African American world studies offers an honors program at the University of Iowa. Honors candidates in African American world studies must be members of the University Honors Program. Under the guidance of the undergraduate honors advisor, the honors candidate defines a research project using primary sources. Project proposals are made by the end of the candidate’s junior year. Each candidate completes a project under the guidance of a supervising faculty member and may register for up to 6 semester hours in 129:095 Honors Project. Results are presented in a senior essay to a committee of three faculty members, including the supervising faculty member, the honors advisor, and a third faculty member of the student’s choice. When the honors advisor is the supervising faculty member, the candidate may select second and third faculty members. The candidate’s committee may choose to hear an oral defense of the final project, usually in the 12th week of the student’s last semester.

Honors

The African American world studies honors program offers students the opportunity to pursue special interests in individual, in-depth research. Honors candidates in African American world studies must be members of the University Honors Program. Under the guidance of the undergraduate honors advisor, the honors candidate defines a research project using primary sources. Project proposals are made by the end of the candidate’s junior year. Each candidate completes a project under the guidance of a supervising faculty member and may register for up to 6 semester hours in 129:095 Honors Project. Results are presented in a senior essay to a committee of three faculty members, including the supervising faculty member, the honors advisor, and a third faculty member of the student’s choice. When the honors advisor is the supervising faculty member, the candidate may select second and third faculty members. The candidate’s committee may choose to hear an oral defense of the final project, usually in the 12th week of the student’s last semester.

Minor

African American world studies offers an undergraduate minor in African American studies. The requirements conform to the general requirements for minors in the College of Liberal Arts. In consultation with their advisers, students select five courses (15 semester hours) in designated African American world studies courses. Four of these courses (12 semester hours) must be numbered 100 or above and must be taken at The University of Iowa. Students must earn a grade-point average of at least 2.00 in all courses in the minor. Courses numbered 100 and above may be selected from 129-prefix courses in the list at the end of this section of the Catalog.

Students who wish to pursue a minor in African American studies should consult with an adviser in African American world studies as early as possible. It is recommended that they select an introductory course from the following:
129:008. 129:011. 129:060. 129:061. 129:065: Advisers also recommend that they choose 129:116 or 129:117, and 129:189 as two of their upper-level courses.

Graduate Programs

Master of Arts

The interdisciplinary curriculum leading to a Master of Arts in African American studies provides an intensive, organized, graduate-level examination of African American culture and experience. Such a program especially benefits individuals preparing for community college teaching, work with community-service organizations, or other careers in which an understanding of African Americans and African cultures is necessary or helpful.

Curriculum Requirements

The M.A. requires 34 postbaccalaureate semester hours. Requirements include the following.

129:211 Introduction to Research in African American Culture 3 s.h.
129:312 Advanced Research in African American Culture (thesis/project) 4 s.h.
Additional courses in African American world studies (at least this much credit) 12 s.h.
Electives 15 s.h.

Students should choose electives in consultation with their advisers. All 15 semester hours of electives may be chosen from courses numbered above 100. Ideally, students should choose electives that share either a disciplinary or thematic connection. Students should consult an adviser in the program to determine which courses numbered above 100 are approved for an M.A.

Because the African American world studies advisory committee encourages doctoral study for those who have the ability, interest, and resources, it recommends that 6 of the 13 semester hours of electives in the Master of Arts program be used to explore doctoral education in disciplines outside African American world studies. Possible fields of study include American studies, anthropology, education, English, geography, history, and sociology. Students are encouraged to select at least one-half of the courses in the M.A. curriculum from those numbered above 200.

Language/Tool Requirements

No foreign language or tool is required for the Master of Arts program in African American world studies, but students considering doctoral study in another field are encouraged to complete one language/tool requirement for that field while studying at the master’s level.

Thesis/Project Requirements

A thesis is not required but is an option for a Master of Arts. Students who elect to write a thesis must explore a topic of African American culture and/or experience in the thesis using research from more than one discipline. The maximum credit for a thesis is 4 semester hours.

Students who do not prepare a thesis are required to develop, in consultation with an adviser, a project related to African American culture and/or experience. When completed, this project must be presented and defended before an appropriate class in African American studies. Credit for the thesis or project usually is earned through registration in 129:312 Advanced Research in African American Culture (4 semester hours).

Admission

In addition to the general requirements of the Graduate College, unconditional graduate admission to African American world studies requires that students have an appropriate educational background in literature and the social sciences, at least 6 semester hours of college credit in African or African American literature and/or history courses, and a grade-point average of at least 2.70 in previous college courses in African American studies. Students may be asked to take, without credit toward the master’s degree, courses to remedy deficiencies in their undergraduate preparation.

Applicants for admission are expected to provide three letters of recommendation from former professors and a sample of written scholarly work.

Recommendations for admission are made by the admissions subcommittee of the Department of African American World Studies.

Concentration Leading to Ph.D. in American Studies

Generally, students seeking a Ph.D. in American studies with a concentration in African American studies are preparing to be teachers or research scholars at the college or university level.

Ordinarily, students seeking the African American studies concentration take a minimum of 36 semester hours of graduate study in African American world studies and write a dissertation on a topic in African American culture. Students interested in this concentration should consult both the chair of African American world studies and the chair of American studies for more information.

Cognate Areas, Special Fields

It is possible for students to take concentrations of African American studies courses as cognate areas or special fields in Ph.D. programs in...
Related Courses

Although they are not offered by African American world studies, the following courses are recommended for interested students. For course descriptions, see the appropriate departmental sections of the Catalog.

ANTHROPOLOGY
113:151 Sociology of the Third World 3 s.h.

ART AND ART HISTORY
01H:310 Seminar: Problems in African Art 2-3 s.h.

CINEMA AND COMPARATIVE LITERATURE
048:042 Major Texts in World Literature III 3 s.h.
048:160 Caribbean Literature in Comparative Perspective 3 s.h.

EDUCATION
07F:104 Education in the Third World 2-3 s.h.
07F:130 Educational Sociology 2-3 s.h.
07F:154 Education, Race, and Ethnicity 2-3 s.h.
07U:133 The Culturally Different in Diverse Settings 3 s.h.

GEOGRAPHY
048:157 Third World Development 3 s.h.

HEALTH, LEISURE, AND SPORT STUDIES
028:074 Inequality in Sport 3 s.h.

HISTORY
16A:061 African American History 1492-1877 3 s.h.
16A:062 American History 1877-Present 3 s.h.
16A:164 Civil War and Reconstruction 3 s.h.
16A:165 The Gilded Age in America 3 s.h.
16A:166 The Progressive Era in America 3 s.h.
16A:167 The New Era and The New Deal 1920-1940 3 s.h.
16A:168 The Contemporary U.S. 1940-Present 3 s.h.

POLITICAL SCIENCE
030:146 African Development 3 s.h.
030:148 The Politics of Southern Africa 3 s.h.
030:150 Politics of Emerging Market Economies 3 s.h.

SOCIOLGY
034:166 Social Inequality 3 s.h.

SOCIAL WORK
042:147 Racism and Discrimination 3 s.h.

Cocurricular Activities

Black Action Theater
Sponsored academically through the Department of African American World Studies, Black Action Theater gives participants instruction and experience in theatrical productions of works by Black authors.

Afro-American Cultural Center
African American world 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 Black culture, providing cultural enrichment for Black people of the Iowa City community and a cultural meeting place for Black students. It also attempts to provide a knowledge of Black culture that will promote intercultural understanding among all members of the University community. See “Cultural Centers” in the Student Life at Iowa section of the Catalog.

Student Association
The African American Studies Student Association attempts to promote interest in Black culture by sponsoring programs on various topics. Any University of Iowa student interested in African American world studies is eligible to become a member.

Courses

For Undergraduates

129:000 Cooperative Education Internship 0 s.h.
129:008 Literature of the African Peoples 3 s.h.
129:017 Intermediate Swahili I GE: foreign language. Same as 103:017, 141:017.
129:031 Elementary Zulu I Zulu language and culture through speaking, listening, reading, writing. GE: foreign language. Same as 103:031, 141:031.
129:032 Elementary Zulu II Continuation of 129:031, which is prerequisite GE: foreign language. Same as 103:032, 141:032.
129:033 Intermediate Zulu I Continued skill development; review and expansion of basic grammar. GE: foreign language. Prerequisite: 129:032 or equivalent. same as 103:033, 141:033.
129:034 Intermediate Zulu II Continuation of 129:033, which is prerequisite GE: foreign language. Same as 103:034, 141:034.
129:060 Introduction to African American Society Social and cultural history of African Americans through framework of general works in anthropology, sociology, history. GE: cultural diversity or social sciences. 3 s.h.
African Studies • College of Liberal Arts

African Studies

For Graduate Students

129:204 Readings: Slavery and Emancipation
Same as 016:204.

129:205 Seminar: Slavery and Emancipation
Same as 016:205.

129:210 Readings in the Culture of Black America
Social, economic, political, religious experiences that have influenced Black Americans.

129:211 Introduction to Research in African American Culture
Methodologies, bibliographies, issues, resources significant to study of African American culture. Consent of instructor required. Same as 045:210.

129:212 Advanced Readings in Black Culture
Textual, social, political analyses of works by Black authors.

129:213 African American Autobiography
Textual, social, political analyses of works by Black authors.

129:214 African American Drama
Developments in drama by African Americans since 1923. Same as 008:154, 049:192.

129:215 African American Poetry
Same as 008:139.

129:216 Intermediate Zulu I for Graduates
Continued skill development; review and expansion of basic grammar. Prerequisite: 129:166 or equivalent. Same as 103:167, 141:167.

129:217 Elementary Yoruba I for Graduates
Same as 103:315, 141:315.

129:218 African American Drama
Theory and performance; study of history and theory related to the role of world economic development in creating societies and cultures, thus shaping flows and counterflows of the world's diverse peoples and creating distinct spaces. Consent of instructor required.

129:219 African American Women's Poetry
Same as 129:127, 141:127.

129:220 African American History
Continued skill development; review and expansion of basic grammar. Prerequisite: 129:166 or equivalent. Same as 103:167, 141:167.

129:221 Elementary Yoruba I for Graduates
Same as 103:165, 141:165.

129:222 Three African Writers
Same as 008:227, 141:227.

129:223 Studies in African American Literature
Same as 008:228.

129:224 Seminar: African American History
Same as 016:246.

129:225 Seminar: Problems in African Art
Same as 016:210, 141:202.

129:226 Readings: African American Autobiography
Same as 016:204.

129:227 Three African Writers
Same as 008:227, 141:227.

129:228 Studies in African American Literature
Same as 008:228.

129:229 Seminar: Interpreting Oral Histories
This seminar examines interpretations and methods applied by historians in various world regions to different forms of oral history, ranging from old oral traditions to contemporary autobiographical testimony. Students present research papers. Same as 016:259.

129:230 Seminar: Critical Theory
Theory in context of African American literature. culture.

African Studies

Director: Christopher Roy (Art and Art History)
Affiliated faculty: Joyce Arthur (Theatre Arts), Joel Barkan (Political Science), Sandra Barkan (Cinema and Comparative Literature), Jacques Bourgoaix (French and Italian), Christopher Culy (Linguistics), Ashley Dawson (English), James Gilin (History/African American World Studies), Ah Gratama (Art and Art History), Peter Hilsenrath (Health Management and Policy), Michael McNulty (Geography), Peter Nazareth (English/African American World Studies), Christopher Roy (Art and Art History), Randall Thomas (Law), Adrian Wing (Law), Fredrick Woodard (English/African American World Studies)

The African Studies Program (ASP) helps students gain a broad understanding of contemporary life in Africa and the historical and cultural forces that shape the continent. ASP fosters collaboration among students and faculty to increase opportunities for teaching and research, both at the University and abroad.

Several established programs and unusual resources of The University of Iowa contribute to ASP: close collaboration with the Department of African American World Studies, with its emphasis on African diasporas; University Libraries’ strong Africana collection and specialist librarian; the world famous Stanley Collection of African Art at the UI Museum of Art; the interdisciplinary Project for Advanced Study of Art and Life in Africa (PASALA), which supports student research on campus and in Africa; the International Writing Program, with its frequent African participants; The University’s film program, which often focuses on Africa; and the many African and Afrocentric scholars from around the world who visit the University.
ASP maintains formal student/faculty exchange programs with the University of Ibadan (Nigeria) and the University of Ouagadougou (Burkina Faso). It also collaborates with African and Africanist colleagues throughout Africa and Europe and in several Asian and South American countries.

### Undergraduate Programs

The African Studies Program gives undergraduate students two opportunities for interdisciplinary study of Africa: a major track offered as an option in the B.A. in African American World Studies, and a certificate program.

#### B.A. in the African Studies Option

The African studies option in the B.A. in African American world studies is administered jointly by the chairs of the Department of African American World Studies and the African Studies Program, in consultation with their faculties. Students are advised by the two chairs.

#### Required Courses

The B.A. program consists of 33 semester hours of course work in addition to four semesters, or the equivalent, of instruction in an indigenous African language.

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

#### CORE COURSES

- 129:080 Critical Skills Seminar 3 s.h.
- 141:007 Introduction to African Studies 3 s.h.
- 141:120 Pre-Colonial African History 3 s.h.
- 141:121 African History since 1880 3 s.h.
- 141:180 Advanced Undergraduate Seminar in African Studies (usually taken during the senior year) 3 s.h.

#### LANGUAGE REQUIREMENT

African languages offered at The University of Iowa are Swahili and Zulu.

- 141:015-016 Elementary Swahili I-II 8 s.h.
- 141:017-018 Intermediate Swahili I-II 8 s.h.

Or

- 141:031-032 Elementary Zulu I-II 8 s.h.
- 141:033-034 Intermediate Zulu I-II 8 s.h.

Graduate students may enroll in 100-level Swahili and Yoruba courses.

Students also may fulfill the language requirement by demonstrating competence in another African language.

#### HUMANITIES ELECTIVES

Two courses (6 semester hours) focused on Africa, chosen from the following art, history, and literature courses:

- 141:030 Introduction to African Art 3 s.h.
- 141:07 Art of West Africa 3 s.h.
- 141:08 Art of Central Africa 3 s.h.

- 141:111 The Art of Southern and Eastern Africa 3 s.h.
- 141:112 Art and Archaeology of Ancient Africa 3 s.h.
- 141:202 Seminar: Problems in African Art 2-3 s.h.
- 141:120 Pre-Colonial African History (counts as elective for certificate only) 3 s.h.
- 141:121 African History since 1880 (counts as elective for certificate only) 3 s.h.
- 141:124 Women in African History 3 s.h.
- 141:142 African and African American Interactions 3 s.h.
- 141:143 The History of South Africa 3 s.h.
- 141:014 Literatures of the African Peoples 3 s.h.
- 141:119 African Literature 3 s.h.
- 141:163 Francophone Literature of the African Diaspora 3 s.h.
- 141:227 Three African Writers 3 s.h.

#### SOCIAL SCIENCE ELECTIVES

Two courses (6 semester hours) focused on Africa, chosen from the following:

- 044:162 Work, Gender, and Development 3 s.h.
- 141:146 African Development 3 s.h.
- 141:148 The Politics of Southern Africa 3 s.h.

#### AFRICAN CONTENT ELECTIVE

One course (3 semester hours) in African studies or having a significant African content, chosen from the following:

- 01H:002 Art of Africa, Oceania, and Pre-Colombian America 3 s.h.
- 01H:109 The Arts of the African Diaspora 3 s.h.
- 030:150 Politics of Emerging Market Economies 3 s.h.
- 044:094 International Development 3 s.h.
- 044:157 Third World Development Support 3 s.h.
- 044:162 Work, Gender, and Development 3 s.h.
- 044:194 Geographic Perspectives on Development 3 s.h.
- 129:175 Black Action Theatre 3 s.h.
- 141:110 African News Colloquium (may be combined with 141:105 Independent Study to fulfill elective requirement) 2 s.h.
- 141:115 Topics in African Studies 3 s.h.

#### DIASPORA ELECTIVE

One course (3 semester hours) focused on the experience of people of African heritage in the diaspora; the course should be chosen from those offered by the Department of African American World Studies (see “African American World Studies” in this section of the Catalog).

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least four courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least eight courses in the major, including at least two semesters of required African language (or equivalent competency), and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: at least 10 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

Students enrolled in the African studies option of the B.A. in African American World Studies may earn the degree with honors by completing an appropriate project (see “African American World Studies” in the Catalog).

### Certificate Program

The certificate program in African studies complements a departmental major and prepares students for graduate study or careers related to Africa. The curriculum for an undergraduate certificate includes 21 semester hours of courses on Africa, divided into three levels of study: introductory, intermediate, and advanced. There is a foreign language requirement. A grade-point average of at least 2.00 is required in all course work applied toward the certificate. Courses applied toward the certificate also may be used to complete the General Education Program or the requirements for a major or a minor. The certificate is awarded only upon completion of a bachelor’s degree. Holders of Iowa baccalaureate degrees may return to complete the requirements for the certificate.

Students interested in pursuing a Certificate in African Studies should contact International Programs to make an appointment with an African Studies Program adviser.

#### Required Courses

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

#### FOREIGN LANGUAGE

Certificate students must take four semesters, or the equivalent, of an African language or foreign language spoken in Africa. Languages currently taught at The University of Iowa that meet this requirement are Swahili, Zulu, French, Portuguese, and Spanish.

#### INTERMEDIATE COURSES

Students take five courses, with at least one from each of four areas of study-art, history, literature, and social science—for a total of 15 semester hours. Courses are listed above under
**University Linkage Agreements**

The University of Iowa and the University of Ouagadougou (Burkina Faso) established a formal linkage in 1983 with a grant from the United States Information Agency. That linkage has continued since the expiration of the grant. Another linkage was established in 1988 with the University of Ibadan (Nigeria). The linkage programs involve exchanges of African and Iowa faculty members and students for teaching, curriculum development, study, and joint research.

<table>
<thead>
<tr>
<th>Courses</th>
<th>Credits</th>
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<tbody>
<tr>
<td>141:007 Introduction to African Studies</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>141:014 Literatures of the African Peoples</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:015 Elementary Swahili I</td>
<td>4 s.h.</td>
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<tr>
<td>141:016 Elementary Swahili II</td>
<td>4 s.h.</td>
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<tr>
<td>141:017 Intermediate Swahili I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>141:018 Intermediate Swahili II</td>
<td>4 s.h.</td>
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<tr>
<td>141:025 Elementary Yoruba I</td>
<td>4 s.h.</td>
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<tr>
<td>141:026 Elementary Yoruba II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>141:027 Intermediate Yoruba I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>141:028 Intermediate Yoruba II</td>
<td>4 s.h.</td>
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<tr>
<td>141:030 Introduction to African Art</td>
<td>3 s.h.</td>
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<tr>
<td>141:031 Elementary Zulu I</td>
<td>4 s.h.</td>
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<tr>
<td>141:032 Elementary Zulu II</td>
<td>4 s.h.</td>
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<tr>
<td>141:033 Intermediate Zulu I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>141:034 Intermediate Zulu II</td>
<td>4 s.h.</td>
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<tr>
<td>141:051 Independent Study</td>
<td>1-3 s.h.</td>
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<tr>
<td>141:052 Elementary Zulu</td>
<td>3 s.h.</td>
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<tr>
<td>141:053 Intermediate Zulu</td>
<td>3 s.h.</td>
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<tr>
<td>141:054 Intermediate Zulu</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:065 Francophone Literature of the African Diaspora</td>
<td>3 s.h.</td>
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<tr>
<td>141:121 African History since 1880</td>
<td>3 s.h.</td>
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<tr>
<td>141:122 Three African Writers</td>
<td>3 s.h.</td>
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<tr>
<td>141:123 African History since 1880</td>
<td>3 s.h.</td>
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<tr>
<td>141:124 Women in African History</td>
<td>3 s.h.</td>
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<tr>
<td>141:125 Elementary Swahili I for Graduates</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:126 Elementary Swahili II for Graduates</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:127 Intermediate Swahili I for Graduates</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:128 Intermediate Swahili II for Graduates</td>
<td>3 s.h.</td>
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<tr>
<td>141:135 Elementary Yoruba I for Graduates</td>
<td>3 s.h.</td>
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<tr>
<td>141:136 Elementary Yoruba II for Graduates</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:137 Intermediate Yoruba I for Graduates</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:138 Intermediate Yoruba II for Graduates</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:142 African and African American Interactions</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:148 The Politics of Southern Africa</td>
<td>3 s.h.</td>
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<tr>
<td>141:157 Peoples and Cultures of Africa</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:158 Myth, Magic, and Mind</td>
<td>3 s.h.</td>
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<tr>
<td>141:159 Anthropology of African Art</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:163 Francophone Literature of the African Diaspora</td>
<td>3 s.h.</td>
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<tr>
<td>141:165 Elementary Zulu I for Graduates</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:166 Elementary Zulu II for Graduates</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:167 Intermediate Zulu I for Graduates</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:168 Intermediate Zulu II for Graduates</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:193 Art of West Africa</td>
<td>3 s.h.</td>
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<tr>
<td>141:194 Art of Central Africa</td>
<td>3 s.h.</td>
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<tr>
<td>141:195 The Arts of the African Diaspora</td>
<td>3 s.h.</td>
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<tr>
<td>141:196 African News Colloquium</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>141:197 African and African American Interactions</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>141:198 Art and Archaeology of Ancient Africa</td>
<td>3 s.h.</td>
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<tr>
<td>141:202 Seminar: Problems in African Art</td>
<td>3 s.h.</td>
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<tr>
<td>141:227 Three African Writers</td>
<td>3 s.h.</td>
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<tr>
<td>141:240 Studies in African Francophone Literature</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Study Abroad**

Studying for a semester or an academic year at an African university is recommended, though not required, for students in the African Studies Program. Two programs are offered through The University of Iowa. The first lasts one semester, the second an academic year.

- **165:821 University of Ibadan (Nigeria) Exchange:**
  - Contact an African Studies Program adviser or the Study Abroad Center for more information.

- **165:105 International Student Exchange Program:**
  - Contact an African Studies Program adviser or the Study Abroad Center for more information.

**Scholarships**

Students are encouraged to apply for a Stanley Undergraduate Scholarship for International Research/Fieldwork through International Programs. The scholarships are awarded 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. The Project for the Advanced Study of Art and Life in Africa (PASALA) also provides scholarships. Other awards are offered through the University of Iowa Study Abroad Center.

**Visiting Scholars and Professionals**

The African Studies Program supports U.S. and international researchers for one month to one year of residence through several funding programs, including the Visiting Research Fellows Program sponsored by International Programs. The program also brings highly qualified nonacademics to campus for extended stays through the Distinguished Visiting Professionals Program, also sponsored by International Programs. These guests present public lectures, seminars, and private consultations with students.
AGING STUDIES

Director:
Affiliated faculty: Kathleen Buckwalter (Nursing), Don D. Coffman (Curriculum and Instruction), Catherine A. Cole (Marketing), Kelly J. Cole (Exercise Science; Health and Human Performance), Jane M. Cowen (Preventive and Community Dentistry), Peter C. Damiano (Preventive and Community Dentistry), Richard C. Dobyns (Family Practice), Lorraine T. Dorfman (Social Work), Ronald E. Espig (Prosthodontics), Rita A. Frantz (Nursing), Kay E. Geller (Music), Vijay K. Goel (Biomedical Engineering), Donald Heidstad (Internal Medicine), Mark Holbrook (Biological Sciences), Albert B. Hood (Counselor Education), Gerald J. Jogerst (Family Medicine), David K. Leslie (Curriculum and Instruction, emeritus), Richard D. MacNeil (Health, Leisure, and Sport Studies), Teresa L. Mangum (English), Cindy Marek (Pharmacy), Rebecca M. Matthews (Sociology), Eleanor McClelland (Nursing), Hermine McLeran (Preventive and Community Dentistry), John R. Menninger (Biological Sciences), Kenneth E. Motley (Health, Leisure, and Sport Studies), Paula Mobly (Nursing), Paul L. Mulhausen (Internal Medicine), Gary E. Rosenthal (General Medicine Clinical Epidemiology and Geriatrics), Margo L. Schilding (Internal Medicine), Deborah Schoenfelder (Nursing), Elizabeth A. Swanson (Nursing), Michael L. Teague (Health, Leisure, and Sport Studies), Toni Tripp-Reimer (Nursing), Judith E. Voelkel (Health, Leisure, and Sport Studies), John S. Wadowsworth (Rehabilitation, Counseling, and Student Development), Robert B. Wallace (Epidemiology), Lisa Walz (Social Work), Thomas H. Walz (Social Work, emeritus), Catherine Watkins (Preventive and Community Dentistry)

Undergraduate nondegree programs: certificate

Certificate program: certificate in Aging Studies

Web site: http://www.uiowa.edu/~agingstp

The Aging Studies Program at The University of Iowa is designed to provide undergraduate and graduate students with a multidisciplinary approach to gerontology. The program consists of courses that have been coordinated and sequenced to provide a broad background in aging for students from various disciplines. All students plan their course of study with their academic advisers in close cooperation with the Aging Studies Program.

Requirements

INTRODUCTORY COURSE


PRACTICUM AND RESEARCH COURSES

Certificate students choose from the following courses in aging studies. The course of study is aging-specific. Graduate students with a multidisciplinary approach to gerontology. The program consists of courses that have been coordinated and sequenced to provide a broad background in aging for students from various disciplines. All students plan their course of study with their academic advisers in close cooperation with the Aging Studies Program.

With the approval of their major department, students may apply course work to their major or professional program of study. Six semester hours must be taken outside the major department. A minimum of 15 semester hours of course work in aging studies must be completed at The University of Iowa.

Students complete an internship or research course in which they must complete 153:230 Aging Studies Colloquium in addition to a research project or practicum course. With the approval of their major department, students may apply course work to their major or professional program of study. Six semester hours must be taken outside the major department. A minimum of 15 semester hours of course work in aging studies must be completed at The University of Iowa.

Students should plan the introductory core course before, or concurrently with, other courses in the program. The research project or the practicum course should not be taken until the first 9 semester hours of the program are completed.

Eligibility

The program is open to all interested undergraduate students, upper-level undergraduates who have completed at least 45 semester hours, and nondegree students whose career interests and needs are served by completing the program.

Students in good standing at the above-mentioned levels may establish study plans with the Aging Studies program assistant, who works with them and their advisers to shape a study plan complementary to their academic program and career interests.

Students should contact the Aging Studies Program to develop an appropriate study plan. The program schedules required courses, recommends the sequence in which course work should be taken, and keeps a record of each student’s approved program and progress. When a student completes an undergraduate degree and fulfills the requirements for the aging studies certificate, the program notifies the registrar, who records completion of the program on the student’s transcript. Holders of Iowa baccalaureate degrees may return to complete the requirements for the certificate.

Graduate students and other students who hold a baccalaureate degree are awarded the certificate when they have completed all certificate requirements.

A student may not be awarded both a minor and a certificate in aging studies.

Programs

Certificate

The certificate in aging studies requires 21 semester hours of approved aging-related courses numbered 100 and above. This agenda-specific course work is defined as University of Iowa courses that focus principally on older persons, the aging process, or social and cultural aspects of aging. They also are required to complete a practicum, internship, or research course in which they earn at least 3 but no more than 6 semester hours. Graduate students must complete 153:230 Aging Studies Colloquium in addition to a research project or practicum course.

*Some, but not all, of the material in these courses deals with aging. Only a portion of the credit fulfills the requirements for the Aging Studies Program. See the program office for details.

Other departmental practicum or research courses are accepted if the content and focus of the course of study is aging-specific.

Students must complete one course in each of the following areas: psychological aspects of aging, biological/health aspects of aging, and social and cultural aspects of aging. Additional courses in aging are selected to meet the 21 semester hours required for the certificate.

Psychological Aspects of Aging

025:139 Music Therapy Techniques:

096:030 (153:030) Human Development and Behavior

096:116 Loss and Death in Clinical Nursing Practice

113:147 Special Topics in Anthropology (cross-cultural perspectives on death, dying, and bereavement)

153:150 (031:150) Psychology of Aging

153:193 (032:193) Suffering, Death, and Faith

153:207 (031:207) Adult Development

Biological/Health Aspects of Aging

003:530 Seminar: Communication Disorders and Aging

028:136 Physical Activity Through the Life Span

153:122 Geriatrics and Health Care for the Elderly

153:133 (028:133) Nutrition Through the Life Span

153:145 (112:145) Introduction to Geriatric Dentistry

153:146 (028:146) Health Promotion for Older Adults

153:160 Biology of Aging

153:165 (003:165) Communication Disorders and Aging

153:166 (028:166) Exercise Programs: Special Populations

153:210 (080:210) Long-Term Care Management

153:410 (096:410) Nursing Research of Biological Phenomenon and Interventions for the Elderly

153:420 (096:420) Geriatric Mental Health Research

153:430 (096:430) Nursing Research in Sociocultural Phenomenon and Interventions for the Elderly

Social and Cultural Aspects of Aging

032:268 (050:167) Readings in Biomedical Ethics

034:269 Seminar: Selected Topics in Family Sociology

042:199 Selected Aspects of Social Work and Social Welfare

153:134 (034:134) Aging in Comparative Perspective

153:163 (032:163) Introduction to Biomedical Ethics

153:168 (028:168) Aging and Leisure

153:169 Representations of Aging
153:185 (042:185) Social Policy and the Elderly 3 s.h.
153:211 (042:211) Individual and Family Development: Life Span 3 s.h.
153:219 (042:219) Aging and the Family 2-3 s.h.
153:222 (042:222) Social Policy Issues in Health Care 3 s.h.

Minor

Undergraduate students in the Colleges of Liberal Arts, Business, Education, Engineering, or Nursing may complete a minor in aging studies by taking 15 semester hours in courses outside of their major department or college. The courses must be approved by the Aging Studies Program; the minor must be approved by the student’s college or department. At least 12 of the 15 semester hours must be taken in advanced courses (100 level or above) at The University of Iowa. Students must have a grade-point average of at least 2.00 in all work in aging studies.

Option for Interdepartmental Studies B.A.

Students in the College of Liberal Arts who would like to design an individualized program in aging studies leading to a Bachelor of Arts must apply and be accepted to the Interdepartmental Studies Program. Entry into the program requires approval of a plan of study that includes at least 15 semester hours of upper-level coursework. Students enrolled in this program also may meet the requirements for a certificate in aging studies.

Courses

153:000 Cooperative Education Internship
Concurrent: 153:196.

153:030 Human Development and Behavior 3 s.h.
Developmental stages of the human organism from conception through senescence; physiological, intellectual, emotional, social factors. Prerequisite: 031:001. Same as 096:030.

153:108 Basic Aspects of Aging 3 s.h.
Social, psychological, and biological aspects; demographics of aging, health, economic issues, primary relationships, social services. Same as 028:108, 042:108, 096:108.

153:110 Growing Old in a New Age 3 s.h.
Process of aging, including physiology, psychological, social aspects; myths of aging; impact of elderly on global demographics; ethical dilemmas of an aging society.

153:122 Geriatrics and Health Care for the Elderly 3 s.h.
Biological and health aspects of aging; major diseases and disorders that affect the elderly; assessment methodologies, health care policies, preventive and health promotion measures; resources.

153:124 Independent Study in Gerontology
arr. Individual projects and/or research. Consent of instructor required.

153:133 Nutrition through the Life Span 3 s.h.
How body processes and nutritional needs change with age and physical state; effects of food-drug medication interactions, anorexia, bulimia, and adolescent pregnancy; emphasis on food and health habits that minimize nutrition-related problems. Prerequisite: 028:150. Same as 028:133.

153:134 Aging in Comparative Perspective 3 s.h.
Sociological foundations of world variation in aging; relationships between societies’ political and economic institutions and their treatment of the aging process. Prerequisite: 034:006 or 034:120 or consent of instructor. Same as 034:134.

153:145 Introduction to Geriatric Dentistry 2 s.h.
Biological, psychological, social aspects of aging; normal aging, disease processes, pathological changes that affect treatment, patient management. Open only to dental hygienists and dental students. Same as 012:145.

153:146 Health Promotion for Older Adults 3 s.h.
Programs, strategies to achieve long-term goal of health promotion; disease prevention; slowing decline of chronic conditions to allow independent, rewarding lives. Same as 028:146.

153:150 Psychology of Aging 3 s.h.
The later years of human life viewed from perspectives of developmental psychology, biology, sociology. Prerequisite: 031:061 or equivalent. Same as 031:150.

153:160 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. Prerequisite: 153:150.

153:163 Introduction to Biomedical Ethics 2-3 s.h.
Ethical dimensions of modern life sciences; emphasis on problems of method. Same as 032:163.

153:165 Communication Disorders and Aging 2 s.h.
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 summer sessions of odd years. Same as 033:165.

153:166 Exercise Programs: Special Populations 3 s.h.
Development, implementation, instruction of exercise programs for special populations. Prerequisite: 028:138 or consent of instructor. Same as 028:166.

153:168 Aging and Leisure 3 s.h.
Status of the well elderly in relation to issues of retirement, use of free time, and factors supporting leisure activity; leisure services in long-term care. Same as 028:168.

153:169 Representations of Aging 3 s.h.
Roles of literature, film, and other forms of popular culture in shaping older adults’ feelings about and experiences of aging.

153:185 Social Policy and the Elderly 3 s.h.
Public social policies, their effect on well-being of elderly, including women and minorities; U.S. policies, those of other nations junior or higher standing required. Prerequisites: 042:145 and introductory course on aging (042:108), or consent of instructor. Same as 042:183.

153:190 Field Work in Gerontology
arr. Opportunities for students in various disciplines to relate their areas of study to elderly; aging; interdisciplinary relationships, approaches to meeting needs of elderly. Consent of instructor required. Same as 028:190.

153:193 Suffering, Death, and Faith 2.3 s.h.
Role of religion with persons suffering from life-changing and life-threatening illness. Same as 028:193.

153:207 Adult Development 3 s.h.
Patterns and processes in adult development; social and personality development, how adult development is manifested, what factors influence it; methodological approaches. Same as 031:207.

153:210 Long-Term Care Management 3 s.h.
Options, organization, delivery in the United States; needs of the long-term care patient; emphasis on management of facilities, such as nursing homes, hospices, specialized care units. Offered by Saturday & Evening Classes. Same as 153:210.

153:211 Individual and Family Development: Life Span 3 s.h.
Injury through senescence; families from their beginnings through their later years; theoretical, methodological issues. Graduate standing required. Same as 028:211.

153:219 Aging and the Family 3 s.h.
Research related to aging and the family; intergenerational relations, marital status, diversity of older families; caregiving; elder abuse; policy issues. Same as 042:219.

153:222 Social Policy Issues in Health Care 3 s.h.
Policy model used to analyze major health policy issues in the United States; health care systems; socioeconomic-political contexts; tendencies, strategies for improving health; remediation, significance for social work profession. Prerequisite: 042:143 or consent of instructor. Same as 042:222.

153:230 Aging Studies Colloquium 1 s.h.
Research topics in gerontology, geriatrics.

153:261 Epidemiology of Aging 1-2 s.h.
Epidemiologic methods for assessing and interpreting the health status of older persons; applications for research studies and public health programs. Offered fall semesters. Prerequisite: 173:160. Same as 173:261.

153:410 Nursing Research of Biological Phenomena and Interventions for the Elderly 3 s.h.
Analysis, evaluation of research on elderly health, aging process; emphasis on methodological issues; appropriate for study of biological phenomena. Doctoral student standing required. Same as 096:410.

153:420 Geriatric Mental Health Research 3 s.h.
Emphasis on program evaluation, geriatric mental health services research, methodological issues. Doctoral student standing required. Same as 096:420.

153:430 Nursing Research in Socio-cultural Phenomena and Interventions for the Elderly 3 s.h.
Sociocultural issues for aging clients, corresponding nursing interventions; theoretical orientations to dynamics of aging; transitions and role changes, social/environmental issues. Doctoral student standing required. Same as 096:430.

AMERICAN INDIAN AND NATIVE STUDIES

The American Indian and Native Studies Program (AINSP) is an interdisciplinary program that focuses on the histories, cultures, languages, literatures, and contemporary legal and political issues of Native Americans of the United States and other indigenous peoples of the Americas. AINSP helps students understand historical and contemporary social issues among indigenous peoples of the Americas. It helps them to acquire expertise for jobs involving cross-cultural work, and to understand ethnic, social, and political diversity. It provides a background for more specialized or advanced work in a variety of social science areas, including anthropology, psychology, geography, economics, education, history, and political science. It also provides preparation for professional training in museum work, health care, business, and law.

Undergraduate Programs

Undergraduate students may earn a certificate or a minor in American Indian and native studies. All students plan their programs in close cooperation with AINSP faculty advisers.

Certificate

Students pursuing the undergraduate certificate in American Indian and native studies must earn at least 20 semester hours in courses chosen from the list of approved AINSP courses,
with a grade-point average of at least 2.00. This course work must include the following:

149:049 Introduction to American Indian and Native Studies 3 s.h. or 149:102 Introduction to American Indian History and Policy 3 s.h. or 149:101 American Indian and Native Studies Seminar 2 s.h. Additional course work, including courses selected from the list of approved AINSP courses (see "Associated Courses") 12 s.h.

Courses applied toward the AINSP certificate also may be used to satisfy General Education Program requirements or the requirements for a major or a minor. However, students may not use more than 6 semester hours of course work from their major to satisfy the AINSP undergraduate certificate. The certificate is awarded only upon completion of a bachelor's degree. Holders of Iowa baccalaureate degrees may return to complete the requirements for a certificate. Students may not earn both a certificate and a minor in American Indian and native studies.

Minor

To earn a minor in American Indian and native studies, students must complete 15 semester hours in courses chosen from the list of approved AINSP courses, with a grade-point average of at least 2.00. At least 12 semester hours must be chosen from University of Iowa upper-level courses. This course work must include the following:

149:049 Introduction to American Indian and Native Studies 3 s.h. or 149:102 Introduction to American Indian History and Policy 3 s.h. or 149:101 American Indian and Native Studies Seminar 2 s.h. Additional course work, including courses selected from the list of approved AINSP courses (see "Associated Courses") 11 s.h.

Students may not use more than 6 semester hours of course work from their major to satisfy the AINSP minor.

Cultural Experience

It is highly recommended, but not required, that students have an in-depth American Indian cultural experience, usually through study or volunteer work, before they complete their undergraduate requirements. Students should consult AINSP faculty advisers about available options. With consent of instructor, academic credit may be earned in 149:195 Directed Cultural Experience.

Graduate Program

Graduate students must apply to the program chair to be admitted to the AINSP graduate certificate program. Students who earned an undergraduate certificate in the program may not receive a graduate certificate. Students pursuing the graduate certificate must earn at least 20 semester hours of credit in courses numbered 100 or above chosen from the list of approved AINSP courses. They also must maintain a grade-point average of at least 3.00 in AINSP courses counted toward the graduate certificate. The courses must include the following:

149:101 American Indian and Native Studies Seminar (taken two semesters) 2 s.h. 149:102 Introduction to American Indian History and Policy 3 s.h. 149:200 Native American Studies 3 s.h. 149:299 Independent Study Project 2 s.h. Additional courses chosen from the list of approved AINSP courses 10 s.h.

The additional 10 semester hours must include courses selected from the list of approved AINSP courses (see “Associated Courses”). However, students may not use more than 6 semester hours of course work from their major field of study to satisfy the AINSP graduate certificate.

Associated Courses

In addition to the courses listed below, courses concerned in part with American Indians or with issues relevant to American Indians may be used as electives to satisfy requirements for the undergraduate certificate, the minor, and the graduate certificate, subject to AINSP faculty approval.

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

ANTHROPOLOGY
113:020 Introduction to Midwestern Prehistory 3 s.h. 113:110 (149:110) Indians of North America 3 s.h. 113:114 Amazonian Indians 3 s.h. 113:117 The Maya 3 s.h. 113:163 Archaeology of Mesoamerica 3 s.h. 113:166 The Aztecs, Their Predecessors, and Their Contemporaries 3 s.h. 113:167 North American Archaeology 3 s.h.

ART AND ART HISTORY
01H:002 Art of Africa, Oceania, and Pre-Columbian America 3 s.h. 01H:104 American Indian Art 3 s.h. 01H:105 Art of Pre-Columbian America (when content is appropriate) 3 s.h.

ENGLISH
008:105 Literature and Culture of 19th-Century America 3-4 s.h. 008:113 Native American Literature 3 s.h. 008:141 Literature and Culture of America Before 1800 3-4 s.h. 008:185 (149:185) Native American Autobiography 3 s.h. 008:241 (131:241) American Indian Women’s Literature 3 s.h. 08G:005 (149:005) Literatures of Native American Peoples 3 s.h.

HISTORY

LAW

NURSING

WOMEN'S STUDIES
131:164 (149:164) American Indian/First Nations Women 3 s.h.

Courses

149:005 Literatures of Native American Peoples 3 s.h. Genres of Native American literature, including oral literature; focus on written literature (fiction, essays, poetry, drama); overview. GE: cultural diversity. Prerequisite: 08G:001. Same as 08G:005.

149:049 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: cultural diversity.

149:101 American Indian and Native Studies Seminar 1 s.h. Historical and contemporary issues. May be repeated. Offered spring semesters.

149:102 Introduction to American Indian History and Policy 3 s.h. American Indian legal history, including history of federal Indian policy, reservations, treaties, sovereignty issues. Offered spring semesters.


149:115 Native North America I: Precontact-1789 3 s.h. Same as 16A:115.

149:116 Native North America II: 1789-Present 3 s.h. Same as 16A:116.

149:120 Native Peoples of the Plains 3 s.h. Prehistoric, historic, and contemporary issues relating to native peoples of the Great Plains.

149:130 Museum Literacy and Historical Memory 3 s.h. Same as 096:130.

149:164 American Indian/First Nations Women 3 s.h. Diversity and complexity of Indian women’s lives; roles of American Indian women in their social, political, and economic settings; methods for writing Indian women’s lives, exploring and recognizing stereotypes regarding Indian women. Same as 131:164.
149:168 American Indians in Film  3 s.h.
Creation and impacts of American Indian images in movies; role of native people in the creative process.

149:170 Native American Law I  3 s.h.
Specialized body of law allocating power and authority in Indian country; sovereignty arrangements, jurisdiction, federal Indian policy, tribal self-governance. Consent of instructor required. Same as 091:319, 144:140.

149:171 Native American Law II  2.3 s.h.
Federal legal doctrines governing Indian ownership and exploitation of resources; Indian real property holdings; Indian land and other resource claims; native cultural artifacts; hunting, fishing, and other food gathering rights; water rights; economic development. Consent of instructor required. Same as 091:334.

149:176 Indigenous Peoples in the International Legal System  arr.
Historical and contemporary development of international law and institutions in relation to Native Americans, other indigenous peoples worldwide. Consent of instructor required. Same as 091:635.

149:185 Native American Autobiography  3 s.h.
Same as 008:185.

149:195 Directed Cultural Experience  arr.
In-depth American Indian cultural experience, such as study or volunteer work, supervised by an AINSP faculty member. Consent of instructor required.

149:197 Independent Study  arr.
American Indians and other indigenous peoples; concepts problems, issues. Consent of instructor required.

149:200 Native American Studies  3 s.h.

149:243 Readings in Social and Cultural History: North American Indians  3 s.h.
Same as 016:243.

149:299 Independent Study Project  arr.
Consent of instructor required.

AMERICAN SIGN LANGUAGE
Chair: Richard Hurtig
Assistant professor: Douglas Baynton
Adjunct instructor: Tim Sheets
Lecturers: Brenda J. Falgier, Kimela Nelson
Web site: http://www.shc.uiowa.edu/asl

The American Sign Language Program provides students with a four-semester course sequence in American Sign Language (ASL) and offers elective courses in ASL. Classroom instruction is supplemented by video materials and interactive software in the Language Media Center. Successful completion of the sequence 158:011-012-013-014 satisfies the College of Liberal Arts General Education Program requirement in foreign language.

Courses

158:011 American Sign Language I  4 s.h.
Conversational skills, basic grammar of ASL, introduction to American deaf culture. First in a four-semester sequence. GE: foreign language.

158:012 American Sign Language II  4 s.h.
Continuation of 158:011, which is prerequisite. Consent of instructor required. GE: foreign language.

158:013 American Sign Language III  4 s.h.
Continuation of 158:012, which is prerequisite. Consent of instructor required. GE: foreign language.

158:014 American Sign Language IV  4 s.h.
Continuation of 158:013, which is prerequisite. Consent of instructor required. GE: foreign language.

158:100 History of the American Deaf Community  3 s.h.
Creation of a distinct language and culture of deaf people in America during the 19th and 20th centuries. Taught in American Sign Language. Prerequisite: 158:014 or consent of instructor. Same as 16A:104.

158:101 Topics In Deaf Studies  3 s.h.
Current topics in deaf studies; skill development in communicative fluency in ASL. Taught in American Sign Language Pre-or corequisite: 158:014 or consent of instructor.

158:102 American Deaf Culture  3 s.h.
Cultural practices, beliefs, and values of the American deaf community. Taught in American Sign Language. Prerequisite: 158:014 or consent of instructor.

158:111 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. Pre- or corequisite: 158:013 or consent of instructor.

AMERICAN STUDIES
Chair: Lauren Rabinovitz
Professors: Richard P. Horwitz, Lauren Rabinovitz (American Studies/Cinema and Comparative Literature), John Raeburn (English/American Studies)
Professor emeritus: Albert E. Stone (American Studies/English)
Associate professors: Jane Desmond (American Studies), Laura Rigal (American Studies/English)
Undergraduate degree: B.A. in American Studies
Undergraduate nondegree program: minor in American Studies
Graduate degrees: M.A., Ph.D. in American Studies
Web site: http://www.uiowa.edu/amstud

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 popular and fine arts, institutions, values, gender and ethnic relations, artifacts, and the everyday life of a diverse citizenry.

Undergraduate Program

Bachelor of Arts

The B.A. program in American studies stresses broad training in cultural analysis and communication. Although there is no explicit vocational training, the program provides preparation for a career in business, education, government, journalism, or social service; for advanced studies in the humanities, the social sciences, theology, or business; or for professional studies in law or medicine. Internships can be arranged.

Required Courses

A distinctive feature of the American Studies major is the opporunity to create an individual plan of study that emphasizes the particular interests the student brings to the study of American culture. Shortly after declaring a major, a student should meet with his or her faculty adviser 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 adviser should have agreed upon a plan of study for completing the major requirements.

The major usually consists of 12 courses totaling 36 semester hours. Students are especially encouraged to complete some courses that reflect the diversity of American culture. Courses in American studies must include 045:020 Sources for American Studies and 045:090 Seminar in American Cultural Studies. Requirements are as follows.

American studies core (four courses, including 045:020 and 045:090)  12 s.h.
American history (two courses)  6 s.h.
Focus area of special interest (six courses in American studies and/or other departments)  18 s.h.

At least 24 semester hours of the major must be earned at The University of Iowa.

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: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: declaration of the major, discussion of a plan of study with an American Studies adviser, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least six courses from the plan of study and at least three-quarters of the semester hours required for graduation

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

Honors

The American studies honors program offers students the opportunity to pursue special interests in individual, in-depth research. Honors candidates in American studies must be members of the University Honors Program. Under the guidance of the undergraduate honors adviser, the honors candidate defines a research project. Project proposals ideally are made by the end of the candidate’s junior year. Each candidate completes the project under the guidance of a supervising faculty member and may register for up to 6 semester hours in 045:095 Honors Project.

Results of the research project are presented in a senior essay to a committee of three faculty members, including the supervising faculty member, the honors adviser, and a third faculty member of the student’s choice. (When the honors adviser is the supervising faculty member, the candidate may select second and
third faculty members.) The candidate’s committee may choose to hear an oral defense of the final project, usually in the 12th week of the student’s last semester.

**Minor**

Students interested in a minor in American studies should consult program faculty members. The minor requires a minimum of 15 semester hours of credit in American studies with a grade-point average of at least 2.00. At least 12 of the 15 semester hours must be taken at The University of Iowa in advanced courses. All courses above 045:001 are considered advanced for the minor.

**Graduate Programs**

**Master of Arts**

The M.A. in American studies may be a terminal degree or a degree preliminary to the Ph.D. in American studies or another discipline. It usually includes 12 courses totaling 36 semester hours. Requirements include the following.

045:200-201 Theory and Practice in American Studies I-II 6 s.h.

Two other courses or seminars in American studies 6 s.h.

In addition, master’s degree students select from five to eight additional courses relevant to a topic or period of cultural history; these courses may be grouped to address more than one topic, and they must be chosen from more than one discipline; they usually include at least two courses in American history and courses that center on American diversity.

Master’s degree candidates must perform satisfactorily in 045:400 Masters Preparation (3 semester hours), which includes a comprehensive examination on course work and basic concepts.

The M.A. also may be taken with thesis, for which a student may receive up to 6 semester hours of credit. Students should consult the program chair for details.

A joint program leading to the M.A. in American studies and the J.D. from the College of Law provides a broad cultural context for the study and practice of law. Similar joint programs can be arranged in other professional fields, including journalism and social work.

**Doctor of Philosophy**

The Ph.D. program in American studies requires a minimum of 72 semester hours of course work, which includes a core of American studies courses in interdisciplinary methods and substantial course work in two major fields. Course requirements are as follows.

045:200-201 Theory and Practice in American Studies I-II (introductory seminars) 6 s.h.

Two or more additional graduate courses or seminars in American Studies 6 s.h.

First major field (at least six courses) 18 s.h.

Second major field (at least six courses) 18 s.h.

Electives 6 s.h.

Dissertation (up to 18 s.h.)

Although American studies Ph.D. candidates are permitted considerable flexibility in planning a program, they must meet certain basic requirements.

The introductory seminars 045:200-201 Theory and Practice in American Studies I-II should be taken as early as possible, one during each of the student’s first two years in residence. The additional American Studies graduate courses provide further models for interdisciplinary inquiry.

The two major fields 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. They also should be designed to emphasize a generous yet well-defined period of American cultural history; therefore historical knowledge is essential to all doctoral plans of study. The two major fields may, and usually should, bear an intellectual relationship with one another.

The program expects doctoral students to address the cultural diversity of American life in their course work and reading.

**ADMISSION TO PH.D. CANDIDACY**

The department stresses the importance of advising. Each doctoral student and his or her faculty adviser map out a coherent plan of study that reflects the student’s particular interests in American cultural studies. Usually this plan of study is formulated tentatively by the end of the first year in residence. During the first semester of the second year, the student submits the plan to the entire faculty, who review it and then meet with the student to discuss it. When the faculty accepts the plan of study, the student is admitted to Ph.D. candidacy. In the next three or four semesters he or she completes the established plan and begins to prepare for comprehensive examinations.

**COMPREHENSIVE EXAMINATIONS**

The comprehensive exam comprises three written portions and an oral examination. Two of the written examinations explore the student’s major field. These are at least four hours in length but may, at the examiner’s discretion, be given on a take-home basis.

The third written exam, the position paper, is always written in advance of the rest of the exam and under the supervision of an American studies faculty member. In it, the student lays out his or her general approach to American cultural studies and provides an exemplification of that approach.

The oral examination covers material from the two written exams and the position paper.

**THESIS**

The final requirement for the Ph.D. in American studies is presentation of an acceptable thesis on an interdisciplinary topic whose investigation involves more than one field or discipline.

**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, Living History Farms, the Herbert Hoover National Historic Site, and the Putnam Museum. With special permission, candidates conducting research during such on-the-job training may receive academic credit through 045:320 Independent Study or 045:350 Material Culture Internship. Other internships in social agencies, government, or business also may be arranged.

**Courses**

**Primarily for Undergraduates**

045:000 Cooperative Education Internship 0 s.h.

045:001 American Values 3 s.h. Representative texts, artifacts, cultural values in historical and contemporary perspective. GE: humanities.

045:005 American Issues 3 s.h. Representative issues: radio and American culture; cultural history of the Civil War era; American history, literature, culture.

045:020 Sources for 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.

045:030 Introduction to African American Culture 3 s.h. GE: cultural diversity or humanities. Same as 129:061.

045:044 Lesbian Lives in the U.S. 3 s.h. Same as 131:044.

045:065 American Places 3 s.h. The West, the South, images of city or road in American culture.

045:070 Popular Arts and Entertainment in the U.S. 3 s.h. Rock ‘n’ roll, jazz, humor, sport, radio.

045:072 Film and American Culture 3 s.h. How American movies reflected and helped shape American culture between 1925 and 1975; their relationship with historical and social change; economic and artistic system of Hollywood filmmaking.

045:075 American Music 3 s.h. Cultural, historical study of rock ‘n’ roll, jazz, blues, country and western, folk music.

045:085 America as a Foreign Country 3 s.h. American features and circumstances that draw attention from non-Americans.

045:090 Seminar in American Cultural Studies 3 s.h. Interdisciplinary perspectives on a single theme or period.

045:095 Honors Project arr. Independent interdisciplinary research, writing.

**For Undergraduate and Graduate Students**

045:100 Independent Study arr. Consent of instructor required.

045:115 American Culture of the 1930’s 3 s.h. The Great Depression through historical records, literature, photography, movies, other arts; emphasis on expression of American life and thought, social and cultural experience.

045:123 American Literature and History 3 s.h. Examination of fictional histories (novels about history), their relationship to historical interpretation. Same as 008:123.
045:130 Dance in American Culture 3 s.h. Social, popular, theatrical forms since the 1960s; emphasis on relationships between aesthetics, the body, cultural politics. Same as 131:130.

045:140 The Cultures of American Women 3 s.h. Topics in women's experiences; emphasis on relationship between individual lives, broad social and cultural context. Same as 131:140.

045:150 Topics in American Cultural Studies 2-4 s.h. Special topics in American history, literature, culture.

045:152 Fairs and Amusement Parks 3 s.h. Nineteenth- and 20th-century international expositions, amusement parks, and theme parks as cultural events of U.S. self-definition.

045:156 Arts in America 3 s.h. Relationship of the arts to their cultural Context and to popular culture; focus on contemporary arts (e.g., music, dance; visual arts, theater, literature).

045:157 Gender on Stage 3 s.h. How gendered bodies and roles are displayed on stage; popular, elite, experimental, traditional, and media theatre, dance, music; performance in everyday life; theorizing spectatorship, politics of drag, feminist theatre. Same as 131:157.

045:158 Technology and American Culture 3 s.h. Technological change in relation to culture.

045:159 American Culture and the Environment 3 s.h. Cultural criticism of biological/ecological systems.

045:160 America as a Consumer Culture 3 s.h. Division of business, social relations, technology, marketing; their effect on images and ideas in American culture.

045:161 Museums and the Politics of Representation 3 s.h. Types of museums (natural history, art, ethnic, social history, etc.) at national, regional, local levels.

045:174 The American Vacation 3 s.h. Weekends, holidays, vacations as bounded time-outs invested with cultural significance; history, ideology of these time-outs with particular attention to how race, class, and gender shape experiences and meanings. Same as 028:179.

045:185 International Views of America 3 s.h. Development of nationalism, political movements.

045:193 American Photography 3 s.h. Popular and art photographs as expressions of American life.

045:194 American Film and Video 3 s.h. Topics in history, interpretation, criticism of U.S. movies, television, video art.

045:198 American Communities 3 s.h. Studies of selected peoples and places in America: emphasis on books in anthropology, history, journalism, sociology and on documentary film.

045:199 Interviewing Americans 3 s.h. Contemporary Americans through interviews; questioning and recording techniques, ethnographic writing. Same as 113:106.

045:200 Theory and Practice of American Studies I 3 s.h. Theories, methods, cases in culture studies; emphasis on social science approaches. Graduate standing in American studies or consent of instructor required.

045:201 Theory and Practice in American Studies II 3 s.h. Graduate standing in American studies or consent of instructor required.

045:210 Introduction to Research in African American Culture 3 s.h. Same as 129:211.

045:220 Readings in American Culture 3 s.h. Major texts.

045:240 Women and Television in American Culture 3 s.h. Same as 356:240, 131:240.

045:250 Seminar in Theories of Culture 3 s.h. 045:260 Seminar: History, Literature, and American Culture 0-5 s.h.

045:261 Historical Approaches to U.S. Culture 4 s.h. Developments in American cultural history, such as urbanization, growth of mass media, pluralism, assimilation.

045:269 Readings on the American South: Gender and Race in American History 3 s.h. Same as 016:269.

045:275 Politics and American Culture 3 s.h. Roles of power, political institutions, ideologies, contexts, periods, themes. Graduate standing required.

045:287 Writing for Publication 3 s.h. How to develop an individual research project into a publishable article. Second-year graduate standing required.

045:293 Seminar in American Visual Culture 3 s.h. Visual expression, its relation to cultural history.

045:300 American Film and American Culture 3 s.h. Relationships between film and culture as developed in a particular approach, period, subject. Same as 550:300.

Independent Study

The following courses require consent of instructor.

045:320 Independent Study 3 s.h. 045:350 Material Culture Internship 0-5 s.h. Independent work in the field or in a field school, curating or interpreting material culture.

045:360 American Studies Pedagogy 0-5 s.h. First teaching experience or preparation of new course.

045:400 Masters Preparation 0-3 s.h. Writing for M.A. exam. Open only to candidates for M.A. in American Studies without thesis.

045:450 M.A. Thesis 0-5 s.h.

045:500 American Studies Position Paper 3 s.h. Writing for the Ph.D. comprehensive exam.

045:600 Ph.D. Thesis 3 s.h.

ANTHROPOLOGY

Chair: Russell L. Crocohn
Professor emerita: June Helm
Adjunct professors: Melanie Dreher, Toni Tripp
Reimer, Larry J. Zimmerman
Associate professors: Florence E. Babh, James Enloe, Laura Graham, Douglas Midgett, Scott Schnell, Mary Wheelan
Adjunct associate professors: John Scott Allen, William Green, Kevin Kelly, Alfreta Monagan, Rachelle Saltzman
Assistant professors: Rudolf Colloredo-Mansfeld, Robert Franciscus, Glenn Storey
Adjunct assistant professors: John Doershuk, Rachelle Saltzman
Adjunct associate professors: John Doershuk, Stephen C. Lensink, Maureen McCue
Undergraduate degree: B.A. in Anthropology
Undergraduate nondegree program: minor in Anthropology
Graduate degrees: M.A., Ph.D. in Anthropology
Web site: http://www.uiowa.edu/anthro

Anthropology is the study of human beings in all walks of life, in all kinds of societies, in all parts of the world, and at all points in time. The discipline's four major subfields have important connections to the other social sciences, the physical and biological sciences, the arts, and the humanities.

Anthropology offers a framework for understanding the place of human beings in relation to the natural environment and to the myriad social and cultural worlds that humans have created. It provides insight into our biological and cultural evolutionary background; our economic, social, and political organization; our cultural and symbolic systems; the prehistoric and historic development of our social systems; and the interrelations among our individual selves, our societies, and the canons of thought and feelings we share with others.

Undergraduate Program

Students who earn a B.A. in anthropology receive a broad liberal arts education that provides excellent preparation for a variety of careers. They gain special understanding of human relations and expertise for jobs involving international or cross-cultural work, and social and ethnic diversity in the United States. Upon graduation, anthropology majors embark on careers in government work, international affairs, gerontology, urban and regional planning, social work, museum work, and education. Many become Peace Corps or Vista volunteers or work for international nongovernmental organizations. Others pursue graduate study in anthropology, other social science disciplines, or professional schools (health care, law, business).

The major requires at least 30 semester hours of course work in anthropology, of which at least 15 must be earned at The University of Iowa. Correspondence credit may be used toward major requirements only with special permission from the director of undergraduate study. No more than 9 semester hours of correspondence credit is accepted toward major requirements.

Requirements include the following.

113:003 Introduction to the Study of Culture and Society 3-4 s.h. or 113:010 Anthropology and Contemporary World Problems 3 s.h.

113:012 Introduction to Prehistory 3 s.h.

113:013 Human Origins 3 s.h.

113:014 Language, Culture, and Communication 3 s.h.

One 100-level course in archaeology (area I or topical) or biological anthropology

One 100-level course in sociocultural or linguistic anthropology

One 100-level course in ethnology

Anthropology electives offer a wide range of choices, including courses dealing with language and culture, medical anthropology, religious activity in folk and tribal settings, gender, biological anthropology, identity, expressive culture (art, verbal arts, literature, music, and dance), human prehistory, human evolution, environment and culture, and urban anthropology. Department faculty members offer ethnology courses on Africa, China, Oceania, Southeast Asia, the Middle East, Latin America, the Caribbean, Japan, and Native North America.

The undergraduate program is designed to give students the broadest possible cross-cultural background; specialization is discouraged.
Course work is encouraged in related disciplines such as sociology, linguistics, geology, geography, history, art history, psychology, biological sciences, museum studies, and foreign languages. Students are also encouraged to participate in archaeological field and laboratory research and in biological and linguistic anthropology research.

**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: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least two courses in the major and one-half of the semester hours required for graduation

Before the seventh semester begins: at least six courses in the major and at least three-quarters of the hours required for graduation

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

**Honors**

The honors program in anthropology is open to students with a cumulative grade-point average of 3.20 or higher, both overall and in anthropology. In addition to the regular requirements for a major in anthropology, honors students complete an honors research seminar, a graduate-level course, and an honors research project. Consult the department honors adviser for more information.

**National Honor Society**

The department sponsors a chapter of Lambda Alpha National Collegiate Honors Society. Students who have a cumulative grade-point average of 3.20 or higher are eligible to enroll. Consult the departmental honors adviser for more information.

**Minor**

To minor in anthropology, students must complete 15 semester hours in anthropology with a grade-point average of at least 2.00. At least 12 semester hours must be taken at The University of Iowa in courses numbered 113:100 and above.

**Graduate Programs**

**Master of Arts**

The M.A. program consists of two program tracks: general anthropology (thesis or nonthesis), which is designed to prepare students to deal with any aspect of anthropology at an introductory level, and feminist anthropology (thesis or nonthesis). The degree is designed to be awarded to students after two years in the graduate program. All students, except those who choose to earn only a master’s degree, are admitted to the Ph.D. program. Students who intend to pursue a Ph.D. in anthropology have two program options for graduate study: general anthropology and feminist anthropology.

Requirements for the program in feminist anthropology are more specific than those for the program in general anthropology.

The number of semester hours required for the M.A. in general or feminist anthropology varies from 30 to 36, depending on the student’s previous anthropological training.

No more than 9 semester hours earned in courses outside of anthropology may be applied toward the M.A. in anthropology.

**General Anthropology**

All students are required to take 113:210 Anthropological Data Analysis or another statistics course during the first three years of graduate study. Students who plan to pursue a Ph.D. are encouraged to take this course as part of their master’s work.

**CORE COURSES**

One course from each of the following groups (total of 12 semester hours)

<table>
<thead>
<tr>
<th>Sociocultural Anthropology</th>
<th>113:201 Seminar: Anthropological Theory (for those who were undergraduate majors) 3 s.h.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>113:220 Seminar: Feminist Anthropology (note prerequisites) 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:240 Seminar: Sociocultural Anthropology 3 s.h.</td>
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<tr>
<td></td>
<td>113:246 History of Anthropology 3 s.h.</td>
</tr>
<tr>
<td>Linguistic Anthropology</td>
<td>113:171 Anthropological Linguistics 3 s.h.</td>
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<tr>
<td></td>
<td>113:172 Language and Culture 3 s.h.</td>
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<td></td>
<td>113:174 Ethnography of Communication 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:273 Seminar: Language and Gender 3 s.h.</td>
</tr>
<tr>
<td>Archaeology</td>
<td>113:164 Comparative Prehistory 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:268 Seminar: Archaeological Theory and Method 3 s.h.</td>
</tr>
<tr>
<td>Biological Anthropology</td>
<td>113:220 Seminar: Feminist Anthropology 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:141 History of Feminist Anthropology 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:154 Anthropologies and Sexualities 3 s.h.</td>
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<td></td>
<td>113:175 Gender and Development Studies 3 s.h.</td>
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<td></td>
<td>113:182 Women, Health, and Healing 3 s.h.</td>
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<td>113:221 Seminar: Feminist Ethnography 3 s.h.</td>
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<tr>
<td></td>
<td>113:223 Feminist Medical Anthropology 3 s.h.</td>
</tr>
</tbody>
</table>

**ELECTIVES**

Students must successfully complete at least 12 more semester hours of course work during their first two years of study. These electives should be selected in consultation with the student’s adviser and committee members. Elective work may include courses in other disciplines, directed study, or up to 6 semester hours of thesis credit (if applicable).

**Feminist Anthropology**

All students are required to take 113:210 Anthropological Data Analysis or another statistics course during the first three years of graduate study. Students who plan to pursue a Ph.D. are encouraged to take this course as part of their master’s work.

**CORE COURSES**

Students must demonstrate proficiency in all four of the following knowledge categories, normally accomplished by taking the courses listed. However, other approved core courses (see “Core Courses” under “General Anthropology”) may be substituted, with approval of the feminist anthropology program faculty. Exemptions also may be permitted with approval of both the program faculty and the departmental faculty.

Students take one course from each of the following groups, for a total of 12 semester hours.

<table>
<thead>
<tr>
<th>Sociocultural Anthropology</th>
<th>113:220 Seminar: Feminist Anthropology 3 s.h.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linguistic Anthropology</td>
<td>113:273 Seminar: Language and Gender 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Students who wish to substitute 113:172 Language and Culture or 113:174 Ethnography of Communication may petition the feminist anthropology program faculty.</td>
</tr>
<tr>
<td>Archaeology</td>
<td>113:164 Comparative Prehistory 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:268 Seminar: Archaeological Theory and Method 3 s.h.</td>
</tr>
<tr>
<td>Biological Anthropology</td>
<td>113:290 Feminist Perspectives on Biology and Culture 3 s.h.</td>
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<tr>
<td></td>
<td>Students who wish to substitute 113:285 Seminar: Biological Anthropology may petition the feminist anthropology program faculty.</td>
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<td>Electives</td>
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<td>Two of these: 113:105 Motherhood and Reproduction 3 s.h.</td>
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<tr>
<td></td>
<td>113:141 History of Feminist Anthropology 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:154 Anthropologies and Sexualities 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:175 Gender and Development Studies 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:182 Women, Health, and Healing 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:221 Seminar: Feminist Ethnography 3 s.h.</td>
</tr>
<tr>
<td></td>
<td>113:223 Feminist Medical Anthropology 3 s.h.</td>
</tr>
</tbody>
</table>

Electives must be completed during the first two years of study. Other courses may be substituted with approval of the feminist anthropology program faculty.

Students must successfully complete at least 12 more semester hours of course work during their first two years of study. These electives should be chosen in consultation with the student’s adviser and committee members. Elective work may include courses in other disciplines, directed study, or up to 6 semester hours of thesis credit (if applicable).
Doctor of Philosophy

The Ph.D. represents a balance between general focus on the student's research interests, the competence in all subfields of anthropology obtained at the M.A. level and professional specialization and competence for independent research and teaching in one of four subfields (sociocultural anthropology, linguistic anthropology, archaeology, and biological anthropology).

All doctoral candidates are required to carry out original anthropological research. To insure focus on the student's research interests, the department has designed an integrated process of simultaneous preparation of reading lists, research proposals for submission to granting agencies, a dissertation proposal, and preparation of position papers (see "The Comprehensive Process"). Upon the successful completion of position papers, which is reported to the Graduate College as successful completion of comprehensive examinations, the student becomes a candidate for the Ph.D., does dissertation research, writes a dissertation, and defends it to complete the degree.

REQUIRED COURSE WORK

The doctorate requires a minimum of 72 semester hours beyond the B.A.

Students should take all lecture courses and seminars that are relevant to the areas they intend to cover in their position papers. A maximum of 18 semester hours earned in non-anthropology courses may be counted toward the 72 semester hours required for the Ph.D., including the maximum 9 semester hours that can be counted toward the master's degree.

Students must not rely heavily upon independent study courses.

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

113:201 Seminar: Anthropological Theory 3 s.h.
113:205 Reading French Theorists 3 s.h.
113:220 Seminar: Feminist Anthropology 3 s.h.
113:240 Seminar: Sociocultural Anthropology 3 s.h.
113:241 Economic Anthropology 3 s.h.
113:244 Semiotics: Interpreting Signs in Language and Culture 3 s.h.
113:246 History of Anthropology 3 s.h.
113:250 Theoretical Approaches to Ritual 3 s.h.
113:171 Anthropological Linguistics 3 s.h.
113:172 Language and Culture 3 s.h.
113:174 Ethnography of Communication 3 s.h.
113:191 Structure of Mayan Languages 3 s.h.
113:244 Semiotics: Interpreting Signs in Language and Culture 3 s.h.
113:273 Seminar: Language and Gender 3 s.h.

Archaeology

113:268 Seminar: Archaeological Theory and Method 3 s.h.
113:269 Post-Pro cessual Archaeology 3 s.h.

Biological Anthropology

113:165 Human Variation 3 s.h.
113:169 Human Evolutionary Anatomy 3 s.h.
113:187 Human Evolution 3 s.h.
113:188 Primat e Behavior, Ecology, and Evolution 3 s.h.

FOREIGN LANGUAGE

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

THE COMPREHENSIVE PROCESS

The process of working toward a Ph.D. consists of several phases after the completion of work toward the master's degree. Students work closely with their committee at all stages.

Immediately after completing their master's degree work, students begin consultations with their committee and start to compile an annotated bibliography of works relevant to their intended research program. (The bibliography is a working document for the student’s use throughout the Ph.D. program; it does not require formal review.)

After completing 45 semester hours of graduate study (but not later than the sixth semester), the student drafts research proposals for the program of dissertation research. After working to refine a proposal and completing at least 54 semester hours of graduate study (but not later than the seventh semester), the student submits the research proposals to funding agencies, prepares a formal dissertation prospectus, and defends it before his or her Ph.D. committee by the end of the semester.

After 63 semester hours of graduate study (but not later than the eighth semester), the student completes two position papers: one in the area specialization and one in the primary topical area. (In some fields, e.g., biological anthropology, a geographical area may not be relevant.) The committee then prepares questions in consultation with the candidate.

Upon mutual agreement by the student and the doctoral committee, the position papers may be written prior to the research proposal.

DISSERTATION

Students usually conduct dissertation research after they complete the comprehensive process. Dissertations are usually based on fieldwork, but some are based on data from archival collections, laboratory projects, collections, or other source materials.

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 central Mexico, France, or at various sites in the Midwest. Occasional fieldwork in East and Southeast Asia is available to graduate students in the paleoanthropology research program.

Admission

Applicants for admission to the graduate program in anthropology are considered regardless of their previous field of training. Admission to the department's graduate program may be at either the M.A. or Ph.D. level; however, full admission to the Ph.D. program depends on successful fulfillment of all department requirements.

Any student with an M.A. in general anthropology or feminist anthropology from The University of Iowa may apply for admission to the Ph.D. program. Admitted students who have earned an M.A. in anthropology from another institution may proceed directly to a specialized Ph.D. program.

An applicant with an M.A. in another discipline must seek admission as a first-year graduate student and complete necessary background courses in anthropology before proceeding to the Ph.D. The number of such courses is determined on a case-by-case basis, depending on each student's prior training.

Applicants for admission to the graduate program must meet the general admission requirements of the Graduate College (see the Graduate College section of the Catalog) and are required to submit the following:

- a completed University application form;
- transcripts of all previous undergraduate and graduate work;
- three letters of recommendation from individuals competent to judge the applicant's potential for graduate training;
- scores from the aptitude portion of the Graduate Record Examination (GRE) Aptitude Test; and
- at least one written example of previous work (for example, a term paper).

Applicants with an M.A. from another university must submit a copy of their master’s thesis; applicants who earned an M.A. without thesis or whose thesis is not yet complete should submit written copies of three papers completed in graduate school.

Applicants ordinarily must have a grade-point average of 3.00 or higher. Applicants with lower grade-point averages may be admitted with conditional status if other criteria indicate strong potential for graduate work.

Financial Support

Financial aid awards for incoming students are limited and highly competitive. Most graduate students receive financial aid in the form of teaching and research assistantships during a portion of their studies at Iowa. Application for awards should be made directly to the director of graduate studies.
Facilities
The Department of Anthropology has access to the Iowa Archaeological Collections through the Office of the State Archaeologist and maintains its own archaeological collections (Midwest prehistoric and historical and comparative faunal material).

The department also maintains a documented human osteology teaching collection amassed by the University of Iowa College of Medicine and jointly maintained with the Office of the State Archaeologist. It holds a substantial documented human osteology research collection originally from Stanford University’s medical school.

Individual faculty members maintain field laboratories and conduct research outside the United States, maintaining ties with research institutions in foreign countries, including the Teotihuacan Archaeological Research Facility, in Mexico, and the Laboratoire d’Ethnologie Préhistorique et du Centre de Recherches Archéologiques at Verberie, in France.

The department also has well-equipped laboratories for the study of archaeology, biological anthropology, and linguistic anthropology.

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, Mesoamerica, the Middle East, Pacific Islands, South America, and the United States. Recent field research has been conducted in Austria, Belgium, Brazil, the eastern Caribbean, China, Croatia, Czech Republic, Ecuador, France, Germany, Great Britain, Greece, Guatemala, Hungary, India, Indonesia, Israel, Italy, Japan, Kenya, Mexico, Micronesia, Monaco, Myanmar (formerly Burma), Nicaragua, Papua New Guinea, Peru, Portugal, Russia, South Africa, Tanzania, the United States, and Vietnam.

Current faculty research topics include paleoanthropological investigations of Pleistocene karst caves in China and northern Vietnam; geological and paleoanthropological field surveys of the Fló-Flésticico Sangiran Dome, Java; precontact state systems and the historical archaeology of the Valley of Mexico; faunal and spatial analyses from Paleolithic sites in France and Ukraine; analysis of Early Upper Paleolithic human skeletal remains from the Abrigo do Lagar Velho, Portugal; archaeological and paleoentomological study of Middle Stone Age deposits at Flörisbad, South Africa; Neandertal and early modern human craniofacial functional anatomy; comparative syntax and Mayan languages; language politics in Guatemala; Peruvian underdevelopment and consequences for women workers; patterns of political and economic development of emerging nations; economic decision making among Mexican artisans; material culture and politics of consumption, Andean peoples and cultures, indigenous movements; women in socialist societies; alcohol and drug studies; West Indian migrants in London; political economy of the eastern Caribbean; cultural politics, ethnicity, semiotics, and critical discourses in the United States, the Middle East, and Hawaii; language and gender, and expressive culture and performance in the Brazilian Amazon; and ritual and social change in Japan.

Courses
For Undergraduates

113:000 Cooperative Education Internship 0 s.h.
113:003 Introduction to the Study of Culture and Society 3.4 s.h.
113:010 Anthropology and Contemporary World Problems 3 s.h.
113:012 Introduction to Prehistory 3 s.h.
113:013 Human Origins 3 s.h.
113:014 Language, Culture, and Communication 3 s.h.
113:020 Introduction to Midwestern Prehistory 3 s.h.
113:029 First-Year Seminar 1-2 s.h.
113:075 Individual Study 1-3 s.h.
113:101 Sociology of the Third World 3 s.h.
113:209 Research Design and Proposal Writing 3 s.h.
113:210 Anthropological Data Analysis 3 s.h.
113:246 History of Anthropology 3 s.h.

For Graduates

113:147 Special Topics in Anthropology 3 s.h.
113:149 Special Topics in Anthropology 2-3 s.h.

Ethnology

113:104 Inside/Outside The Middle East 3 s.h.
113:106 Interviewing Americans 3 s.h.
113:110 Indians of North America 3 s.h.
113:112 Roots and Margins of Latin America 3 s.h.
113:113 Africans in the New World 3 s.h.
113:114 Amazonian Indians 3 s.h.
113:115 Japanese Values through Literature and Film 3 s.h.
113:116 Japanese Values through Literature and Film 3 s.h.
113:117 The Maya 3 s.h.
113:118 Social Anthropology of the Caribbean 3 s.h.
113:125 Japanese Society and Culture 3 s.h.
113:127 Ethnology of Oceania 3 s.h.

Advanced Courses

General Anthropology

113:103 Introduction to Museology 3 s.h.
113:147 Special Topics in Anthropology 2-3 s.h.
113:148 Special Topics in Anthropology 3 s.h.
113:149 Special Topics in Anthropology 2-3 s.h.
113:151 Sociology of the Third World 3 s.h.
Sociocultural Anthropology

113:105 Motherhood and Reproduction 3 s.h.
Motherhood and reproduction in feminist theory and scholarship viewed through various disciplines. Same as 131:142.

113:108 Health and Cultural Diversity 3 s.h.
Cross-cultural perspectives on dynamics of health, illness. Prerequisite: 113:003 or consent of instructor. Same as 096:172, 152:108.

113:109 Literature and Anthropology 3 s.h.
Topics vary. Same as 088:151, 048:151.

113:111 Drugs: Medical Anthropological Perspectives 3 s.h.
Survey of worldwide variety in human drug use, patterns of consumption, associated cultural beliefs, physiological and psychological effects, beneficial and detrimental health consequences; both traditional and modern, legal and illegal drugs. Prerequisite: 113:003 or 113:010 or consent of instructor.

113:116 Self and Others 3 s.h.
Cultural theory, theoretical discussions of social identity; processes of social differentiation, categorization; sociological histories, consequences; contextualization of U.S. notion of ethnicity, race, nation, class, gender, culture. Junior or higher standing or consent of instructor required.

113:119 Urban Anthropology 3 s.h.
Cross-cultural approach; emphasis on urbanizing processes, migration and adaptation, aspects of class and ethnicity in urban settings, urban economic relations. GE: social sciences.

113:122 Artisans and Global Culture 3 s.h.
Stenforseness of skilled manual work in global culture: techniques, economies, history of modern handcrafts; politics of indigenous artisans. Prerequisites: 113:003 or consent of instructor.

113:123 Teaching Anthropology 3 s.h.
Designed for classroom teachers to facilitate teaching of anthropology to students; hands-on approach utilized to understand major ideas and assist in teaching concepts to students. Same as 075:123.

113:135 Work and Society 3 s.h.
How work is organized in society; social relations characteristic of different modes of production; case studies of foraging, peasant, advanced capitalist societies. Junior or higher standing in anthropology or consent of instructor required.

113:136 Applied Anthropology 3 s.h.
Practical, historical, environmental, and social problems viewed through an anthropological framework; how anthropological approaches are used to recognize and address applied problems. Same as 175:136.
113:161 Old World Paleolithic Prehistory 3 s.h.
Hominid occupation of Old World during Pleistocene; hominid fossils, artifacts, settlement patterns, climatic reconstruction, evolutionary processes; survey and evaluation. Prerequisites: 113:012 and 113:108, or consent of instructor.

113:162 Laboratory Methods in Archaeology arr.
Materials recovered by excavation; survey training. Consent of instructor required.

113:163 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. Prerequisite: 113:012 or graduate standing in anthropology or consent of instructor.

113:164 Comparative Prehistory 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. Prerequisite: 113:012 or graduate standing in anthropology or consent of instructor.

113:166 The Aztecs, Their Predecessors, and Their Contemporaries 3 s.h.
Background for development of Aztec state, nature of civilization encountered by Spaniards in 1519, contemporary peoples affected by Aztecs. Prerequisite: 113:012 or graduate standing in anthropology or consent of instructor.

113:167 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.

113:168 Method and Theory in Archaeology 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. Prerequisite: 113:012.

113:177 Quaternary Seminar 1 s.h.
Paleoecology, palaeoclimatology, archaeology, geomorphology, glacial geology, other fields dealing with environments of the past 2.5 million years. Same as 102:174.

113:178 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. Graduate standing or consent of instructor required.

113:189 Zoonarchaeology 3 s.h.
Faunal analysis, including taxonomy and identification; skeletal anatomy, taphonomy, population studies, aging and sexing specimens, economic anatomy, butchery studies, breakage and cut marks, food sharing Prerequisite: upper-level archaeology course.

113:192 The Archaeology of Ancient Greece 3 s.h.
Archaeology and ethnohistory of the Greek world, from end of Bronze Age to late Roman Empire; sociocultural processes that influence development and persistence of Greek civilization. Prerequisite: 113:012 or 113:013 or consent of instructor. Same as 014:195.

113:193 Special Topics in Archaeology 3 s.h.

113:194 Roman Archaeology 3 s.h.
Archaeology and ethnohistory of Roman civilization from Iron Age 5th century occupation of the Palatine Hill to the end of the Roman empire in the West. AD. 476. Prerequisite: 113:012 or 113:013 or consent of instructor. Same as 020:194.

113:196 Advanced Field Research in Archaeology arr.
Late Upper Paleolithic site in France; advanced excavation techniques appropriate to well-preserved faunal remains and intact site structure; emphasis on computer-assisted surveying, faunal identification, lithic technology. Prerequisite: introductory field school or equivalent.

113:198 Special Topics in Archaeology 3 s.h.

113:199 Field Research in Archaeology arr.
Beginning skills in site surveying and excavation, lab work, record keeping at nearby prehistoric sites.

113:266 Practicum: Cultural Resource Management arr.
Cultural resource management (CRM) in the Office of the State Archaeologist (Iowa); CRM management practices for scientific and business endeavors. Consent of instructor required.

113:268 Seminar: Archaeological Theory and Method 3 s.h.
Development, current status of theory, method in Americanist archaeology. Anthropology graduate standing or consent of instructor required.

113:269 Post-Processual Archaeology 3 s.h.
Recent advances in archaeology theory that emphasize symbolic and structural archaeological interpretation, interpretative archaeology (post-modemist), Marxist archaeology, feminist archaeology; ethical concerns about how archaeology creates the past. Consent of instructor required.

113:165 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.

113:169 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. Prerequisite: 113:190 or consent of instructor.

113:187 Human Evolution 3 s.h.
From earliest fossil record of apes to origin and diversification of hominid family and appearance of Homo sapiens; evidence from paleontology, comparative anatomy, biomolecular studies, archaeology considered from evolutionary perspective. Prerequisite: 002:131 or 012:121 or 113:013 or consent of instructor.

113:188 Primate Behavior, Ecology, and Evolution 3 s.h.
Origin, diversification of the primate order through fossil evidence; morphology, systematics, behavior, ecology of living species. Prerequisite: 002:131 or introductory course in physical anthropology or equivalent.

113:190 Human Osteology 3 s.h.
Normal and pathologic human osteology; application to demographic, epidemiological analyses in archaeological investigations.

113:195 Laboratory Methods in Biological Anthropology arr.
Specimen preparation, cataloging, moulding and casting, photography, computer analyses, library research. Consent of instructor required.

113:197 Modern Human Origins 3 s.h.
Cave at data and theory regarding emergence of anatomically modern humans 50,000-150,000 years ago; emphasis on fossil record, genetics, evolutionary biology, ecology. Prerequisite: 113:013 or consent of instructor.

113:285 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. Graduate standing in anthropology, biological sciences, or related department or consent of instructor required.

113:290 Feminist Perspectives on Biology and Culture 3 s.h.
Physical anthropology and prehistoric archaeology from a feminist perspective; emphasis on investigation of gender, rising gender identities and relations, including domination and subordination; theoretical perspectives, methodological approaches that have shaped thought on the language and gender nexus. Prerequisites: 113:171 or 113:172 or 113:220 or 113:220 or consent of instructor. Same as 113:221.

113:176 Honors Research 2-4 s.h.
Project chosen in consultation with honors adviser. May be repeated.

113:183 Independent Study arr.
Consent of instructor required.

113:186 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. Open only to anthropology honors students. Pre-requisite: 113:176.

113:380 Pre-Comprehensive Research arr.

113:383 Independent Study: Anthropology arr.

113:384 Research: Anthropology arr.

113:385 Thesis arr.

APPLIED MATHEMATICAL AND COMPUTATIONAL SCIENCES
Faculty members and students in the College of Liberal Arts participate in the Applied Mathematical and Computational Sciences Program. For information about the program, see the Graduate College section of the Catalog.

113:171 Anthropological Linguistics 3 s.h.
Structures of spoken languages; emphasis on techniques for analyzing linguistic data; history, phonetics, phonology, morphology, syntax. Same as 103:171.

113:172 Language and Culture 3 s.h.
Language in relation to organization, variation, change in culture and society. Prerequisite: 113:171; or introductory course in linguistics and general sociocultural anthropology, or consent of instructor. Same as 103:170.

113:173 Language and Gender 3 s.h.
Gender-related language variation; current research on gender-specific linguistic forms and usage in the United States, other language communities; relevant principles of linguistic theory. Analysis. Same as 103:150.
Director: Dorothy Johnson
Professors emeriti: Wayne Begley, Byron Burford, Charles D. Cutler, Mauricio Lasansky, James Lechay, Eugene Lusins, Howard Rogovin, Julius Schmidt, Norval Tucker, George Walker
Adjunct associate professor: Tim Barrett
Assistant professors: Isabel Barbuzza, Robert Bork, Laurel Farm, Elton Fisher, Julie Hochstrasser, Gelsey Vwy, Rachel Walley

Undergraduate degrees: B.A., B.F.A. in Art, B.A. in Art History
Undergraduate nondegree programs: minors in Art, Art History
Graduate degrees: M.A., M.F.A. in Art; M.A. in Art Education; M.A., Ph.D. in Art History
Web site: http://www.uiowa.edu/art

Established in 1936, the School of Art and Art History continues to provide a creative, multidisciplinary environment for students of the studio arts, the history of art, and art education. Firmly grounded within the College of Liberal Arts, the school 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.

**Undergraduate Programs**

**Bachelor of Arts in Art**

The undergraduate program in art requires a foundation in art history as well as an understanding of the formal traditions and contemporary practices in art. Undergraduate students concentrating in studio art begin in the program leading to the B.A. degree and pursue a broad-based knowledge in at least four areas of studio art. Especially interested students with proven abilities may transfer into the B.F.A. program. Application for such transfer normally proves abilities may transfer into the B.F.A. program. Application for such transfer normally should be made early in the junior year. B.F.A. students may develop an emphasis in ceramics, design, drawing, intermediate and video art, metalsmithing and jewelry, painting, photography, printmaking, or sculpture.

B.A. students in art must earn at least 74 semester hours of credit in non-art courses. Cross-referenced courses originating in the School of Art and Art History may not be counted as non-art electives.

The B.A. in art requires the following:

Two art history courses chosen from these (preferably taken during the first or second year):

- 01H:002 Art of Africa, Oceania, and Pre-Columbian America 3 s.h.
- 01H:005 Western Art and Culture before 1400 3 s.h.
- 01H:006 Western Art and Culture after 1400 3 s.h.
- 01H:016 Asian Art and Culture 3 s.h.

Two additional art history courses (other than 01H:002, 01H:005, 01H:006, and 01H:016 and preferably taken after the two chosen from that group) 6 s.h.

Three studio courses:

- 01A:001 Colloquium 1 s.h.
- 01A:003 Basic Drawing (prerequisite for all studio courses) 2 s.h.
- 01A:004 Basic Design (prerequisite for all studio courses) 2 s.h.

Any two of these three-dimensional courses:

- 01C:060 Ceramics I 3 s.h.
- 01G:084 Introduction to Jewelry and Metal Arts 3 s.h.
- 01J:090 Intermedia I 3 s.h.
- 01N:015 Undergraduate Sculpture I 3 s.h.

Any two of these two-dimensional courses, from two different studio areas:

- 01D:021 Problems in Design I: Form and Structure 2 s.h.
- 01D:028 Graphic Design I 3 s.h.
- 01F:007 Life Drawing I 3 s.h.
- 01K:009 Painting I 3 s.h.
- 01L:034 Beginning Photography 3 s.h.
- 01M:021 Undergraduate Intaglio and Relief I 3 s.h.
- 01M:031 Undergraduate Lithography 3 s.h.

Electives, chosen only from courses that originate in the School of Art and Art History, must bring the total number of credits in art history, studio art, and art education to a minimum of 38 semester hours. No more than 50 semester hours of credit in the combined art history, studio art, and art education courses may be counted toward the 124 semester hours required for the degree.

Transfer students majoring in art must complete the University of Iowa a minimum of 3 semester hours in art history and 12 semester hours in studio art. The studio hours must include work in at least two different studio areas.

Undergraduate transfer students majoring in art must, during their first week in residence, show a portfolio of their art to faculty members, who determine the students’ placement in, or exemption from, the sequence of basic studio courses.

**Art Education**

Students seeking licensure in art education complete the requirements for the B.A. or B.F.A. degree in art. They also take the following courses, which are offered by the School of Art and Art History or the College of Education.

- 01E:196 Concepts in Art Education 3 s.h.
- 01E:198 Art Education Studio 3 s.h.
- 07E:143 Methods: Art 3 s.h.
- 07E:192 Special Area Student Teaching 6 s.h.
- 07F:180 Human Relations for the Classroom Teacher 3 s.h.
- 07P:075 Educational Psychology and Measurement 3 s.h.
- 07S:090 Introduction and Practicum: Art 2 s.h.
- 07S:100 Foundations of Education 3 s.h.
- 07S:105 Advanced Methods: Art 3 s.h.
- 07S:187 Seminar: Curriculum and Student Teaching 3 s.h.
Minor in Art
A minor in art requires 15 semester hours in art courses with a grade-point average of 2.00 or higher. Students must complete 01H:001 Elements of Art, and 12 semester hours of advanced-level art studio courses taken at The University of Iowa (01K:049, 01M:022, 01N:017, and those numbered 100 and above). One art history course may be applied to the 12 semester hours of upper-level course work. In selecting courses, students should pay close attention to the stated prerequisites for individual courses.

Course work applied toward a minor may not be used to satisfy the requirements for a major.

Bachelor of Arts in Art History
Because the history of art is engaged in problems of historical analysis and the interpretation of culture, it provides students with a broad background in the humanities consistent with a liberal arts education. The undergraduate degree program is designed to prepare students for competitive placement in graduate schools across the country.

As students progress through the program, 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 buildings. In the course of their studies, art history majors develop their research abilities and writing skills.

The B.A. in art history requires the following (total of 45-46 semester hours).

Both of these, in sequence, normally during the first or second year:

01H:005 Western Art and Culture before 1400 3 s.h.
01H:006 Western Art and Culture after 1400 3 s.h.

One of these:
01H:007 Art of Africa, Oceania, and Pre-Columbian America 3 s.h.
01H:016 Asian Art and Culture 3 s.h.

Four of these:
01H:020 Introduction to African Art 3 s.h.
01H:026 Introduction to Ancient Art 3 s.h.
01H:030 Introduction to East Asian Art 3 s.h.
01H:040 Introduction to Medieval Art 3 s.h.
01H:047 Introduction to Renaissance Art 3 s.h.
01H:053 Introduction to Baroque Art 3 s.h.
01H:062 Introduction to Nineteenth-Century Art 3 s.h.
01H:063 Introduction to Twentieth-Century Art 3 s.h.
01H:066 Introduction to American Art 3 s.h.

Four courses chosen from 01H:103 through 01H:196 12 s.h.
01H:199 Topics in Art History 3 s.h.
01H:010 First-Year and Sophomore Tutorial: Introduction to the History of Art 4 s.h.
or
01H:099 Undergraduate Seminar in the History of Art (normally in junior or senior year) 3 s.h.
Studio courses 6 s.h.

No more than 50 semester hours of credit in art history and studio may be counted toward the 124 semester hours required for the degree.

CREDIT IN DISCIPLINES OUTSIDE ART HISTORY
Students must take courses in at least three of the following disciplines: anthropology, classics, history, literature, philosophy, political science, religion, sociology, or others approved by faculty advisers, for a total of 12 semester hours.

Transfer Students
Transfer students planning to major in art history should meet with the undergraduate adviser to discuss the requirements they may fulfill with transfer courses.

Minor in Art History
A minor in art history requires 15 semester hours of courses in art history, with a grade-point average of at least 2.00. Twelve of the 15 semester hours must be taken in advanced-level courses at The University of Iowa (courses numbered 01H:020 and above). Students planning a minor in art history are encouraged to take at least one of these survey-level courses: 01H:002, 01H:005, 01H:006, or 01H:016. Course work applied toward a minor may not be used to satisfy the requirements for a major.

Bachelor of Fine Arts in Studio
Prospective B.F.A. students must apply to enter the program after completing at least one semester of work in the studio area of concentration, but before completing 50 semester hours in art. B.F.A. candidate reviews are held once each semester.

Students who wish to enter the B.F.A. program should consult the faculty in the studio area of concentration for information about the required portfolio review.

The B.F.A. requires that the 124 semester hours required for graduation include 62 semester hours from courses taken outside the School of Art and Art History and 62 semester hours in School of Art and Art History courses.

In addition to completing the General Education Program (see the College of Liberal Arts introductory section in the Catalog) and major requirements listed above for the B.A. in art, B.F.A. candidates must complete three courses in a studio area of concentration beyond the fundamental course, and at least the second semester of course work in each of two additional studio areas. Papermaking, calligraphy, and bookbinding courses may not be used as major or minor areas. Cross-referenced courses originating in the School of Art and Art History may not be counted as non-art electives.

Art education majors in the B.F.A. program must meet the same teacher licensure requirements as must students in the B.A. program.

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. in Art
Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least four courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least eight courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: at least 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

B.A. in Art History
Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least four courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least eight courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: at least 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 Fine Arts
Admission to the program leading to the B.F.A. degree in art is limited and depends on the department’s evaluation of the student’s work. In order to participate in the four-year graduation plan, students must be admitted to the degree program on schedule as determined by the art adviser.

Before the third semester begins: at least four courses in the major and at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: at least eight courses in the major, and at least one-half of the semester hours required for graduation.

Before the seventh semester begins: at least 14 courses in the major and at least three-quarters of the semester hours required for graduation.

Before the eighth semester begins: at least 18 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**

Art and art history majors who are members of the University Honors Program may enroll in the honors program of the School of Art and Art History.

To earn a degree with honors in art history, students must complete the requirements for the B.A. in art history with a grade-point average of at least 3.50 in art history courses. Each student must prepare a thesis of 20-40 pages on a topic that has been determined in consultation with a faculty advisor; 3 semester hours credit may be awarded for the thesis, taken as 01H:190 Honors Research in Art History. The thesis should conform to the Graduate College format for theses and must be read by and defended before a faculty committee.

Honors students in studio must maintain a grade-point average of at least 3.50 in studio courses, hold an exhibition of their studio work, and prepare a statement of the sources of the exhibited studio work. The statement may be based on the history of art, history of ideas, philosophy, and so forth, and should be written under the supervision of faculty in the student’s studio concentration area. Students may register for 3 semester hours of credit for the course of individual instruction that leads to the exhibition and related statement.

**Graduate Programs**

**Master of Arts in Art**

The school offers the M.A. in art with majors in ceramics, design, drawing, intermedia and video art, metalsmithing and jewelry, painting, photography, printmaking, and sculpture.

The degree requires:
- a B.A. or B.F.A. in art equivalent to that offered at The University of Iowa (undergraduate deficiencies, if any, may be made up concurrently with, but are in addition to, graduate requirements);
- a minimum of 38 semester hours of graduate work, including at least 12 semester hours in a major studio area, 6 semester hours in a minor studio area from one of the M.A. majors with a total of at least 21 semester hours in studio courses; 3 semester hours in the history and theory of art, excluding readings and directed studies; a drawing course taken at The University of Iowa; and 6 semester hours of courses outside art and art history;
- clearance for M.A. candidacy by faculty review (during the second semester in residence); and
- studio and written theses.

One semester hour writing a technical or substantial thesis may be earned by registering for 01A:302, with approval of the thesis supervisor. Thesis credit earned in an M.A. program is not applicable toward the M.F.A. requirements.

Art majors may elect to take art history courses as well as courses outside the school on a satisfactory-unsatisfactory basis.

Students preparing to teach in both the studio and art history areas may complete an art history minor of 15 semester hours, including 01H:200 History and Methods and one other seminar. This work is in addition to the University’s undergraduate requirement for an art history major and, in combination with the undergraduate hours, must satisfy the distribution requirement for art history.

**Master of Fine Arts in Art**

The school offers the M.F.A. with a major in ceramics, design, drawing, intermedia and video art, metalsmithing and jewelry, painting, photography, printmaking, or sculpture. M.A. students may advance to the M.F.A. program after successful committee review of their studio work in their major area. The review is conducted during the student’s third semester in the M.A. program.

M.F.A. candidates must have:
- an M.A. degree in art equivalent to that offered at The University of Iowa;
- a minimum of 60 semester hours of graduate work, including at least 18 semester hours in a major studio subject, at least 9 semester hours in a minor studio field selected from the fields listed above, 6 semester hours in art history and theory of art, 6 semester hours in courses originating outside the school, and a drawing course taken at The University of Iowa (if not already taken);
- clearance for M.F.A. candidacy by faculty reviews; and
- studio and written theses.

Transfer credits are decided upon by faculty review.

One hour of credit for writing a technical or substantial thesis may be earned by registering for 01A:304, with approval of the thesis supervisor. Thesis credit earned in an M.A. program is not applicable toward the M.F.A. requirements.

**Master of Arts in Art Education**

Requirements for the M.A. in art education are:
- a B.A. or B.F.A. in art equivalent to that offered at The University of Iowa;
- teaching licensure/certification in art;
- completion of 38 semester hours of graduate credit, including 18 semester hours of studio and art history in a ratio of two to one (either 12 semester hours of graduate credit in studio and 6 in art history, or 6 in studio and 12 in art history), 8 semester hours in graduate seminars in art education, and 12 semester hours to be specified after the student begins the program; and
- a written thesis based on research in art education or art history, or a studio thesis accompanied by a brief statement of the student’s technical, aesthetic, and/or psychological approach, and clearance for M.A. candidacy by faculty review.

Art education majors who elect to do a studio thesis and who have not had drawing at The University of Iowa are required to take at least one drawing course, chosen from the school’s regularly scheduled drawing courses, during the first year in residence.

Art education majors may elect to take art history courses on a satisfactory-unsatisfactory basis.

**Master of Arts in Art History**

Students pursuing an M.A. in art history are expected to acquire a broad knowledge of art history as an academic and humanistic discipline, to become familiar with major periods and monuments of world art, and to gain proficiency in scholarship. The M.A. program in art history provides students with training in research methods appropriate to subsequent specialization at the Ph.D. level. Because the M.A. culminates in a substantial thesis in the candidate’s chosen area of focus, evidence of competence in scholarly research and writing is prerequisite to graduation.

Graduates with M.A. degrees generally continue for the Ph.D. degree or enter the professions of college teaching or museum work.

To earn an M.A. in the history of art, students must complete a minimum of 30 semester hours of graduate-level course work with a grade-point average of at least 3.50. Only one semester of academic probation is allowed. All M.A. candidates, including transfer students, must take at least 24 semester hours in residence at The University of Iowa. M.A. candidates must earn a grade of B or better in semester-long courses (100-level) in five of the following nine distribution fields: African, Asian, ancient (3000 B.C.-300 A.D.), Medieval 1300-1400 A.D., Renaissance, Baroque, 18th and 19th-Century European, 18th and 19th-Century American, and 20th century. These courses must be taken after receipt of the B.A. degree. However, a student who earned a grade of B or higher in an undergraduate or intermediate level course in
the same field during his or her undergraduate career may apply credit for a graduate seminar toward a distribution field requirement.

**REQUIRED COURSES**

M.A. students must complete the following.

01H:200 History and Methods 3 s.h.

Two art history seminars (with different instructors in different fields) 6 s.h.

Additional art history or studio courses, or courses outside the School of Art and Art History 6 s.h.

History and Methods (01H:200) must be taken during the first fall semester of the student’s residency. Incoming students who already have taken a comparable graduate-level course at another university may petition the art history faculty to waive this requirement.

Courses outside the curriculum of the School of Art and Art History’s art history division do not carry art history credit.

**Directed Studies**

Directed Studies (01H:300) is designed for graduate students who already have taken an advanced course or courses in a specific art history area. It provides students with an opportunity to work one-to-one with a professor on specific research interests developed in lecture courses or seminars or on topics that may eventually be the subject of a thesis or dissertation. Directed Studies cannot be substituted for a lecture course already offered in the program. Normally, students have taken at least one course with a professor before taking Directed Studies with that professor. To take Directed Studies, students must discuss the course with the professor involved and have his or her approval. Directed Studies may be taken only once in any semester. Students may earn 1-3 semester hours for a single registration in the course but may count only up to 3 semester hours toward requirements for the M.A.

Students taking Directed Studies for 1-2 semester hours normally meet with the directing professor every other week and complete readings and short written assignments. Those taking the course for 3 semester hours normally meet once a week and complete extensive readings, annotated bibliographies, and a substantial paper on a specific topic.

**FOREIGN LANGUAGES**

Within the first 20 semester hours of graduate study, students must demonstrate the ability to read art history writings in a second appropriate foreign language. This requirement, which is in addition to the foreign language requirement for admission to the M.A. program, is generally fulfilled either by the satisfactory completion of the second semester of a graduate level reading for research language course or the completion, with a grade of B or higher, of the fourth semester of an undergraduate language sequence. Language requirements are fulfilled with German and French.

Credit earned in language courses taken to fulfill the language requirement does not count toward the 30 semester hours required for the degree.

**M.A. THESIS**

Before graduation, M.A. candidates must complete a written thesis (01H:302 M.A. Written Thesis) for up to 3 semester hours of credit. This credit can be applied toward the degree but does not substitute for other required courses.

The M.A. degree committee consists of the student’s degree committee supervisor and two additional tenured or tenure-track members of the art history faculty.

**FINAL EXAMINATION**

The final examination constitutes an oral defense of the written M.A. thesis. The final examination meeting with the M.A. degree committee normally takes place toward the end of the student’s last semester of course work.

**Doctor of Philosophy in Art History**

Graduates with Ph.D. degrees have gained breadth in the discipline of art history and expertise in a specialized area of research. They are expected to contribute to the field of art history through original research that responds to issues deemed critical to their field of concentration. Graduates with Ph.D. degrees generally anticipate careers in college or university teaching or in the museum profession.

To earn a Ph.D. in art history, students must complete a minimum of 72 semester hours of graduate-level course work with a grade-point average of at least 3.50; a maximum of 38 semester hours of work taken for the M.A. may be counted toward this requirement. Students are allowed only one semester of academic probation. The following course distribution beyond the M.A. is required.

To establish academic residency, candidates must be enrolled as full-time students at The University of Iowa for two semesters (at least 9 semester hours each) during the first fall semester of the student’s last semester of course work.

As soon as possible after completing the dissertation proposal and to offer comments and suggestions, (The proposal must be submitted to the committee at least two weeks prior to the approval meeting.) The proposal includes a 1-2 page abstract, a 10-15 page precis (including a review of the state of the field), and a bibliography.

**FINAL EXAMINATION**

The completion of a written dissertation, which constitutes an original scholarly contribution to
Art and Art History • College of Liberal Arts

the field, and the successful completion of the final examination (the oral defense) of this dissertation are the final requirements for the Ph.D.

Doctor of Philosophy in Art Education

The Ph.D. in art education gives college teachers and researchers in art education and art supervisors in state departments of education and school systems an opportunity to continue their inquiry and creative work in art history and in studio art.

The program is administered by the College of Education, in cooperation with the School of Art and Art History. Students must apply for admission to the College of Education.

Degree Requirements

Students must complete at least 60 semester hours of graduate work beyond the M.A. The curriculum must be planned with the advisor and must include at least 15 semester hours in the School of Art and Art History, 15 semester hours in art education graduate seminars, 15 semester hours in a related area (e.g., aesthetics, anthropology, higher education, psychology, sociology); and 15 semester hours in thesis and tool courses (07E:306 Introduction to Research in Art Education).

Students must take both oral and written comprehensive examinations. The written examination consists of an in-depth research problem to be completed within 14 days, after which an oral examination on the project is held. The research problem is assigned by the examining committee, and the written portion of the examination is not intended to relate directly to the student’s dissertation proposal.

Students also must complete a written dissertation for at least 12 semester hours of credit and are expected to prepare a dissertation proposal and defend it before the dissertation committee. An oral examination on the dissertation is the Ph.D. final examination.

Graduate Admission

Acceptance into the graduate program in art and art history requires admission to The University of Iowa Graduate College as well as to the School of Art and Art History. Decisions regarding admission and assistantships cannot be confirmed until applicant files are complete.

Completed applications for the master’s or doctoral program and requests for financial aid must be submitted by February 1.

The Office of Graduate Admissions notifies all applicants by mail of admission decisions. Acceptance notification cannot be given over the phone by either the admissions office or the School of Art and Art History.

Applicants whose native language is not English must take and pass the Test of English as a Foreign Language (TOEFL), unless they have received a degree from an accredited college or university in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand. A minimum TOEFL score of 550 (paper-based test) or 213 (computer-based test) is required for admission to the studio program; a minimum score of 600 (paper-based test) or 250 (computer-based test) is required for art history. The examination is given at various times of the year and in many centers throughout the world. inquiries should be addressed to Director, TOEFL, Educational Testing Service, Princeton, New Jersey 08541.

All applicants must submit the following to the Office of Graduate Admissions:

- a completed application for admission (one area of interest must be specified on the application form);
- GRE scores, and TOEFL scores (if applicable);
- the required application fee; and
- an official copy of all undergraduate transcripts and/or graduate work completed by the date of application.

Art history applicants must include Graduate Record Examination Aptitude Test scores with their application for admission, in accordance with the appropriate application deadlines. Studio or art education applicants who do not submit GRE General Test scores at the time of application must do so by their first semester in residence. In addition, applicants must meet the graduate application requirements for the particular programs for which they seek admission, as follows.

STUDIO ART

Admission procedures for graduate studio programs include a committee review of applications and all of the applicant’s supporting material. Complete application materials for graduate degrees in studio art must be on file in the School of Art and Art History by February 1 for the summer and fall terms, October 1 for the spring term.

Applicants must submit the following to the art history program: an official copy of all undergraduate transcripts and one- to two-page statement of purpose, an essay that outlines the applicant’s purpose in pursuing graduate study; and transcripts from all colleges and universities attended. The materials should be submitted to the School of Art and Art History’s academic secretary.

ART HISTORY-PH.D.

Applicants for admission to the Ph.D. program in art history must have earned a M.A. in art history or a related graduate degree. Proficiency in at least two foreign languages, shown by completion of the second semester of a graduate-level reading-for-research language course, or completion of the fourth semester of an undergraduate language sequence with a grade of B or higher, is required for admission. Although exceptions may be made, applicants should have GRE General Test scores of at least 1800 (combined verbal, quantitative, and analytic) and an undergraduate grade-point average of at least 3.2 on a 4.0 scale.

Students who have completed their M.A. degrees at The University of Iowa and who wish to apply for entrance into the Ph.D. program must make a formal application to the Ph.D. Program. Their applications will be evaluated in the context of the entire applicant pool. In addition to the admissions materials required by the Graduate College, the School of Art and Art History requires that applicants submit a research paper (preferably from an art history course) or undergraduate thesis that demonstrates the applicant’s ability to do future research in art history: a 500- to 1,000-word essay that outlines the applicant’s purpose in pursuing graduate studies and states his or her intellectual interests and career goals; three letters of recommendation that assess the applicant’s potential for graduate study; and transcripts from all colleges and universities attended. The materials should be submitted to the School of Art and Art History’s academic secretary.

Sculpture: a selection of slides that include examples of work in at least one other area of competence

Each slide must be enclosed in a slide sheet and labeled with the name, portfolio medium, size, and approximate date of work; the top should be indicated. An inventory list with the same information should be included. Extreme care will be taken in handling all portfolios, but the school cannot be responsible for reimbursement in the event of loss or damage.

ART HISTORY-M.A.

Applicants to the M.A. program in art history must have earned a bachelor’s degree. Proficiency in at least one foreign language, shown by completion of two years (or the equivalent) of undergraduate language course work with a grade of B or higher is required for admission.

Applicants should have GRE General Test scores of at least 1800 (combined verbal, quantitative, and analytic) and an undergraduate grade-point average of at least 3.2 on a 4.0 scale.
supervisor assessing the applicant’s potential for doctoral study; and transcripts from all colleges and universities attended. The materials should be submitted to the School of Art and Art History’s academic secretary.

Completed applications for the master’s or doctoral program and requests for financial aid must be submitted to the Graduate College by February 1.

**ART EDUCATION**

Applicants must submit to the School of Art and Art History’s academic secretary a one-page paper that states their purpose and three letters of recommendation that assess their potential for graduate study.

Applicants to the M.A. program in art education must submit a term paper or other example of ability to write in the field and a selection of slides or photographs of their creative work in two studio areas.

For admission to the Ph.D. in art education, students must meet the Graduate College’s general admission requirements for doctoral students and must have an M.A. degree in art education from The University of Iowa or an equivalent degree from an accredited college or university. Students who have course work deficiencies must register for pertinent courses. Candidates must have completed one year of successful teaching experience in an elementary or secondary school to be eligible for the doctoral degree.

Application to the Ph.D. program must be accompanied by a representative portfolio of the candidate’s work, consisting of 12 colored slide reproductions of art work and two examples of written work, which may consist of previously written papers or new work. The portfolio should be submitted to the Art Education Office. Complete application materials for graduate admission in art education must be on file with the academic secretary in the School of Art and Art History by February 1 for summer or fall admission; by October 1 for spring admission.

**Financial Support**

Fellowships, teaching assistantships, research assistantships, and tuition scholarships are awarded to graduate students on the basis of artistic and/or scholarly record.

In the studio programs, financial aid to new students is possible, but most assistantships and scholarships are awarded to graduate students who have been in residence for at least a year. This gives faculty members an opportunity to observe their performance and potential.

**University of Iowa Fellowships**

These fellowships are awarded by the Graduate College on the basis of a University-wide competition among incoming Ph.D. students. Each fellowship is a four-year package, including two years on fellowship and two years on teaching or research assistantships. They include stipends plus full tuition scholarships. The school nominates incoming students for University of Iowa Fellowships on the basis of Graduate Record Examination scores, grade-point average, and letters of recommendation.

**Teaching and Research Assistantships**

Assistantships are awarded to graduate students on the basis of academic record, Graduate Record Examination scores, 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 director’s secretary.

Renewal or reappointment for fellowships and assistantships depends on adequate progress toward the degree (graduate students must accumulate at least 18 semester hours of graduate credit each calendar year and maintain a grade-point average above the required minimum) and satisfactory performance of assistantship duties.

Decisions on financial aid are generally made during the latter part of the spring semester for the following academic year. In most cases, applications and all relevant materials should be on file by February 1.

**Special Resources**

**Reference Collections**

The art library contains 95,000 volumes, an outstanding periodical collection, and an extensive microfilm and microfiche archive.

The school’s Office of Visual Materials contains 280,000 slides, 30,000 photographs, a videotape library, and a videodisc facility that includes an extensive videodisc of African Art.

**Museum of Art**

The University’s Museum of Art has a significant permanent collection that includes major holdings of contemporary art, African and Pre-Columbian art, English and American silver, European and American prints, drawings and photographs, and Etruscan, Iranian, and contemporary 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.

**Interdisciplinary Resources**

In the studio area, colloquia, visiting artists programs, and graduate workshops bring in visitors and provide open forums for the discussion of alternative concerns.

The school’s Program for Modern Studies embraces the Fine Arts Dada Archive and Research Center and Alternative Traditions in the Contemporary Arts. It has become one of the best known centers of modern art historical research in the United States. Responsible for symposia, exhibitions, scholarly catalogs and anthologies, and national and international collaborative research and collections, the program gives students outstanding opportunities to work on projects with distinguished scholars from a variety of fields and institutions. As part of the modern studies teaching program, faculty address a diversity of perspectives to designated topics central to the problems of modernism. These coordinated course offerings are designed to allow undergraduate and graduate students in residence to make long-term plans for in-depth work in an area and to permit students enrolled in other programs to come to Iowa for an intense period of study.

Among the school’s major assets is the Project for Advanced Study of Art and Life in Africa (PASALA), an interdisciplinary program that brings together faculty with international reputations in art history and anthropological knowledge to offer courses and independent study of art and expressive culture in West, Central, East, and South Africa. The result is a program of unusual and outstanding breadth and depth of expertise. PASALA is among the most active of such programs in the country, organizing annual international symposia that discuss significant topical issues and publishing the proceedings in regular issues of Iowa Studies in African Art.

Each year the program hosts distinguished international fellows from a range of disciplines who work with students and faculty on original research projects. In addition, PASALA offers scholarships and support for research in Africa and dissertation preparation to outstanding students. The major asset of PASALA is the Stanley Collection of African Art in The University of Iowa Museum of Art, a large collection of exceptional quality that is the focus of study by students in Iowa’s African Studies Program.

The school also maintains an affiliation with the University’s American Studies Program, providing students with opportunities to study not only the history of American art but a variety of interdisciplinary programs in American history, literature, and politics.

**Facilities**

The school houses a printshop containing intaglio, lithographic, and monotype equipment and facilities for hot-stamping foil; facilities for welding and fabrication of steel sculpture; excellent drawing studios in the main building as well as individual studios for painting and drawing graduate students in a separate building; a well-equipped darkroom; extensive kiln facilities including provision for construction of various types of temporary and specialized kilns; a large shop for metalworking and industrial design; electroforming equipment; a papercrafting mill; a typography studio; and video equipment.
Art and Art History z

The sculpture area maintains a full range of
welding facilities, specializing in heliarch, MIG,
TIG and oxyacetylene equipment. There are
facilities for metal forming, such as a large
wide-mouth gas forge, metal rollers, and shears.
The area also maintains a bronze casting facility
that includes furnaces and burn-out kilns for
investment, ceramic shell, and bonded sand.

Courses
Art History
Primarily for Undergraduates
01H:001 Art and Culture

3 s.h.

3 s.h.

For Undergraduate and Graduate
Students

Sculpture, painting, architecture, minor its in Greece, Italy,
Asia Minor, Egypt. Prerequisite: 01H:005 or 01H:026 or
consent of instructor. same as 014:117.

01H:104 American Indian Art

01H:004 Masterpieces: Art and Cultural
3 s.h.
3 s.h.

Art, its creators, culture of prehistoric, ancient, medieval
periods. GE: fine arts or foreign civilization and culture or
historical perspectives.

01H:006 Western Art and Culture after 1400

3 s.h.

4 s.h.

Questions and methods art historians use to explore art;
thematic, conceptual approach. GE: fine arts or humanities.

01H:016 Asian Art and Culture

3 s.h.

India, China, Southeast Asia, Japan. GE: fine arts or foreign
civilization and culture or historical perspectives Same as
039:016.

01H:020 Introduction to African Art

3 s.h.

Traditional arts of sub-Saharan Africa; sculpture, painting,
pottery, textiles, architecture, human adornment. GE: fine arts
or foreign civilization and culture. Same as 141:030.

01H:026 Introduction to Ancient Art

3 s.h.

Art, architecture of Mediterranean civilizations from Minoan
times to age of Constantine. Prerequisite: 01H:005 or consent
of instructor. Same as 014:026.

01H:030 Introduction to East Asian Art

3 s.h.

History of visual arts of of China, Korea, Japan; chronological and
geographical approaches; emphasis on understanding the arts
within cultures producing them. Prerequisite: 01H:016 or
039:016 or equivalent or consent of instructor. Same as
039:030.

01H:040 Introduction to Medieval Art

3 s.h.

Art, architecture in Europe from 300 to 1400 A.D.

01H:047 Introduction to Renaissance Art

3 s.h.

Art, architecture in Europe from early Renaissance to 1600.

01H:053 Introduction to Baroque Art

3 s.h.

Art, architecture in Europe from 1600 to 1750.

01H:062 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 such as Neo-Classicism, Romanticism, Realism,
Impressionism, Post-impressionism, Symbolism.

01H:063 Introduction to Twentieth Century Art

3 s.h.

Historical, context-specific artistic responses to modernism.
European, North American, Latin American developments in
traditional genre, temporal arts, artistic actions; art’s relationship
to culture.

01H:066 Introduction to American Art

3 s.h.

3 s.h.

3 s.h.

Architecture, painting, photography, sculpture from colonial
times to present. GE: fine arts or humanities.

3 s.h.

3 s.h.

3 s.h.

3 s.h.

Early Chinese painting from fourth century B.C. through 13th
century A.D.; figural style, emergence of landscape.
Prerequisite: 01H:016 or 01H:030 or consent of instructor.
Same as 039:120.

3 s.h.

Focus on landscape of 14th through 18th centuries; sources in
earlier periods. Same as 039:121.

3 s.h.

Art, architecture; relation to philosophies, religions (Shintoism,
Buddhism, Zen]. Same as 39J:156.

01H:123 Japanese Painting

3 s.h.

Chinese influence, indigenous styles from seventh through early
19th centuries. Same as 39J:123.

01H:124 Themes in Asian Art History

3 s.h.

May be repeated. Prerequisite: 01H:016 or 039:016 or
equivalent or consent of instructor. Same as 039:131.

01H:126 Early Greek Art

3 s.h.

3 s.h.

From Dark Ages in Europe through Ottonian period, including
contemporary insular It. Prerequisite: 01H:005 or 01H:006 or
consent of instructor.

01H:141 Romanesque and Gothic Art

3 s.h.

3 s.h.

Art, architecture from early Classical through late fourth century
B.C. Prerequisite: 0lH:005 or 01H:026 or consent of
instructor. same as 014:111

3 s.h.

Development of central Italian sculpture from Pisano to
Michelangelo. May be repeated. Prerequisite: 01H:047.

01H:147 Italian Medieval Art

3 s.h.

Painting, sculpture, architecture; 1250 to 1400.

01H:148 Italian Art in the Fifteenth Century

3 s.h.

Painting, sculpture, architecture; 1400 to 1525.

01H:149 Italian Art in the Sixteenth Century

3 s.h.

Painting, sculpture, architecture; 1500 to 1600.

01H:150 Themes in Renaissance Art

3 s.h.

Current topics organized thematically rather than
chronologically. May be repeated. Prerequisite: 01H:005 or
01H:006 or consent of instructor.

01H:151 Classical Architecture: Theory/Practice

3 s.h.

Architectural design in the Italian Renaissance. Brunelleschi to
Palladio.

01H:152 Buildings and Society in Europe,
1500-1700

3 s.h.

Architecture from a sociological perspective.

01H:153 Italian Baroque Art

3 s.h.

Painting, sculpture in the age of Caravaggio, Bernini.

01H:154 Flemish and Dutch Baroque Painting

3 s.h.

Painting in the age of Rubens and Rembrandt. Prerequisite:
01H:005 or 01H:006 or consent of instructor.

01H:155 The City of Rome: Image and Ideology

3 s.h.

The myth of the Eternal City as embodied in its arts and
architecture, Renaissance to Mussolini

01H:158 British Art 1750-1900
3 s.h.

Art of Cyclades, Crete, Mycenae from 3000 B.C.; Greek art
from Protogeometric times through Archaic period. Prerequisite:
0lH:005 or 01H:026 or consent of instructor. Same as
014:110.

01H:127 Classical Greek Art

01H:140 Early Medieval Art

01H:146 Italian Sculpture: 13th-16th Centuries
3 s.h.

Art, architecture; relation to philosophies, religions
(Confucianism, Taoism, Buddhism]. Prerequisite: 01H:006 or
01H:030 or consent of instructor. Same as 039:159.

01H:122 Art of Japan

01H:139 Themes in Medieval Art

Prerequisite: 01H:005 or 01H:006 or consent of instructor.

Prehistoric rock art, Janne, Nok, Igba Ukwu, Sanga, Ife, Benin,
Great Zimbabwe. Prerequisite: 01H:002 or 01H:020 or consent
of instructor. Same as 141: 112.

01H:121 Chinese Painting II

3 s.h.

Topics of current interest: organized thematically rather than
chronologically. May be repeated. Prerequisite: 01H:005 or
01H:006 or consent of instructor.

Sculpture, painting, pottery, textiles, architecture, personal
adornment arts. May be repeated. Prerequisite: 01H:002 or
01H:020 or consent of instructor. Same is 141:111

01H:120 Chinese Painting I

01H:135 Themes in Ancient Art

3 s.h.

Sculpture, painting, architecture, luxury arts from 3,000 to
1,000 B.C. Prerequisite: 0lH:005 or consent of instructor.
Same as 032:104.

01H:119 Art of China

3 s.h.

Art, architecture, as documents of ancient society and religion in
cities destroyed by Vesuvius in A.D. 79. Prerequisite: 01H:005
or 01H:026 or consent of instructor. Same as 020:109.
Topics concerning the art and architecture of classical antiquity.
Prerequisite: 01H:005 or 01H:026 or consent of instructor.

Aesthetic, philosophical, religious patterns of African
descendants of Brazil, Surinam, Caribbean, the United States.

01H:112 Art and Archaeology of Ancient Africa

01H:134 Art and Culture in Ancient Pompeii

3 s.h.

3 s.h.

01H:10B Art of Central Africa

01H:111 The Art of Southern and Eastern Africa

3 s.h.

3 s.h.

Art of equatorial forest, southern savannah. Same as 129:110,
141:108.

01H:110 Egyptian Art

01H:132 Early Roman Art

Art, architecture of Italy and provinces from late Republic
through reign of Hadrian. Prerequisite: 01H:005 or 01H:026 or
consent Of instructor. same as 020:110.

01H:133 Later Roman Art

01H:109 The Arts of the African Diaspora

Art, artists, culture from Renaissance to present. GE: fine arts or
foreign civilization and culture or historical perspectives.

01H:010 First-Year and Sophomore Tutorial:
Introduction to the History of Art

01H:107 Art of West Africa

3 s.h.

Villanovan, Etruscan art, religion, culture from Bronze Age to
Roman conquest of Etruria. Prerequisite: 01H:005 or 01H:026
or consent of instructor. Same as 020:111.

Art, architecture of imperial Rome and the provinces, from the
Antonines through Constantine, A.D. 138-337. Prerequisite:
01H:005 or 01H:026. Same as 020:112.

01H:105 Art of PreColumbian America

Art of western Sudan, Guinea coast. Same as 129:107,
141:107.

01H:130 Etruscan Art

3 sh.

3 s.h.

Sculpture, painting, architecture, crafts, arts of personal
adornment of native peoples of North America. GE: cultural
diversity.
Art, architecture of Mexico, Peru before Cortes.

01H:005 Western Art and Culture before 1400

01H-129 Hellenistic Art

An introductory course in the appropriate art
history area or consent of instructor is
prerequisite for courses numbered above 100.
Courses designated “Themes in Art History”
consider topics of current interest in the field,
organized thematically rather than
chronologically.

Traditional arts of Black Africa, the Pacific, the Americas before
European conquest. GE: cultural diversity or fine arts or
humanities.

Architecture, painting, sculpture in cultural context. GE: fine
arts or humanities.

3 s.h.

Characteristic problems, methodological issues, critical thinking
and writing. Consent of instructor required.

3 s.h.

Traditional arts of Polynesia, Micronesia, Melanesia.

01H:002 Art of Africa, Oceania, and

Paradigms

01H:128 Greek Vase Painting

Pottery techniques, styles, subjects from Protogeometric period
through Hellenistic times. Prerequisite: 01H:005 or 01H:026 or
consent of instructor. Same as 014:114.

01H:103 Art of the South Pacific

Art in its cultural contexts; historically specific settings in which
artists have worked. GE: fine arts or humanities.

Pre-Columbian America

01H:099 Undergraduate Seminar in the History
of Art

95

College of liberal Arts

3 s.h.

Painting, sculpture, prints, and book illustration in context of
literary, aesthetic, and cultural history; emphasis on rapport
between word and image; Blake, Hogarth, Reynolds, Constable,
Turner, Ruskin, the Pre-Raphaelites.

01H:159 Rococo to Realism

3 s.h.

Painting, sculpture in Europe from late 16th to mid-19th
century; Neoclassicism, Romanticism, Realism.

01H:160 Realism, Impressionism,
Post-Impressionism
Painting, sculpture in Europe; Realism, Impressionism,
Post-Impressionism, Symbolism.

3 s.h.


01H:162 Rodin and the Art of His Time 3 s.h.
Rodin’s works in the context of late 19th-century French art and culture; emphasis on realism, aesthetic theory.

01H:163 Modern Art 1 s.h.
European and American painting and sculpture from 1900 to 1960, from Fauvism and Cubism to abstract expressionism. Prerequisite: 01H:006 or consent of instructor.

01H:164 Contemporary Art 3 s.h.
American and European painting and sculpture from 1960 to “present: from pop art and minimalism to Post-Modernism and Picture/Theory Art. Prerequisite: 01H:006 or consent of instructor.

01H:165 Landscape in American Art 1 s.h.
Visual, theoretical, social responses to landscape in the United States. Prerequisite: 01H:006 or consent of instructor.

01H:166 National Images: American Art to 1830 1 s.h.
Art, architecture from colonial times through early republic. Prerequisite: 01H:006 or consent of instructor.

01H:167 American Visual Culture, 1830-1900 1 s.h.
Architecture, painting, sculpture from 1825 to 1913. Prerequisite: 01H:166 or consent of instructor.

01H:168 Modernism and Early Twentieth-Century American Art 1 s.h.
American responses to European Modernism in painting, sculpture, architecture, and photography.

01H:171 European Art of the Early Twentieth Century 3 s.h.
Major artistic developments from 1900 to post-World War I reconstruction in the mid-1920s: organized by formal developments, platforms of influential movements, and artists’ responses to their roles in contemporary culture. Prerequisites: 01H:006, and one course from 01H:062 through 01H:066; or consent of instructor.

01H:172 Art and Politics in the Twentieth Century 3 s.h.
Relationships assumed between art and politics in this century; artists’ attempts to critique culture and strategies in competing for social power. Prerequisite: 01H:006, and one course from 01H:062 through 01H:066; or consent of instructor.

01H:173 History and Theory of the Avant-Garde 1 s.h.
Critique of avant-garde’s philosophy and function, from 19th-century sources to mid-20th-century crisis; historical design, social purpose, relationship to culture at large. Prerequisites: 01H:006, and one course from 01H:062 through 01H:066; or consent of instructor.

01H:174 World War I and the Arts 1 s.h.
The arts and their behavior during extreme crisis; engagement in political radicalism and revolutionary culture, response to crisis of modernism induced by the war. Prerequisites: 01H:006, and one course from 01H:062 through 01H:066; or consent of instructor.

01H:176 German Art, 1900-1933 1 s.h.
Beginning of 19th-century to advent of great socialism: basis in nationalism and cultural ideology, its self-critique, its relationship to international European artistic community. Prerequisite: 01H:006, and one course from 01H:062 through 01H:066; or consent of instructor.

01H:178 American Art of the 1950s 1 s.h.
Modernism embraced or rejected as art’s aesthetic environment; Austrian art’s relation to European modernism; the crisis of modernism, artists’ confrontation of possibility or impossibility of art. Prerequisites: 01H:006, and one course from 01H:062 through 01H:066; or consent of instructor.

01H:179 Twentieth-Century Performance Art 1 s.h.
Development of 20th-century performance art, architecture, and photography.

01H:180 History of Prints 1 s.h.
Printmaking as important art form, influential carrier of style and iconography from area to area, focus on Europe.

01H:185 History of Photography 1 s.h.
From medium’s inception to the present; primarily in Europe and America; major photographers, artists, curators, historians. Prerequisite: 01H:001, 01H:066, 01H:063, or consent of instructor.

01H:190 Honors Research in Art History arr.
Research and preparation of thesis. Honors standing and consent of instructor required.

01H:192 Themes in American Art 1 s.h.
Current topics organized thematically rather than chronologically. May be repeated. Prerequisite: 01H:066 or consent of instructor.

01H:193 Themes in Twentieth-Century Art 1 s.h.
Current topics organized thematically rather than chronologically. May be repeated. Prerequisite: 01H:001, 01H:006, 01H:063, or consent of instructor.

01H:194 Readings in Art History arr.

01H:196 Theory and Criticism in Contemporary Art 1 s.h.
European, American, criticism, theory; World War II to present. Prerequisite: 01H:190.

01H:199 Topics in Art History May be repeated.

Primarily for Graduate Students

01H:201 History and Methods 1 s.h.
Critical thinking and research; Maxims in historical development of the discipline, from Renaissance to present; methodological paradigms and trends.

01H:202 Special Topics in Art History 1-4 s.h.
May be repeated.

01H:300 Directed Studies arr.

01H:302 M.A. Written Thesis arr.

01H:310 Seminar Problems in African Art 2-1 s.h.
May be repeated. Same as 129:225, 141:202.

01H:316 Seminar Problems in Asian Art 2-1 s.h.
Current Issues. May be repeated. Same as 039:255.

01H:326 Seminar Problems in Ancient Art 3 s.h.
May be repeated. Same as 014:210.

01H:340 Seminar: Problems in Medieval Art 3 s.h.
Major issues, methodologies.

01H:345 Seminar: Problems in Renaissance Art 3 s.h.
Special problems, issues. May be repeated.

01H:353 Seminar: Problems in Baroque Art May be repeated.

01H:359 Seminar: Problems in Nineteenth-Century Art 3 s.h.
May be repeated.

01H:362 Seminar: Twentieth-Century Art 3 s.h.
Major issues, methodologies. May be repeated. Consent of instructor required.

01H:366 Seminar: Problems in American Art 3 s.h.
May be repeated.

01H:400 Ph.D. Readings arr.


Studio Courses numbered through 99 are primarily for undergraduates and may not be repeated for credit except where indicated. Courses numbered 100-199 may be repeated. 01A:003 Basic Drawing and 01A:004 Basic Design are prerequisites for all studio courses for art majors.

Fundamentals

01A:001 Colloquium 1 s.h.
Problems in visual arts; artists’ philosophies and techniques. Offered fall and spring semesters. Open only to majors.

01A:003 Basic Drawing 2 s.h.
Two-dimensional visual language, media, space, form, color. Open only to majors.

01A:004 Basic Design 2 s.h.
Two- and three-dimensional concepts and their relations; working with basic drawing instruments. Open only to majors or others with consent of instructor.

01A:302 M.A. Written Thesis 1 s.h.
Consent of thesis supervisor required.

01A:304 M.F.A. Written Thesis 1 s.h.
Consent of thesis supervisor required.

Elements

01B:001 Elements of Art 3 s.h.
Drawing, composition; selected reading. Open only to nonmajors. GE: fine arts.

01B:002 Elements of Art 3 s.h.
Continuation of 01B:001; emphasis on color. Open only to nonmajors. Prerequisite: 01B:001.

01B:101 Individual Instruction in Elements of Art arr.

Ceramics

01A:003 Basic Drawing and 01A:004 Basic Design are prerequisites for all ceramics courses for art majors; 01B:001 Elements of Art is prerequisite for nonmajors.

01C:060 Ceramics I 3 s.h.
Basic handbuilding methods of forming, firing, glazing clay. GE: fine arts.

01C:061 Ceramics II 3 s.h.
Basic wheel-throwing techniques; clay, glaze formulation and preparation in kiln firing. Prerequisite: 01C:060 or equivalent.

01C:170 Ceramics III 3 s.h.
Advanced throwing techniques; larger scale, more professional goals; projects may be more sculptural or one of a kind. Offered fall semesters. Consent of instructor required. Prerequisites: 01C:060 and 01C:061.

01C:171 Ceramics IV 3 s.h.
Advanced individual projects. Offered spring semesters. Consent of instructor required. Prerequisite: 01C:170.

01C:172 Ceramic Materials and Effects 3 s.h.
Empirical, practical methods of glaze and body formulation; effects of various types of kilns and firing atmospheres on glaze materials, clay bodies, use of computer programs. Offered alternate fall semesters. Consent of instructor required. Prerequisite: 01C:170 or equivalent.

01C:174 Kiln Construction 3 s.h.
Kiln theory, design, construction methods. Offered alternate fall semesters. Consent of instructor required. Prerequisite: 01C:170 or equivalent.

01C:270 Individual Instruction in Ceramics arr.
Knowledge of clay and glaze composition, ability to fire kilns; and consent of instructor required.

01C:275 Ceramics Workshop arr.
Advanced graduate studio; critique of student work; visiting artists, field trips. Consent of instructor required. Prerequisite: 01C:171 or equivalent.

Design

01A:003 Basic Drawing and 01A:004 Basic Design are prerequisites for all design courses for art majors; 01B:001 Elements of Art and 01A:004 Basic Design are prerequisites for nonmajors.

01D:021 Problems in Design I: Form and Structure 2 s.h.
Materials, their formal and structural possibilities. Offered fall semesters. Prerequisite: 01A:004.

01D:022 Problems in Design II: Form and Function 2 s.h.
Products and how they are designed; modeling, graphic skills necessary to basic project development. Offered spring semesters. Prerequisite: 01A:004.

01D:028 Graphic Design 1 3 s.h.
Basic principles, techniques, and applications of graphic design, typography, composition, visual perception; creative, problem-solving aspects of graphic design. Consent of instructor required. Prerequisite: 01A:004.

01D:082 Introductory Computer Graphic Design 3 s.h.
Macintosh computer as creative tool for graphic design; composition, manipulation, organization of type and images; projects, demonstrations, discussions. Prerequisites: 01A:004 and 01D:028.
01D:110 Perspective and Shadow 3 s.h.
Theories of perspective, application of their basic principles to one-, two-, or three-point perspective scale drawings based on analytical specifications; principles of light, shadow; reflecting images. Offered summer sessions Consent of instructor required.

01D:125 Typography 3 s.h.
Principles and history; designing with type; functional, aesthetic dimensions of typography Consent of instructor required. Prerequisites: 01A:004, 01D:028, and 01D:133.

01D:128 Computer Graphic Design 3 s.h.
Composition, manipulation, organization of image and type using Macintosh computer platform as a creative tool for graphic design; nature, uses, limitations of digital technology. Prerequisites: 01A:004, and 01D:028 or consent of instructor.

01D:130 Design Seminar 1 s.h.
Current issues; planning of a public lecture series.

01D:133 Graphic Design II 3 s.h.
In-depth study and exploration of graphic design as a creative and problem-solving tool of visual communication; translation of ideas and concepts into comprehensible visual language. Consent of instructor required. Prerequisite: 01D:028.

01D:137 Environmental Design I 3 s.h.
Work in architectural, industrial; design, human and geographical environmental factors. Offered fall semesters of odd years Consent of instructor required. Prerequisites: 01D:021 and 01D:022, or equivalents. Same as 049:158.

01D:141 Interior Design I 3 s.h.
Relationship of interior space to architecture, environment, human element, color, material, furnishings, lighting. Offered spring semesters. Consent of instructor required. Prerequisites: 01D:021 and 01D:022.

01D:145 Industrial Design I 3 s.h.
Design related to human factors, methods of marketing, Offered fall semesters of even years. Consent of instructor required. Prerequisites: 01D:021 and 01D:022. Corequisites: 01D:137 and 01D:138.

01D:235 Graphic Design Workshop arr.
Complex problems in graphic design; planning, development, organization of integrated design programs. Consent of instructor required. Prerequisites: 01D:028, 01D:125, and 01D:133.

01D:238 Environmental Design II 3 s.h.
Continuation of 01D:137, which is prerequisite. May be repeated. Consent of instructor required.

01D:240 Individual Instruction in Design arr.
Graduate standing or consent of instructor required.

01D:242 Interior Design II 3 s.h.
Continuation of 01D:141, which is prerequisite. May be repeated. Offered fall semesters of even years. Consent of instructor required.

01D:246 Industrial Design II 3 s.h.
Design and development of products for mass consumption; emphasis on new developments in technology and materials. May be repeated Consent of instructor required. Prerequisite: 01D:145.

01D:249 Advanced Problems in Design 3 s.h.
Geometric graphics Graduate standing in design and consent of instructor required.

Drawing

01A:003 Basic Drawing and 01A:004 Basic Design are prerequisites for all drawing courses for art majors; 01B:001 Elements of Art is prerequisite for nonmajors.

*All B.F.A. students in drawing and painting must take 01F:106. Offered spring semesters.

01F:007 Life Drawing I 3 s.h.
Observational drawing of form in its spatial contexts; drawing in varied media; figural as well as non-figural content. Prerequisite: 01A:003.

01F:105 Life Drawing II 3 s.h.
Study of form in its spatial contexts; drawing in varied media; figural as well as non-figural content. Consent of instructor required. Prerequisite: 01F:007 or equivalent. Same as 049:157.

01F:106 Undergraduate Seminar in Drawing and Painting 3 s.h.
Contemporary issues, practical and professional skills, interdisciplinary concerns, education and career goals. Offered fall semesters. Consent of instructor required. Prerequisite: 01F:105.

01F:109 Life Drawing III 4 s.h.
Continuation of 01F:105; longer hours with model, setup. Consent of instructor required. Prerequisite: 01F:105.

01F:205 Individual Instruction in Drawing arr.
Graduate standing or consent of instructor required.

Intermedia, Video Art

01A:003 Basic Drawing and 01A:004 Basic Design are prerequisites for all intermedia and video art courses for art majors; 01B:001 Elements of Art is prerequisite for nonmajors.

01I:090 Intermedia I 3 s.h.
Interdisciplinary focus; emphasis on conceptual, environmental, video, performance art.

01I:091 Intermedia II 3 s.h.
Interdisciplinary investigation of materials and concepts in relation to time-based arts of performance, video, environments; individual and collaborative projects. May be repeated. Prerequisite: 01I:090.

01I:105 Video Art I 3 s.h.
Studio experimentation, individual projects. Consent of instructor required. Prerequisite: 01I:100 or equivalent.

01I:106 Video Art II 3 s.h.
Continuation of 01I:105, which is prerequisite.

01J:090 Intermedia I 3 s.h.
In-depth study and exploration of intermedia as creative and problem-solving tool of visual communication; translation of ideas and concepts into comprehensible visual language. Consent of instructor required. Prerequisite: 01D:028.

01J:105 Intermedia II 3 s.h.
Contemporary issues, practical and professional skills, interdisciplinary concerns, education and career goals. Offered fall semesters. Consent of instructor required. Prerequisite: 01J:090 or equivalent.

01J:205 Intermedia III 3 s.h.
Continuation of 01J:105; longer hours with model, setup. Consent of instructor required. Prerequisite: 01J:105.

01J:206 Intermedia IV 3 s.h.
Continuation of 01J:205, which is prerequisite.

Metalsmithing and Jewelry

01A:003 Basic Drawing and 01A:004 Basic Design are prerequisites for all metalsmithing and jewelry courses for art majors; 01B:001 Elements of Art is prerequisite for nonmajors.

01G:084 Introduction to Jewelry and Metal Arts 3 s.h.
Basic metalworking techniques, including sheet metal fabrication, hammer forming, hydraulic die forming, soldering, riveting, repousse, etching, roll printing, anodizing, stone setting, patination, creation of jewelry, functional, and nonfunctional objects using metals, other materials. Consent of instructor required. Prerequisites: 01A:003 and 01A:004, nonmajors, 01B:001.

01G:185 Intermediate Jewelry and Metal Arts 3 s.h.
Continuation of 01G:084, which is prerequisite; electroforming, electro-applique, casting, forging, fold forming, inlay, stone setting, mold making; creation of conceptual and/or functional objects, jewelry, and prototype pieces for production art work using metals, other materials.

01G:186 Advanced Jewelry and Metal Arts 3 s.h.
Enameling, laser print transfer/resist, latent usage, gold plating, kilnforms, production of pieces using 3-D computer modeling, prototyping, other CNC industrial technologies, photo etching, drop-out processes, historical and current trends in crafts. Recommended: 01G:084 and 01G:185.

01G:187 All Media/Experimental Workshop 3 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. Recommended: 01G:185 and 01G:186.

01G:188 Metals Graduate Workshop 3 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: 01G:185, 01G:186, and 01G:187, or equivalents.

01G:240 Individual Instruction in Metalsmithing and Jewelry 3 s.h.
Graduate standing or consent of instructor required.

Photography

01A:003 Basic Drawing and 01A:004 Basic Design are prerequisites for all photography courses for art majors; 01B:001 Elements of Art is prerequisite for nonmajors.

01L:034 Beginning Photography 3 s.h.
Camera, light meter, darkroom; history, theory of photography.

01L:101 Intermediate Photography 3 s.h.
Photographic materials, development of personal vision. Prerequisite: 01L:034 or equivalent.

01L:105 Advanced Photography 3 s.h.
Individual projects; development of personal vision. Consent of instructor required. Corequisite: 01L:100.

01L:107 Color Photography 3 s.h.
Basic color printing procedures. Prerequisite: 01L:101.

01L:129 Materials and Techniques Concepts and techniques, from historical and contemporary topics to understanding and applying nontraditional photographic processes and digital imaging. Consent of instructor required. Prerequisite: 01L:101.
and 01A:004. Recommended: 01L:034. Printing Consent of instructor required. Prerequisites: 01A:003
visual books on a commercial offset press. Consent of instructor
01L:135 Offset Productions Workshop 3 s.h.
Photographic, nonphotographic stencil techniques for silkscreen
01L:134 Silkscreen 3 s.h.
Printmaking Media includes lithography, intaglio, papermaking; art of the book; mechanics, practice, concepts of
printing. Consent of instructor required. Consent of instructor required. Prerequisite: 01L:155 or equivalent.
01L:231 Individual Instruction in Photography arr.
Consent of instructor required. Prerequisite: 01L:155 or equivalent.
01L:235 Digital Worlds III: 3D Worlds 3 s.h.
By combining Lightwave 3D software, digital video, and blue screen technology combined to explore advanced strategies for creating imaginative 3D digital worlds. Command of Macintosh computer and concepts of instructor required. Consent of instructor required. Prerequisite: 01L:199.
01L:236 Graduate Photography Workshop arr.
Projects, group critiques; readings. Consent of instructor required.

Printmaking

01A:003 Basic Drawing and 01A:004 Basic Design
Art and Art History
Course are prerequisites for all printmaking courses for art majors; 01B:001 Elements of Art is prerequisite for nonmajors.
01M:021 Undergraduate Intaglio and Relief I 3 s.h.
Concepts, techniques; Renaissance and contemporary ideas, methods; emphasis on metal plate printing, including etching, drypoint, engraving, softground, aquatint. Consent of instructor required.
01M:022 Undergraduate Intaglio and Relief II 3 s.h.
Individual instruction, with emphasis on development of personal visual languages; woodcut, metal plate, color prints. May be repeated Consent of instructor required. Prerequisite: 01M:021 or equivalent.
01M:031 Undergraduate Lithography 3 s.h.
Fundamental techniques, characteristics of lithography; basic direct drawing, processing, printing of stone and plate images in black and white. Consent of instructor required. Prerequisite: 01F:007 or equivalent.
01M:131 Lithography 3 s.h.
Technical, aesthetic characteristics; basic direct drawing, processing, printing of stone and plate images in black and white. Consent of instructor required. Prerequisite: 01F:007 or equivalent.
01M:132 Advanced Lithography 3 s.h.
Technical, aesthetic aspects; emphasis on color printing, indirect image-forming and photo-mechanical processes. Consent of instructor required. Prerequisite: 01M:131 or equivalent.
01M:141 Monotype 3 s.h.
Historical, technical, aesthetic aspects of unique non-matrix, printed images. Offered fall semesters. May be repeated. Consent of instructor required. Prerequisite: 01F:007 or equivalent.
01M:142 Monoprint 3 s.h.
Concepts, techniques in use of traditional and alternative printmaking media to produce unique, matrix-generated prints. May be repeated. Offered spring semesters. Consent of instructor required. Prerequisite: 01M:022 or equivalent.
01M:151 Foil Stamping I 3 s.h.
Participation in development of a new art form involving creation of original print and other works of art using hot stamped foil and Iowa Foil Printer. Consent of instructor required.
01M:152 Foil Stamping II 3 s.h.
Advanced aesthetic and technical research for creation of original prints and other works of fine art using hot stamped foil and other printmaking techniques; individual instruction. May be repeated. Consent of instructor required. Prerequisite: 01M:351 or equivalent.
01M:160 Special Workshop in Printmaking 2-3 s.h.
Issues, themes, or studio practice. Consent of instructor required.
01M:221 Graduate Print Workshops 3 s.h.
Orientation to campus facilities including lithography, intaglio, papermaking, art of the book; mechanics, practice, concepts of printmaking. Consent of instructor required. Consent of instructor required. Prerequisite: 01M:132.
01M:250 Individual Instruction in Printmaking arr.
01M:260 Graduate Printmaking Forum 1 s.h.
Individual student presentations of student work, with group critiques; visiting artist lectures, other topical events and discussions. Graduate seminar and consent of instructor required. Prerequisites: 01A:003 and 01A:004.
Sculture

01A:003 Basic Drawing and 01A:004 Basic Design
Art and Art History
Course are prerequisites for all sculpture courses for art majors; 01B:001 Elements of Art is prerequisite for nonmajors.
01N:005 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. GE: fine arts.
01N:016 Undergraduate Sculpture II 3 s.h.
Continuation of 01N:005; form, materials, processes, woodcarving, welding, stone carving and direct application; expanding concept development; contemporary sculptural formats, collaborative process. Prerequisite: 01N:005.
01N:017 Sculpture III 3 s.h.
Transition from professor-drive assignments to independent work; readings. Prerequisites: 01N:015 and 01N:016.
01N:018 Wood Carving Techniques 3 s.h.
Basic subtractive wood carving; wood identification, tool care; historical overview of carved wood in art history; work of contemporary sculptors who use carved wood. Prerequisites: 01N:015 and 01N:016.
01N:019 BFA Sculpture Workshop 3 s.h.
Independent work, critiques, personal and group readings. Consent of instructor required. Prerequisites: 01N:015; 01N:016, and 01N:017.
01N:140 Topics in Sculpture 3 s.h.
Projects, readings; specialized conceptual forms and issues in contemporary sculpture, such as public art, installation, performance. Consent of instructor required. Prerequisites: 01N:015 and 01N:016.
01N:150 Figure Modeling 3 s.h.
Exploration of the human form in clay on the live model, wire armature, portrait modeling, human anatomy. Prerequisites: 01A:003; 01A:004 and 01T:015.
01N:160 Mold Making 3 s.h.
All aspects of mold making-plaster, rubber, silicone; technical preparation for 01N:165. Consent of instructor required. Prerequisites: 01N:015 and 01N:016.
01N:165 Casting in Hot Metal and Metal Forming 3 s.h.
Foundry work, wax working, mold making, and processes. Prerequisites: 01A:003, 01A:004, 01N:015, and 01N:016.
01N:170 Stone Carving 3 s.h.
Techniques; use of hand and air tools, selection of stone. Prerequisites: 01N:015 and 01N:016.
01N:260 Individual Instruction in Sculpture arr.
01N:261 Graduate Sculpture 1 3 s.h.
Study course for graduate sculptors and nongraduate student; emphasis on gaining a more profound critical and historical perspective of student’s own work and work of peers, learning new technical processes, using new materials. Consent of instructor required.
01N:264 Graduate Sculpture Workshop 3 s.h.
Seminar for graduate sculptors and nongraduate student; lectures, readings, discussions, research projects concerning contemporary critical issues in 20th and 21st-century sculptural history; topics vary. Consent of instructor required. Prerequisite: 01N:261.

Interdepartmental Courses

01P:001 Cooperative Education Internship 0 s.h.
01P:100 Internship Topics 3 s.h.
Conceptual or media issues that cross traditional area disciplines; team taught. Prerequisites: 01A:003 and 01A:004.
01P:134 Scene Design I 3 s.h.
Introduction to design process; research, rendering, model building. Same as 049:134.

Papermaking

01X:110 Papermaking 3 s.h.
History, fundamental techniques of Western, Eastern hand papemaking; projects in traditional sheet forming, paper chemistry, creative techniques. Offered fall semesters. Consent of instructor required. Same as 108:110.
01X:120 Advanced Papermaking 3 s.h.
Traditional Eastern; Western sheet forming techniques, history, aesthetics; emphasis on fiber selection, preparation and large sheet formats. Offered spring semesters. Consent of instructor required. Prerequisite: 01X:110. Same as 108:111.
01X:160 Artist’s Books Workshop 3 s.h.
Presentations by book specialists; readings, discussions, lectures on issues of art history, contemporary criticism; hands-on bookmaking; group critiques of student work. Consent of instructor required. Same as 108:131.
01X:210 Individual Instruction in Papemaking/Paperworks arr.
Consent of instructor required. Prerequisite: 01X:120.

Bookbinding

01Y:150 Non-Adhesive Bookbinding 3 s.h.
Hands-on production of basic nonadhesive structures; history and terminology of bookbinding. Same as 108:150.
01Y:151 Case Bookbinding 3 s.h.
Hands-on production of case-bound structures; basic tools and terminology. Same as 108:151.
01Y:152 Advanced Book Structures 3 s.h.
Sewing, covering, shaping techniques. Consent of instructor required. Prerequisite: 01Y:150 or 01Y:151 or 108:150 or 108:151. Same as 108:152.
01Y:153 Studies in Bookbinding 3 s.h.
Topics related to hand bookbinding. Same as 108:153.
01Y:154 Non-Traditional Bookbinding 3 s.h.
Innovative binding structures, emphasis on nontraditional techniques. Same as 108:154.
01Y:155 Bookbinding: Historical Book Structures 3 s.h.
Same as 108:155.

Calligraphy

01Z:140 Calligraphy: Gothic Hands 3 s.h.
Introduction to the basic tools [brush-edged nib] disciplines and usage of calligraphy, using the Fraktur hand (a style of Gothic) as model; emphasis on proper practice methods. Same as 108:140.
01Z:141 Calligraphy: Expressive Forms 3 s.h.
Adaptation of historical Western-style letterforms to contemporary format; brush, broad-edge pen. Prerequisite: 01Z:140 or equivalent. Same as 108:141.
01Z:143 Calligraphy: Foundational Hands 3 s.h.
Fundamental calligraphic skills using Roman Majuscule, Humanistic Minuscule and Italic Basic layout and color theory, incorporated into letter practice. Same as 108:143.
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Art Education
01E:195 Methods and Material: Art for the Classroom Teacher 2 s.h.
Techniques, processes in art for teachers; studio projects. Same as 07E:122.

01E:196 Concepts in Art Education 3 s.h.
Overview; child, adolescent art; relationships with art, education; survey of literature; community art teaching experiences.

01E:198 Art Education Studio 3 s.h.
Art training related to processes of elementary, secondary school art teaching; studio methods applied to teaching children, adolescents. Prerequisite: 01E:196. Corequisite for those in the Teacher Education Program: 07S:090.


ASIAN LANGUAGES AND LITERATURE
Chair: Philip Lutgendorf
Professor: W. South Coblin
Associate professors: Chuanren Ke, Robert W. Leutner, Tonglin Lu, Philip Lutgendorf, Maureen Robertson, Frederick Smith, Mitsuhiro Yoshimoto
Assistant professor: Yukiko Abe Hatasa
Lecturers: Yasumi Kintyan, Jing Shen
Affiliated faculty: Wendi Adamak (Religion), David Arkush (History), Robert Baird (Religion), Jeffrey Cox (History), William Davies (Linguistics), Alice Davison (Linguistics), Michael Everson (Education), Paul Greenough (History), Chong Lim Kim (Political Science), Ja-en Kim (Sociology), Scott McNabb [Education], Judy Pollock (Journalism and Mass Communication), Robert Roxer (Art and Art History), Gerard Rushon (Geography), Janine Anderson Sawa (Religion), Scott Schnell (Anthropology), Jael Sillian (Women’s Studies), Stephen Viastos (History), Thomas Waltz (Social Work)
Undergraduate degrees: B.A. in Asian Languages and Literature, Asian Studies
Undergraduate nondegree programs: minors in Asian Languages, Asian Studies
Graduate degree: M.A. in Asian Civilizations
Web site: http://www.uiowa.edu/asia

Undergraduate Programs
The Department of Asian Languages and Literature offers two programs leading to the Bachelor of Arts degree. The major in Asian languages and literature is intended for students who want to concentrate on one of the language and literature programs offered by the department. The major in Asian studies is primarily for those interested in studying the culture and civilization of traditional and modern East Asia or South Asia through the many courses offered in the department and related departments.

Both programs offer students the opportunity to develop advanced skills in an Asian language while they study the people, literatures, and cultures of Asia. Many students find that they can combine an Asian studies major conveniently with a major in history, political science, art history, religion, sociology, journalism, business, anthropology, or other disciplines.

Graduates of both programs have found careers in education, government, communications, business, and other fields in the United States and abroad. The programs also provide 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 department encourages its undergraduate majors to participate in study abroad programs in Asia and has entered into exchange agreements with several universities and institutes there. Every effort is made to facilitate transfer of credit for students studying abroad.

B.A. in Asian Languages and Literature (Chinese, Hindi, Japanese, Sanskrit)

Requirements for the B.A. in Asian languages and literature range from 26 to 30 semester hours, depending on the track. Transfer work is accepted to satisfy requirements of the major, but at least half of the semester hours of advanced work required for the major must be earned at The University of Iowa.

STUDENTS OF CHINESE
039:010-011 Second-Year Chinese: First-Second Semester 10 s.h.
039:105-106 Third-Year Chinese: First-Second Semester 10 s.h.
039:141 Chinese Literature: Poetry 3 s.h.
039:142 Chinese Literature: Prose or
039:180 Modern Chinese Writers 3 s.h.

STUDENTS OF HINDI
039:033-034 Second-Year Hindi: First-Second Semester 8 s.h.
039:184-185 Third-Year Hindi: First-Second Semester 6 s.h.
039:136 Indian Literature 3 s.h.

Additional advanced courses (100-level) in South Asian studies, including 1-3 s.h. of independent study (a list of advanced courses is available from the department) 13 s.h.

*Students may substitute 6 semester hours of 100-level courses in South Asian studies, with the approval of their major adviser.

STUDENTS OF JAPANESE
039:010-011 Second-Year Japanese: First-Second Semester 10 s.h.
039:105-106 Third-Year Japanese: Conversation I-II 6 s.h.
039:107-108 Third-Year Japanese: Reading and Writing I-II 6 s.h.
Advanced courses in Japanese literature taught by faculty members in the department 9 s.h.
An advanced course in Japanese language or linguistics taught by a faculty member in the department 3 s.h.
(Lists of advanced courses are available from the department.)

STUDENTS OF SANSKRIT
039:023-024 Second-Year Sanskrit: First-Second Semester 6 s.h.
039:186-187 Third-Year Sanskrit: First-Second Semester 6 s.h.

039:136 Indian Literature 3 s.h.
039:163 Indian Religious Texts 3 s.h.
Additional advanced courses (100-level) in South Asian studies, including 1-3 s.h. of independent study (a list of advanced courses is available from the department) 12 s.h.

*Students may substitute 6 semester hours of advanced courses (100-level) in South Asian studies, with the approval of their major adviser.

Students of Sanskrit and Hindi are urged to fulfill the General Education Program requirement in historical perspectives (3 semester hours) by completing 016:007 Civilizations of Asia: South Asia.

B.A. in Asian Studies (China, Japan, or South Asia)

Requirements for the B.A. in Asian studies range from 28 to 34 semester hours, depending on the track. Transfer work is accepted to satisfy requirements of the major, but at least half of the semester hours of non-language course work required for the major must be earned at The University of Iowa.

Requirements for each track are as follows.

CHINA
039:010-011 Second-Year Chinese: First-Second Semesters 10 s.h.
039:153 Traditional China or
039:154 Modern China: 1800-Present 3 s.h.
Other advanced courses (100-level) on East Asia [a list of advanced courses is available from the department] 15 s.h.

JAPAN
039:010-011 Second-Year Japanese: First-Second Semester 10 s.h.
Advanced courses (100-level) in Japanese studies 9 s.h.
Advanced courses (100-level) on East Asia and Japan 15 s.h.
(Lists of advanced courses are available from the department.)

SOUTH ASIA
039:023-024 Second-Year Sanskrit: First-Second Semester 6 s.h.
or
039:033-034 Second-Year Hindi: First-Second Semester 8 s.h.
039:176 South Asia Social Science History 3 s.h.
One course with South Asia as the focus in a related area, discipline, or method emphasizing social science such as anthropology, Third World development, economics, geography, linguistics, political science, sociology, or women’s studies (with adviser’s approval) 3 s.h.

Additional advanced courses (100-level) on South Asia (a list of courses is available in the department, others...
may be approved by the student’s adviser) 18 s.h.
The department strongly recommends that students include the following courses when completing the General Education Program.

016:007 Civilizations of Asia: South Asia 3-4 s.h.
032:008 Asian Humanities: India 3 s.h.
Advanced undergraduates are encouraged to register for 039:250 South Asian Research Seminar each semester it is offered.

Four-Year Graduation Plan

The following checklists 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. in Asian languages and literature
Before the third semester begins: for Chinese and Japanese majors, language work begun (Hindi and Sanskrit majors may begin language work their sophomore year) and at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: at least first-year language competency and at least one-half of the semester hours required for graduation
Before the seventh semester begins: at least second-year language competency and at least three-quarters of the semester hours required for graduation
Before the eighth semester begins: at least third-year, first-semester language competency and one additional course in the major (two additional courses in the major for Japanese)
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. in Asian Studies
Before the third semester begins: at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: at least one-half of the semester hours required for graduation
Before the seventh semester begins: at least first-year language competency, three courses required for the major, and at least three-quarters of the semester hours required for graduation
Before the eighth semester begins: at least second-year, first-semester language competency and five courses required for 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
Students with a grade-point average of 3.20 or higher are encouraged to enroll in the University Honors Program. With consent of the department chair and a faculty sponsor (an Asian specialist from any department), students register for 039: 191 Honors Tutorial and 039:195 Senior Honors Thesis. To receive a B.A. with honors, students must complete an acceptable thesis based on original research in an appropriate area of Asian studies.

Minor in Asian languages
A minor in Asian languages requires a minimum of 15 semester hours with a grade-point average of at least 2.00. Of the 15 semester hours, at least 12 must be taken at The University of Iowa in advanced courses. Students may earn minors in Chinese, Hindi, Japanese, or Sanskrit.

CHINESE
The following courses are considered advanced for the minor.
039:010 Second-Year Chinese: First Semester 5 s.h.
039:011 Second-Year Chinese: Second Semester 5 s.h.
HINDI
Students of Hindi are permitted to complete the advanced course requirement with 11 semester hours, and the minor with a total of 14 semester hours.
The following courses are considered advanced for the minor.
039:033 Second-Year Hindi: First Semester 4 s.h.
039:034 Second-Year Hindi: Second Semester 4 s.h.
JAPANESE
The following courses are considered advanced for the minor.
039:010 Second-Year Japanese: First Semester 5 s.h.
039:011 Second-Year Japanese: Second Semester 5 s.h.
One of the advanced courses must be chosen from literature or linguistics courses. A list of approved courses for the minor is available in the department.

SANSKRIT
The following courses are considered advanced for the minor.
039:022 First-Year Sanskrit: Second Semester 4 s.h.
039:023 Second-Year Sanskrit: First Semester 3 s.h.
039:024 Second-Year Sanskrit: Second Semester 3 s.h.

Minor in Asian Studies
A minor in Asian studies requires a minimum of 15 semester hours with a grade-point average of at least 2.00. Of the 15 semester hours, at least 12 must be taken at The University of Iowa in advanced courses. Courses numbered 039:100 or 039:100 and above are considered advanced for the minor. Students are encouraged to take 039:055 or 039:056 or 039:057 Civilizations of Asia (China, Japan, or South Asia), or 039:018 or 039:019 or 039:020 Asian Humanities (India, China, or Japan) as their lower-level course.

Certificate in International Business
Students of Chinese, Japanese, and Hindi may participate in a program leading to a Certificate in International Business, offered jointly by the Henry B. Tippie College of Business and the College of Liberal Arts. The wide range of electives permits undergraduate students to tailor the program to their individual interests and to complement majors in the Colleges of Business and Liberal Arts (see the College of Business section of the Catalog).

Teaching Licensure in Chinese and Japanese
Chinese and Japanese majors interested in licensure to teach in elementary and/or secondary schools must successfully complete the requirements for a major, or the equivalent, plus designated pedagogy courses in the Department of Asian Languages and Literature. In addition, students must be admitted to the College of Education’s foreign language teacher education program. Several courses in the College of Education are required, as is one semester of student teaching, taken in the senior year. Contact the College of Education’s Division of Curriculum and Instruction for more information.
Students who plan to use a Chinese or Japanese minor to teach at the elementary and/or secondary level must contact the College of Education concerning requirements.

Language for Nonmajors
The department offers several opportunities for students who wish to study the languages of Asia and South Asia. Language study is available in Chinese, Hindi, Japanese, Korean, and Sanskrit.
Students who have had experience with Japanese should take the Japanese Foreign Language Placement Test, offered during summer orientation programs and at other times during the year by Evaluation and Examination Service. The test helps determine the level at which a student should begin Japanese language study at The University of Iowa. Students with backgrounds in Chinese, Hindi, Korean, or Sanskrit may receive individual evaluations from the department.

Foreign language Requirement
Students may satisfy the General Education Program’s foreign language requirement in Chinese, Hindi, Japanese, Sanskrit, and Korean.
The Chinese sequence 039:008, 039:009, and 039:010 is most appropriate for students who
have had no Chinese. Students who know some Chinese as a family member, from high school, or from other study may wish to take 039:100-101 followed by 039:010 or 039:105. Additional course work is available, including classical Chinese and business Chinese.

The Hindi sequence 039:031, 039:032, and 039:033 satisfies the foreign language requirement. Additional courses are available for students who want to learn more.

The Japanese sequence 39J:008, 39J:009, and 39J:010 is most appropriate for students who have not studied Japanese. Those with some prior study should take 39J:001, 39J:009, and 39J:010 to complete the foreign language requirement. Additional course work is available, including classical Japanese.

The Sanskrit sequence 039:021, 039:022, 039:023, and 039:024 satisfies the foreign language requirement. Additional courses are available.

Students who complete four semesters of Korean can ask for evaluation of their skills as satisfaction of the foreign language requirement through the Liberal Arts Office of Academic Programs.

**Graduate Program**

The graduate program in Asian civilizations prepares students for doctoral study in a variety of disciplines. It is also of interest to students with nonacademic career plans for whom graduate-level work in an Asian language and culture would be useful. Students in professional programs are encouraged to consider working concurrently toward a degree in Asian civilizations. Application materials are available from the department, as is specific information on program tracks (Hindi language and literature; Sanskrit language and literature; South Asian studies; Chinese literature; Chinese linguistics; teaching Chinese as a foreign language; interdisciplinary Chinese studies; teaching Japanese as a foreign language; Japanese literature and culture; and interdisciplinary Japanese studies).

The Master of Arts in Asian Civilizations requires a minimum of 30 semester hours of approved course work, 24 of which must be taken in residence at The University of Iowa. By the end of the first semester in residence, students propose a plan of study developed in consultation with their adviser and in accordance with guidelines for specializations within the program.

All students must maintain a grade-point average of 3.00 or higher. Detailed information on degree requirements is sent to all applicants.

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, or Sanskrit, defined generally as corresponding to the fourth-year level of language coursework in Chinese or Japanese and the third-year level in Hindi and Sanskrit.

**Admission**

Applicants for graduate admission must meet the general admission requirements of the Graduate College, except that a grade-point average of at least 2.75 is required for conditional admission, and at least 3.00 for regular admission. Applicants are required to submit a statement of purpose, a research paper written in English, three letters of recommendation, and GRE General Test scores. Applicants whose native language is not English must submit a TOEFL score of at least 580 on the paper-based test or 237 on the computer-based test. Applicants to the Japanese program must score at least 590 on the TOEFL paper-based test or 243 on the computer-based test.

Both international and noninternational graduate applications requesting financial support for the following academic year are due February 1. All other applications are accepted until April 15 for fall admissions and October 1 for spring admissions.

**Financial Aid**

Undergraduate and graduate students have access to the following financial aid and scholarship resources. Contact the department for application information:

- **Cheng/Liu Scholarship:** Incoming first-year undergraduates who plan to major in Chinese language, literature, or culture may apply. The $1000 award is based on merit, and requires a high school grade-point average of at least 3.00 and a score of at least 27 on the ACT or 1150 on the SAT. Any student who has studied Chinese in high school is eligible to apply. Deadline is in early spring.

- **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 Asian studies students. Applications are available late spring, with scholarships to be awarded the following fall semester.

- **Foreign Language and Area Studies Fellowships:** Only American 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 study language.

- **Graduate Assistantships:** The department offers teaching assistantships or research 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, Japanese, or Sanskrit. Ten awards of $2,500 are made each summer. Applications are due March 1.

**Undergraduate Study Abroad Programs**

The department strongly urges its students to seek opportunities for summer language study and study abroad in order to accelerate the process of language acquisition. 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 Republic of Taiwan offers scholarships for two students to live and study in Taiwan 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.

Many students participate in summer, semester-long, and year-long study abroad programs in India, China, and Japan offered through other universities. In many cases credit is transferable, and it is possible for a student to study abroad and still complete a 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.

**Internships**

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 Career Development Services office keeps a list of internships.

**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 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.

The International Crossroads Community, located in Hillcrest Residence Hall, includes a Japanese House that is a focal point for activities among both resident and nonresident students and the Japanese Student Association, including weekly dinners.

**Library Facilities**

Since 1960 the Main Library has routinely acquired most American titles in Asian studies and selected overseas scholarly publications in English and other Western Languages. The library's Asian collection includes approximately 80,000 volumes in Asian languages and about 140,000 Western-language volumes on Asian subjects. Since 1975, the University has been a member of the Library of Congress Foreign Currency Exchange Program for Indian books and periodicals. 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.

**Courses**

039:000 Cooperative Education Internship 0 s.h.

### Undergraduate Language

#### CHINESE

039:008 First-Year Chinese: First Semester 5 s.h.
Sound system of Mandarin Chinese; basic sentence patterns; aural understand, speaking, reading, writing; same content as 039:115. Open only to undergraduates. Offered fall semesters. GE: foreign language.

039:009 First-Year Chinese: Second Semester 5 s.h.
Continuation of 039:008, which is prerequisite; same content as 039:116. Open only to undergraduates. Offered spring semesters. GE: foreign language.

039:010 Second-Year Chinese: First Semester 5 s.h.
Continuation of 039:009, which is prerequisite; focus on all skills; same content as 039:117. Open only to undergraduates. Offered fall semesters. GE: foreign language.

039:011 Second-Year Chinese: Second Semester 5 s.h.
Continuation of 039:010, which is prerequisite; same content as 039:118. Open only to undergraduates. Offered spring semesters. GE: foreign language.

039:010 Advanced First-Year Chinese: First Semester 5 s.h.
Previous knowledge of Chinese used as foundation for study of the language; for students with aural/oral fluency in Mandarin Chinese or non-Mandarin dialect. GE: foreign language. Offered fall semesters.

039:101 Advanced First-Year Chinese: Second Semester 5 s.h.
Continuation of 039:100, which is a prerequisite. GE: foreign language. Offered spring semesters. Consent of instructor required.

039:105 Third-Year Chinese: First Semester 5 s.h.
Reading of advanced modern Chinese texts; speaking, writing. GE: foreign language. Offered fall semesters. Prerequisite: 039:011 or 039:118.

039:106 Third-Year Chinese: Second Semester 5 s.h.
Continuation of 039:105, which is prerequisite. Offered spring semesters.

039:108 Classical Chinese: First Semester 3 s.h.
Late Zhou period; readings from Zhanqian, Mengzi, Zhuangzi; focus on grammatical analysis, exact translation. Offered fall semesters. Prerequisite: 039:011.

039:109 Classical Chinese: Second Semester 3 s.h.
Continuation of 039:108, which is prerequisite. Offered spring semesters.

039:128 Fourth-Year Chinese: First Semester 3 s.h.
Proficiency through oral and written discussions of modern texts. Offered fall semesters. Prerequisite: 039:106 or equivalent.

039:129 Fourth-Year Chinese: Second Semester 3 s.h.
Offered spring semesters. Prerequisite: 039:128.

039:130 Business Chinese 3 s.h.
Skill development in communicating with Chinese counterparts; focus on oral bargaining, authentic materials (invoices, price lists, business letters, etc.). Offered spring semesters. Prerequisite: 039:011.

039:165 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. May be repeated. Prerequisite: 039:129.

039:166 Fifth-Year Chinese: Second Semester 3 s.h.
Continuation of 039:165, which is prerequisite. May be repeated.

#### HINDI

039:031 First-Year Hindi: First Semester 5 s.h.
Reading, writing, speaking; same content as 039:123. Open only to undergraduates. Offered fall semesters of odd years. GE: foreign language.

039:032 First-Year Hindi: Second Semester 5 s.h.
Continuation of 039:031, which is prerequisite; same content as 039:124. Open only to undergraduates. Offered spring semesters of even years. GE: foreign language.

039:033 Second-Year Hindi: First Semester 4 s.h.
Emphasis on conversation, reading of folktales and modern short stories; same content as 039:126. Open only to undergraduates. Offered fall semesters of even years. GE: foreign language. Prerequisite: 039:032.

039:034 Second-Year Hindi: Second Semester 4 s.h.
Continuation of 039:033, which is prerequisite; same content as 039:127. Open only to undergraduates. Offered spring semesters of odd years. Prerequisite: 039:033.

039:184 Third-Year Hindi: First Semester 3 s.h.
Advanced level Hindi texts; speaking, writing. Offered fall semesters. Prerequisite: 039:034 or 039:127.

039:185 Third-Year Hindi: Second Semester 3 s.h.
Continuation of 039:184, which is a prerequisite. Offered spring semesters.

#### JAPANESE

039:001 Elementary Japanese: Review 3 s.h.
Review of material presented in 391:008. Open only to first-year students and new transfer students. Prerequisite: Japanese language study.

039:008 First-Year Japanese: First Semester 5 s.h.
Modern Japanese; same content as 391:115. Open only to undergraduates. Offered fall semesters. GE: foreign language.

039:009 First-Year Japanese: Second Semester 5 s.h.
Continuation of 039:008, which is prerequisite; same content as 391:116. Open only to undergraduates. Offered spring semesters. GE: foreign language.

039:010 Second-Year Japanese: First Semester 5 s.h.
Continuation of 039:009, which is prerequisite; focus on all skills; same content as 039:117. Open only to undergraduates. Offered fall semesters. GE: foreign language.

039:011 Second-Year Japanese: Second Semester 5 s.h.
Continuation of 039:010, which is prerequisite; same content as 039:118. Open only to undergraduates. Offered spring semesters. GE: foreign language.

039:105 Third-Year Japanese: First Semester 5 s.h.
Reading of advanced modern Japanese texts; speaking, writing. GE: foreign language. Offered fall semesters. Prerequisite: 039:011 or 039:118.

039:106 Third-Year Japanese: Conversation II 3 s.h.
Continuation of 039:105, which is prerequisite. Offered spring semesters.

039:107 Third-Year Japanese: Reading and Writing I 3 s.h.
Modern Japanese; focus on reading, writing. Offered fall semesters. Prerequisite: 039:106.

039:108 Third-Year Japanese: Reading and Writing II 3 s.h.
Continuation of 039:107, which is prerequisite. Offered spring semesters.

039:119 Classical Japanese: First Semester 3 s.h.
Grammar, readings in classical Japanese. Consent of instructor required. Offered fall semesters. Prerequisite: 391:106.

039:120 Classical Japanese: Second Semester 3 s.h.
Continuation of 039:119, which is prerequisite. Offered spring semesters.

039:121 Fourth-Year Japanese: First Semester 3 s.h.
Modern Japanese; emphasis on communication skills. May be repeated. Offered fall semesters. Prerequisites: 391:106 and 391:108.

039:122 Fourth-Year Japanese: Second Semester 3 s.h.
Continuation of 039:121, which is prerequisite. May be repeated. Offered spring semesters.

039:131 Fifth-Year Japanese: First Semester 3 s.h.
Improvement of Japanese for academic and professional purposes. Offered fall semesters. May be repeated. Prerequisite: 391:121 or consent of instructor.

039:132 Fifth-Year Japanese: Second Semester 3 s.h.
Continuation of 039:131. Offered spring semesters. May be repeated.

#### SANSKRIT

039:021 First-Year Sanskrit: First Semester 4 s.h.
Grammar, basic vocabulary; elementary readings; same content as 039:110. Open only to undergraduates. Offered fall semesters of even years. GE: foreign language.

039:022 First-Year Sanskrit: Second Semester 4 s.h.
Readings in epic and story literature; same content as 039:111. Open only to undergraduates. Offered spring semesters of odd years. GE: foreign language. Prerequisite: 039:021.

039:023 Second-Year Sanskrit: First Semester 3 s.h.
Readings in epic and puranic texts; same content as 039:112. Open only to undergraduates. Offered fall semesters of odd years. GE: foreign language. Prerequisite: 039:022 or consent of instructor.

039:024 Second-Year Sanskrit: Second Semester 3 s.h.
The Bhagavad Gita and related religious/philosophical texts; same content as 039:113. Open only to undergraduates. Offered spring semesters of even years. GE: foreign language. Prerequisite: 039:023 or consent of instructor.

039:186 Third-Year Sanskrit: First Semester 3 s.h.
Readings in philosophical and literary Sanskrit. Offered fall semesters. Prerequisite: 039:024 or 039:113.

039:187 Third-Year Sanskrit: Second Semester 3 s.h.
Continuation of 039:186, which is prerequisite. Offered spring semesters.

#### KOREAN

039:040 First-Year Korean: First Semester 4 s.h.
Modern Korean; speaking, listening, reading, writing. Offered fall semesters.

039:041 First-Year Korean: Second Semester 4 s.h.
Continuation of 039:040, which is prerequisite. Offered spring semesters.

039:042 Second-Year Korean: First Semester 4 s.h.
Continuation of 039:041, which is prerequisite; conversation and readings in intermediate Korean language. Korean culture.

039:043 Second-Year Korean: Second Semester 4 s.h.
Continuation of 039:042, which is prerequisite.
Graduate Language

ChINESE
39J:115 Beginning Chinese for Graduate Students I 5 s.h.
Second system of Mandarin Chinese, basic sentence patterns; aural understanding, speaking, reading, writing; same content as 039:008. Graduate standing required. Offered fall semesters.

39J:116 Beginning Chinese for Graduate Students II 5 s.h.
Continuation of 39J:115; same content as 039:009. Graduate standing required. Offered spring semesters. Prerequisite: 039:009 or 39J:115.

39J:117 Beginning Chinese for Graduate Students III 5 s.h.
Continuation of 039:116; same content as 039:010. Graduate standing required. Offered fall semesters. Prerequisite: 039:010 or 39J:116.

39J:118 Beginning Chinese for Graduate Students IV 5 s.h.
Continuation of 039:117; same content as 039:011. Graduate standing required. Offered spring semesters. Prerequisite: 039:010 or 39J:117.

39J:119 Advanced Classical Chinese 3 s.h.
Readings from Zuozhoan, Guoyu, other texts of early classical period. Prerequisite: 039:109.

39J:200 Literary Chinese I 3 s.h.
Readings from literary and historical texts of Han and Wei-Jin periods. Prerequisite: 039:109 or consent of instructor.

HINDI
39J:113 Beginning Hindi for Graduate Students I 5 s.h.
Reading, writing, speaking; same content as 039J:031. Graduate standing required. Offered fall semesters of odd years.

39J:114 Beginning Hindi for Graduate Students II 5 s.h.
Continuation of 39J:031 01039J:123, which is prerequisite; same content as 039J:032 Graduate standing required. Offered spring semesters of odd years.

39J:115 Intermediate Hindi for Graduate Students III 4 s.h.
Emphasis on conversation, reading of folktales and modern short stories; same content as 039J:033. Graduate standing required. Offered fall semesters of even years.

39J:116 Intermediate Hindi for Graduate Students IV 4 s.h.
Continuation of 039J:035 or 039J:126, which is prerequisite; same content as 039J:034. Graduate standing required. Offered spring semesters of odd years.

JAPANESE
39J:115 Beginning Japanese for Graduate Students I 5 s.h.
Modern Japanese; same content as 39J:008B. Graduate standing required. Offered fall semesters.

39J:116 Beginning Japanese for Graduate Students II 5 s.h.
Continuation of 39J:115; same content as 039J:009. Graduate standing required. Offered spring semesters. Prerequisite: 39J:008 or 39J:115.

39J:117 Beginning Japanese for Graduate Students III 5 s.h.

39J:118 Beginning Japanese for Graduate Students IV 5 s.h.

SANSKRT
39J:110 Beginning Sanskrit for Graduate Students I 4 s.h.
Grammar, basic vocabulary; elementary readings; same content as 039:021. Graduate standing required. Offered fall semesters.

39J:111 Beginning Sanskrit for Graduate Students II 4 s.h.
Readings in epic and story literature; same content as 039:022. Graduate standing required. Offered spring semesters. Prerequisite: 039:021 or 039:110.

39J:112 Beginning Sanskrit for Graduate Students III 3 s.h.
Readings in epic and puranic texts; same content as 039:023. Graduate standing required. Offered fall semesters. Prerequisite: 039:022 or 039:111.

39J:113 Beginning Sanskrit for Graduate Students IV 3 s.h.
The Bhagavadgita and related religious/philosophical texts; same content as 039:024. Graduate standing required. Offered spring semesters. Prerequisite: 039:023 or 039:112.

Literature

39J:005 Asian Religious Classics 3 s.h.
Same as 032:005.

39J:009 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). Open only to first- and second-semester students.

39J:050 Major Texts in World Literature III 3 s.h.
Literatures of non-Euro-American cultures. GE: humanities. Same as 088:042.

39J:130 Japanese Literary Translation 3 s.h.
Workshop from 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. Prerequisite: 39J:009 or equivalent.

39J:136 Indian Literature 3 s.h.
Readings from medieval and modern periods in English translation. May be repeated. Same as 032:177.

39J:141 Chinese Literature: Poetry 3 s.h.
Readings in classical and modern Chinese poetry in English translation. Same as 048:141.

39J:141 Traditional Japanese Literature in Translation 3 s.h.
From seventh century to early modern times.

39J:142 Chinese Literature: Prose 3 s.h.
Readings in Chinese prose, primarily fiction, from third century B.C. to 1900 A.D., in English translation.

39J:142 Modern Japanese Fiction in Translation 3 s.h.
Nineteenth century to present. Same as 048:142.

39J:143 Topics in Japanese Literature in Translation 3 s.h.
Content varies. May be repeated.

39J:144 Major Authors in Modern Japanese Literature 3 s.h.
Soseki, Ougi, Kata Tanizaki, Abe, Oe; major works in English translation.

39J:145 The Tale of Genji 3 s.h.
Close reading in English of Murasaki Shikibu’s Tale of Genji; literary and social contexts; later reception.

39J:146 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.

39J:158 East-West Literary Relations 3 s.h.
Topics in cross-cultural study based in Asian/Euro-American literary and film texts. Same as 048:158.

Same as 032:183.

39J:180 Modern Chinese Writers 3 s.h.
Readings from fiction; in English translation.

39J:182 Asian-American Literature 3 s.h.
Immigration history, ethnic identities, contemporary American culture as represented in literary texts and films by Asian-Americans. Same as 048:182.

39J:184 Religious Themes in Japanese Literature 3 s.h.
Same as 032:184.

39J:192 East Meets West - A Cross-Cultural Course 3 s.h.
Overview of cross-cultural perceptions in modern period based on films, literary and philosophical texts from East and West. Same as 048:192.

39J:200 Seminar in Chinese Fiction 3 s.h.
Novels, novelettes, 16th to 18th centuries (Ming and Qing periods). Prerequisite: ability to read original texts.

39J:241 Seminar in Chinese Literature 3 s.h.
Prerequisites: two years of modern Chinese and one year of classical Chinese, or equivalents. Same as 048:441.

39J:244 Seminar: Modern Chinese Literature and Cinema 3 s.h.
Role played by cinematic icons and topologies in the discourse of modernity in China. May be repeated.

39J:245 Seminar in Japanese Literature 3 s.h.
May be repeated. Consent of instructor required. Prerequisite: three years of Japanese.

39J:251 Readings in Modern Japanese 3 s.h.
Readings in modern Japanese. May be repeated. Consent of instructor required.

39J:252 Readings in Japanese Literary Texts 3 s.h.
May be repeated. Consent of instructor required. Prerequisite: 39J:119 or 039:281.

Civilization

Instruction is in English.

39J:006 Introduction to Buddhism 3 s.h.
Same as 052:006.

39J:016 Asian Art and Culture 3 s.h.
GE: fine arts or foreign civilization and culture or historical perspectives. Same as 01H:016.

39J:018 Asian Humanities: India 3 s.h.
Introduction to four thousand years of South Asian civilization. GE: foreign civilization and culture or humanities. Same as 032:009.

39J:019 Asian Humanities: China 3 s.h.
Literary and philosophical texts of China in English translation. GE: foreign civilization and culture or humanities. Same as 032:009.

39J:020 Asian Humanities: Japan 3 s.h.
Literary texts, related arts of premorden Japan. GE: foreign civilization and culture or humanities. Same as 032:009.

39J:030 Introduction to East Asian Art 3 s.h.
History of visual arts of China, Korea, Japan; chronological and geographical approaches; emphasis on understanding the arts within the cultures that produce them. Prerequisite: 039:016 or 01H:016 or equivalent or consent of instructor. Same as 01H:030.

39J:055 Civilizations of Asia: China 3 s.h.
GE: foreign civilization and culture or historical perspectives. Same as 016:008.

39J:056 Civilizations of Asia: Japan 3-4 s.h.
GE: foreign civilization and culture or historical perspectives. Same as 016:006.

39J:057 Civilizations of Asia: South Asia 3-4 s.h.
Pre-modern and modern topics in history, art, religion, philosophy, politics, and culture of India, nearby states. GE: foreign civilization and culture or historical perspectives. Same as 016:007.

39J:064 Living Religions of the East 3 s.h.
GE: foreign civilization and culture or historical perspectives. Same as 052:004.

39J:120 Chinese Painting I 3 s.h.
Same as 01H:120.

39J:121 Chinese Painting II 3 s.h.
Same as 01H:121.

39J:123 Japanese Painting 3 s.h.
Same as 01H:23.

39J:125 Japanese Society and Culture 3 s.h.
GE: foreign civilization and culture. Same as 113:125.
ASTRONOMY
See “Physics and Astronomy.”

BIOCHEMISTRY
Head: John E. Donelson
Associate professors: Robert E. Cohen, Kenneth P. Wallrath, Charles A. Swenson
Adjunct professors: Theresa Gioannini, Nancy C. Stellwagen, Joseph Walder
Associate professors: Robert E. Cohen, Kenneth P. Murphy, Andrew D. Robertson, Madeline A. Shea, Daniel L. Weeks, Lois Weisman
Assistant professors: Ramaswamy Subramanian, Lori Stellwagen, Joseph Walder
Professor emeriti: Thomas W. Conway, Kenneth P. Murphy, Andrew D. Robertson, Madeline A. Shea, Daniel L. Weeks, Lois Weisman
Associate professor emeritus: Gene F. Lata
Wold

Web site: http://www.biochem.uiowa.edu/

Biochemistry is the study of the basic chemical processes that occur in all living systems. One of the most active sciences, it provides a foundation for other biosciences.

Biochemists generally work in laboratories and/or classrooms. Those with a bachelor’s degree are often employed as research assistants in industry, government, education, and health service, or in secondary school teaching, for which licensure is required.

Biochemists with advanced degrees-usually a doctorate-pursue teaching, research, and/or administrative careers in universities, medical schools, hospitals, private research agencies, government laboratories, biotechnology companies, and in food, drug, cosmetics, chemical, petroleum, and allied industries.

Undergraduate Programs
The College of Liberal Arts administers undergraduate programs and grants undergraduate degrees in biochemistry. See the College of Liberal Arts introductory section of the Catalog for general information about undergraduate study at the University.

The department offers both Bachelor of Science and Bachelor of Arts degrees. The requirements are outlined below. Students choose advanced science electives to supplement biochemical studies or as part of a minor or a double major. Science elective courses numbered below 100 need adviser’s approval to be counted toward the degree.

Transfer credit for biochemistry courses requires the approval of the undergraduate adviser in Biochemistry.

Bachelor of Science
The B.S. degree program in biochemistry prepares students to work in positions that require a basic mastery of biochemistry. It is also excellent preparation for graduate study in biochemistry and related sciences or for study toward a professional degree in the health sciences.

The B.S. degree in biochemistry requires 73 semester-hours in addition to the College of Liberal Arts General Education Program requirements. Courses required for the B.S. degree are as follows.

One of these pairs:
22M:021-022 Calculus and Modeling I-II 8 s.h.
22M:025-026 Calculus I-II 8 s.h.
22M:035-036 Engineering Calculus I-II 8 s.h.
002:010-011 Principles of Biology I-II 8 s.h.

One of these pairs:
004:013-014 Principles of Chemistry I-II 6 s.h.
004:018-019 Chemical Science I-II (preferred) 6 s.h.

One of these:
004:016 Principles of Chemistry Lab 2 s.h.
004:020 Chemical Science Laboratory (preferred) 2 s.h.

One of these pairs:
004:121-122 Organic Chemistry I-II 6 s.h.
004:123-124 Organic Chemistry for Majors I-II (preferred) 6 s.h.

One of these pairs:
004:131-132 Physical Chemistry I-II (preferred) 6 s.h.
004:131-132 Physical Chemistry I-II (preferred) 6 s.h.
004:120 Biochemistry and Molecular Biology I 3 s.h.
009:120 Biochemistry and Molecular Biology II 3 s.h.
009:140 Experimental Biochemistry 4 s.h.

One of these pairs:
004:141 Organic Chemistry Laboratory 3 s.h.
004:142 Organic Chemistry Laboratory for Majors (preferred) 3 s.h.
029:017-018 Introductory Physics I-II 8 s.h.
099:001 Orientation and Introduction to the Field of Biochemistry 0 s.h.
099:101 Technical Communication in Biochemistry 1 s.h.
099:120 Biochemistry and Molecular Biology I 3 s.h.
099:130 Biochemistry and Molecular Biology II 3 s.h.
099:140 Experimental Biochemistry 4 s.h.

Advanced science electives, chosen in consultation with adviser 6 s.h.

In addition, B.A. students intending to go on to advanced degrees in the biological or health sciences are advised to include 4 semester hours or more of 099:155 Research, Independent Study (senior research) in their programs.

Teacher Licensure
Biochemistry majors, especially those in the B.A. program, may qualify for teacher licensure by taking additional courses in teacher education. Students should consult with an adviser in the College of Education.

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 third semester begins:
004:013-014 or 004:018-019, and 004:016; 22M:025 or 22M:035 or 22M:021-022 or 22M:035-036; 099:001; and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: the courses listed above, plus 002:010-011: 004:121-122 and 004:141; 22M:026 or 22M:036 or 22M:021-022 or 22M:035-036; and at least one-half of the semester hours required for graduation

Before the seventh semester begins: the courses listed above, plus 029:017-018, 099:120, 099:130, and 099:140, two science
electives, and at least three-quarters of the semester hours required for graduation.

Before the eighth semester begins: the courses listed above, plus 004:137 or 004:132 or 099:241, a science elective, and at least 3 semester hours of 099: 155

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 Arts**

Before the third semester begins: 004:013-014 or 004:018-019, and 004:016; math through 22M:026 or higher; 099:00l; and at least one-quarter of the semester hours required for graduation.

Before the fifth semester begins: the courses listed above, plus 002:010-011, 004:121-122, and at least one-half of the semester hours required for graduation.

Before the seventh semester begins: the courses listed above, plus 029:011-012, 099:120, 099:130, and 099:140, two science electives, and at least three-quarters of the semester hours required for graduation.

Before the eighth semester begins: the courses listed above, plus 004:131 or 004:132, 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.

**Honors**

Qualified students may earn an honors degree in biochemistry. They must be enrolled in the University Honors Program and must do special work in 099:155 Research, Independent Study. Honors students present their research results in a report written in the form of a journal article and in an oral report presented at a special open departmental seminar.

**Combined Programs**

Students, especially those in the B.A. program, may include courses from other disciplines, such as business, prelaw, psychology, or journalism. This prepares them for one of the many vocations on which biochemistry has an impact.

**Graduate Programs**

The College of Medicine and the Graduate College coordinate graduate programs in biochemistry and other biosciences; graduate degrees are granted through the Graduate College. See the College of Medicine introductory section and the Graduate College section of the Catalog for general information about study in medicine and graduate study at the University.

The Department of Biochemistry offers programs of study leading to the M.S. and Ph.D. degrees. The department also offers opportunities for qualified and interested students to pursue combined programs leading to the M.S.-M.D. or Ph.D.-M.D. [medical scientist training] degrees.

The focus of the graduate program is on the individual student. In the first year, students engage in formal course work and tutorial laboratory experiences that serve as the basis for selecting a topic for thesis research.

First-year students spend half of their time taking biochemistry courses-usually the following:

- 099:241-242 Biophysical Chemistry I-II 6 s.h.
- 099:282 Seminar 1 s.h.
- 142:215 Molecular Biology II 3 s.h.
- 156:201 Principles in Molecular and Cell Biology 4 s.h.

*The molecular biology course is interdisciplinary; for course description, see “Molecular Biology” in the Graduate College section of the Catalog.

Students spend the other half of their time working in four different faculty laboratories (099:261 Research Techniques), learning research techniques in the context of ongoing projects.

After the first year, students choose research laboratories for Ph.D. thesis research, begin their thesis projects, and take courses that supplement and complement their interests and preparation. During this time, they must take a minimum of 8 semester hours of course work, including short courses in biochemistry and elective science courses (numbered above 100 or 200) in other departments.

Students take the comprehensive examination before the end of June in their second year, after which they are admitted formally to degree candidacy and begin to concentrate on thesis research. The program culminates in students' successful defense of their completed thesis work before an examining committee.

In addition to meeting these requirements and those of the Graduate College, students are expected, as part of their training, to assist in teaching biochemistry for two or three semesters.

Throughout the program, students are associated with small research seminar groups and receive close personal attention from the biochemistry faculty members who serve as research advisers.

**Admission**

The graduate program in biochemistry is flexible enough to accommodate students with bachelor's degrees in any of the biological, biochemical, or physical sciences. Appropriate preparation includes one-year, college-level courses in organic and physical chemistry, biology, physics, and mathematics through calculus. Students are expected to have had one or more introductory courses in biochemistry.

Minimum requirements for admission to the department include a 3.00 undergraduate grade-point average and acceptable scores on the verbal, quantitative, and analytical sections of the Graduate Record Examination (GRE). General Test. Candidates are more competitive if they also submit scores for the advanced examinations in chemistry, biology, or biochemistry, molecular and cell biology.

**Financial Support**

Usually, all students admitted to the Ph.D. graduate program in biochemistry receive financial assistance.

**Research**

The department's current research interests include the study of protein structure and function, protein folding, complex carbohydrate structure and function, regulation of gene expression, mechanisms involved in transcription and replication, enzyme reaction mechanisms, intracellular signaling, differentiation, structure, and membrane determinants of cell shape and motility. The department's website provides more detailed information about faculty research interests.

**Facilities**

The Department of Biochemistry occupies modern research quarters in the Bowen Science Building, where the Departments of Anatomy and Cell Biology, Microbiology, Pharmacology, and Physiology and Biophysics also are located. Most of its research and teaching facilities are located on a single floor. However, a few of the department's research groups are located in adjacent buildings.

The University of Iowa maintains a number of central research support facilities and equipment that promote campuswide interactions between research groups. These include the facilities for electron microscopy, fermentation, image analysis, high field NMR, high resolution mass spectrometry, and academic computing [through Information Technology Services]. The College of Medicine operates other facilities available to biochemistry researchers, for nuclear magnetic resonance, flow cytometry, DNA synthesis, tissue culture hybridoma, gene transfer vector core, and transgenic and gene targeting.

Individual faculty research laboratories are well-equipped for modern research, and there are many common-use laboratories, including instrument rooms, a reading room, cold rooms, tissue culture areas, preparation rooms, and a stockroom. Research is supported by staff in instrument shops, animal quarters, photography and illustration service, and by office staff, stockroom supervisors, and a purchasing agent.

Together, the department and the central support facilities can provide virtually all of the equipment required for modern biochemical research. Examples of such equipment include analytical and preparative ultracentrifuges; fluorescence, optical rotary dispersion, high-field NMR, ultraviolet-visible, and rapid kinetic instruments; amino acid analyzers and protein sequencers, gas chromatographs, preparative high performance liquid chromatographs, liquid scintillation counters, electrophoresis equipment, instrumentation for protein X-ray crystallography, Cary spectrophotometers, an automated DNA synthesizer, and an automatic DNA sequencer.
The department maintains a reading room stocked with primary books and journals used by biochemists. The Hardin Library for the Health Sciences is a large, complete library located near the Brown Science Building.

Excellent resources also are provided by other departmental branches of the University Libraries system and by computer access to Bibliographic Retrieval Services.

**Courses**

**099:000 Cooperative Education Internship**
0 s.h.

**099:001 Orientation and Introduction to the Field of Biochemistry**
0 s.h.

Biochemistry and its application to other areas of basic sciences; biochemical studies, research, careers.

**099:101 Technical Communication in Biochemistry**
1 s.h.

Use of the library, computerized literature searches, formal aspects of writing scientific reports, criteria for evaluating biochemical literature. Prerequisite: 099:120 or 099:130 or 099:140 or consent of instructor.

**099:110 Biochemistry**
3 s.h.

Chemistry, metabolism, molecular biology of living systems. Prerequisites: two semesters of general chemistry, one semester of organic chemistry, and one of the following: a life science course, a second additional organic chemistry course, or consent of instructor.

**099:115 Undergraduate Independent Study**
arr.

Independent study in biochemistry arranged by student and instructor. Consent of instructor required. May be repeated to total of 6 s.h.

**099:120 Biochemistry and Molecular Biology I**
3 s.h.

Structures of nucleic acids, proteins, carbohydrates, lipids and their participation in cellular transport, catalysis, oxidative metabolism; first course of two-semester sequence that concludes with 099:130. Prerequisites: two semesters of general chemistry and one of organic chemistry. Recommended: 002:010, 002:011, and a second additional organic chemistry course.

**099:130 Biochemistry and Molecular Biology II**
3 s.h.

Molecular dynamics of biological systems, metabolism of lipids and nitrogen-containing compounds; information transfer in prokaryotes, eucaryotes; recombinant DNA techniques; chemistry and enzymology of replication, transcription, translation, cell transformation, regulation of gene expression. Prerequisite: 099:120.

**099:140 Experimental Biochemistry**
4 s.h.

Quantitative, experimental studies on identification, characterization, quantitation of constituents of biochemical systems; use of modern instruments and techniques for spectroscopy, chromatography, electrophoresis, centrifugation, radioisotope studies; emphasis on experimental design, interpretation. Prerequisites: 004:016 or 004:020, or 099:120.

**099:155 Research, Independent Study**
2-8 s.h.

Participation by biochemistry undergraduates in biochemical research. Prerequisites: B- or higher in 099:120, 099:130, and 099:140; and a grade-point average of B or higher in the three.

**099:161 Biochemistry for Dental Students**
4 s.h.

Open only to dental students or to others with consent of instructor. Prerequisite: 004:121 or consent of instructor. Recommended: 004:122.

**099:162 Biochemistry for Pharmacy Students**
4 s.h.

Open only to pharmacy student or to others with consent of instructor. Prerequisite: 004:121 or consent of instructor. Recommended: 004:122.

**099:163 Biochemistry for Medical Students**
4 s.h.

Concepts of biochemistry, their application to understanding clinical problems. Open only to medical students.

**099:164 Biochemistry for Physician Assistant Students**
3 s.h.

Aspects of general biochemistry necessary for understanding the biochemical basis of human disease; analysis of appropriate clinical cases. Prerequisite: 099:110 or equivalent biochemistry survey.

**082:20 Enzyme Kinetics and Bioorganic Mechanisms**
1-2 s.h.

Principles, applications of enzyme catalysis; mechanisms of typical biochemical reactions. Prerequisite: 099:120 or consent of instructor.

**099:228 Regulation of Intermediate Metabolism**
1.2 s.h.

Regulation of central metabolic pathways. Prerequisite: 099:130 or consent of instructor.

**099:237 Topics in Biochemistry**
1-2 s.h.

May be repeated. Prerequisite: 099:130.

**099:241 Biophysical Chemistry I**
3 s.h.

Quantitative analyses of biochemical systems; application of thermodynamics, equilibria, spectroscopy, X-ray crystallography to study of structure and function of macromolecules. Consent of instructor required. Prerequisite: one year of biochemistry. Recommended: course in physical chemistry.

**099:242 Biophysical Chemistry II**
3 s.h.

Continuation of 099:241, which is prerequisite: hydrodynamics, electrophoresis, chromatography, kinetics, macromolecular interactions and dynamics, regulatory systems.

**099:261 Research Techniques**
1-5 s.h.

Laboratory rotation for first-year graduate students in biochemistry.

**099:275 Perspectives in Bioanalysis**
1 s.h.

Applied enzymology, protein design, structure-activity relationships, biosensor technology, microbial transformations, biodegradation of environmental pollutants. Graduate standing required. May be repeated. Same as 004:275, 046:275, 052:275, 053:275, 061:275.

**099:282 Seminar**
0-1 s.h.

Techniques for presentation of scientific information.

**099:292 Research Biochemistry**
arr.

Thesis research.

**BIOLOGICAL SCIENCES**

Chair: Jack Lilien


Associate professors: Chi-Lien Cheng, Jan Fassler, Steven Green, Diana G. Horton, Erin Kay, Rodney N. Nagoshi, MinChe Shih.

Associate professors emeriti Robert W. Embree, Thomas E. Melcher.


Undergraduate degrees: B.A., B.S. in Biology Undergraduate nondegree program: minor in Biology.

Graduate degrees: M.S., Ph.D. in Biology.

Web site: http://www.biology.uiowa.edu

**Undergraduate Programs**

Study in the biological sciences prepares students for work in a wide variety of fields, including research or service careers at the technical level in educational, governmental, and industrial institutions or foundations. Departmental programs also prepare students to teach at all levels, to gain certification, to enter advanced degree programs leading to independent research in biological fields, or to work in the health professions, such as medicine, dentistry, pharmacy, nursing, paramedical practice, medical technology, dental hygiene, and physical therapy.

Courses required for the Bachelor of Arts and Bachelor of Science degrees emphasize structures and processes common to living systems at molecular, cellular, organismic, and population levels. Students also may follow their own interests by concentrating elective courses in areas such as genetics, development, physiology, ecology, molecular biology, or plant and animal systems.

The B.A. and B.S. each include a core curriculum consisting of an introductory course sequence and courses in fundamental genetics and evolution; a set of three breadth menus (cell and molecular biology, developmental biology and physiology, and ecology/evolution/population biology) that present different levels of biological organization and different conceptual approaches to biology; and additional elective courses in biology or cognate areas. Students interested in specializing in plant biology can select a course devoted entirely to plants from each menu. While the B.S. requires an investigative laboratory experience, the B.A. has features that allow students somewhat more flexibility—for example, electives in the history and philosophy of science.

Students interested primarily in field biology may use the Machtire Nature Recreation Area and may take varied courses emphasizing field biology offered during the summer at the Iowa Lakeside Laboratory at Lake Okoboji.

Students who wish to count course work done at another institution toward requirements for a biological sciences degree at Iowa should consult with their biological sciences adviser.

**INTRODUCTION TO RESEARCH**

The department offers 002: 199 Introduction to Research to acquaint students majoring in the biological sciences with the nature of practicing scientists’ work-through association with one of the department’s research groups in experiments, discussion of current research, study of specialized topics, and attendance at research lectures.

**Bachelor of Science in Biology**

Students seeking the B.S. in biology are required to take the following courses.

**BIOLOGICAL SCIENCES**

Total of 31-40 semester hours, as follows

002:010-011 Principles of Biology I-II 8 s.h.
002:128 Fundamental Genetics 4 s.h.
002:131 Evolution 4 s.h.

**Breadth Menus**

At least one course (minimum of 3 semester hours) from each of the following three breadth menus

Molecular and cellular biology:
002:114 Cell Biology 3 s.h.
002:127 Introduction to Plant Molecular Biology 3 s.h.
002:155 Cell Physiology 4 s.h.
002:171 Molecular Genesics 4 s.h.

Developmental biology and physiology:
002:104 Introduction to Developmental Biology 3 s.h.
002:110 Plant Physiology 3-4 s.h.
002:117 Plant Developmental Biology 3 s.h.

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002:124 Animal Physiology 3 s.h.
002:150 Endocrinology 3 s.h.
002:180 Fundamental Neuroscience 4 s.h.
Ecology and evolutionary biology:
002:100 Plant Diversity and Evolution 4 s.h.
002:103 Biogeography 3 s.h.
002:134 Ecology 4 s.h.
002:140 Systematics 3 s.h.

**Investigative Laboratory**

At least one of these:
002:106 Field/Bryology-Lichenology 4 s.h.
002:116 Field/Ecology 4 s.h.
002:133 Cell Biology Laboratory 3 s.h.
002:138 Genetics and Biotechnology Laboratory 3 s.h.
002:152 Endocrinology Laboratory 2 s.h.
002:196 Honors Investigations (3 s.h. minimum) 3 s.h.

Selected courses at the Iowa Lakeside Laboratory also qualify for this requirement (see adviser) 4-5 s.h.

**Electives**

In addition, at least two elective courses (minimum of 2 semester hours each) must be chosen from advanced courses in the Department of Biological Sciences, advanced biology courses offered at the Iowa Lakeside Laboratory, and/or from a specific list of acceptable courses in biochemistry, geology, exercise science, microbiology, or anthropology (students should consult the list of approved courses available from their biology adviser or the departmental office). Courses listed in breadth menus and as investigative laboratory courses may be used as electives unless they already have been used to satisfy the breadth or investigative laboratory requirements. No more than 3 semester hours of 002:196 and 002:199 may be counted toward the elective requirement.

**Other Disciplines**

004:013-014 Principles of Chemistry I-II 6 s.h.
004:016 Principles of Chemistry Laboratory 2 s.h.
004:121-122 Organic Chemistry I-II 6 s.h.
009:110 Biochemistry 3 s.h.
or
009:120/130 Biochemistry and Molecular Biology I-II 7 s.h.
or
002:123 Plant Biochemistry 3 s.h.
029:011-012 College Physics I-II 8 s.h.
or
029:017-018 Introduction to Biostatistics 3 s.h.
One of these:
22M:021 Calculus and Modeling I 4 s.h.
22M:025 Calculus I 4 s.h.
22M:035 Engineering Calculus I 4 s.h.
22S:101 Biostatistics 3 s.h.
or
063:161 Introduction to Biostatistics 3 s.h.
or

*Students may count 3 semester hours from 099:130 toward the elective requirement.

**Suggested First-Year Schedule**

The following first-year schedule of science courses is recommended for students seeking either the B.S. or B.A. degree in biology.

**First Semester**

004:013 Principles of Chemistry I 3 s.h.
Calculus or mathematics leading to calculus 3-4 s.h.

**Second Semester**

004:014, 004:016 Principles of Chemistry II, Chemistry Laboratory 5 s.h.
002:010 Principles of Biology I 4 s.h.
Calculus (if not taken during the first semester) 4 s.h.

Students who had sufficient high school preparation in biology and chemistry are encouraged to enroll in 002:010 Principles of Biology I the first semester of their first year.

**Bachelor of Arts in Biology**

Students seeking the B.A. in biology are required to take the following courses.

**BIOLOGICAL SCIENCES**

Total of 34-43 semester hours, as follows

002:010-011 Principles of Biology I-II 8 s.h.
002:128 Fundamental Genetics 4 s.h.
002:131 Evolution 4 s.h.

**Breadth Menus**

At least one course from each of the three breadth menus listed under "Bachelor of Science in Biology"

**Electives**

In addition, at least four elective courses (total of 8-16 semester hours) must be chosen from advanced courses in the Department of Biological Sciences, including at least one laboratory course or a course with a laboratory. One of the electives may be chosen from the following list. Other rules governing choice of electives are the same as for the B.S. degree.

016:136 (152:136) History of Medicine in Western Society 3 s.h.
16E:139 Ancient and Medieval Science 3 s.h.
16E:140 The Scientific Revolution 3 s.h.
16E:141 Science in the Modern Age 3 s.h.
16W:138 (152:138) History of International Health 3 s.h.
026:104 Introduction to Philosophy of Science 3 s.h.

**Suggested First-Year Schedule**

See "Bachelor of Science in Biology."

**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. in Biology**

Before the third semester begins: math through calculus I; 004:013, 004:014, and 004:016; 002:010; and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: the courses listed above, 002:011, 004:121, three other courses in the major, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: the courses listed above, plus five or six more courses in the major, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: the courses listed above, plus 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. in Biology**

Before the third semester begins: math through calculus I; 004:013, 004:014, and 004:016; 002:010; and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: the courses listed above, plus 002:011, 004:121-122, two other courses in the major, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: the courses listed above, plus five or six more courses in the major, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: the courses listed above, plus 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**

Biology majors who are members of the University Honors Program may enroll in the Honors Program in Biology, which gives talented students membership in a small, active group of undergraduates with common interests. Throughout their undergraduate residence, biology honors students may take advantage of enrollment in honors sections of courses within the department and the college.

In addition, honors students gain an introduction to the pursuits of practicing scientists by associating with one of the department’s research groups and participating in an independent research project guided by a faculty member. The thesis should be based on an interesting biological problem, which is usually identified by the research supervisor. The honors 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. The Honors Seminar in Biology (or equivalent seminar) provides students with an ideal opportunity to improve their skills in seminar presentation and in writing scientific English.

To graduate with honors in biology, students must complete the requirements for a biology B.S. or B.A. degree with a grade-point average of at least 3.20, both overall and in all course work in the biology major taken at The University of Iowa (including all biology courses and cognates in chemistry, physics, biochemistry, mathematics, and statistics). In addition, students must fulfill the following requirements: complete 2 semester hours in either 002:198 Honors Seminar in Biology or an advanced-level biology seminar course; complete a minimum of 6 semester hours (taken over two or more semesters) of 002:196 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 the research findings to other biology honors students.

Students may count the 2 semester hours earned in 002:198 Honors Seminar in Biology toward the elective requirement of the B.A. or B.S. degree. A maximum of 3 semester hours earned in 002:196 Honors Investigations may be counted toward the elective requirement for the B.A. or B.S. in biology or toward the investigative lab requirement for the B.S. in biology.

Biology majors interested in pursuing an honors degree should contact the biology honors adviser as early as possible, preferably in the sophomore or junior year, so that they may be matched with an appropriate lab.

**Minor in Biology**

Students majoring in other subjects may earn a minor in biology. The minor requires 15 semester hours of credit in biology, at least 12 of which must be in 100-level courses. All of the 100-level courses must be offered by the Department of Biological Sciences at The University of Iowa and the student must be approved 100-level courses offered at Iowa Lakeside Laboratory. Students must earn a grade-point average of at least 2.00 in 100-level courses. Biological sciences courses taken on a pass/nonpass basis do not apply toward the biology minor. Biological sciences courses taken at other institutions, except Iowa Lakeside Laboratory, do not apply to the 100-level course requirement in the biology minor.

**Graduate Programs**

The graduate programs of the department are designed to train scientists who can participate in research in private, educational, or government environments, and who are experienced in the skills required for teaching biology. In the last two decades, some 70 of the department’s Ph.D. graduates have been appointed to college or university faculties, while most of the others hold research positions. A substantial number of students who completed their academic training with an M.S. degree have obtained technical or professional positions. Other graduates are teaching at the secondary-school level or in community colleges.

Before registering in August, all new graduate students meet with advisers to discuss their educational background. On the basis of this discussion, students may be excused from certain courses or may be advised to take specific course work to enhance their background in certain areas. Students must make up any undergraduate deficiencies in mathematics, chemistry, or physics during the first year. A student with a bachelor’s degree outside biological sciences may request a modification of certain area requirements; the student’s degree committee decides whether portions of the requirements may be waived.

All members of the biological sciences faculty engage in research asking fundamental questions about major biological problems. Areas of departmental research include cell biology, developmental biology, genetics, molecular biology, neurobiology, ecology, physiology, evolutionary biology, plant biochemistry, and parasitology. When appropriate, projects may involve work in other departments; graduate students sometimes are advised jointly by faculty in those departments.

On admission, each new graduate student is assigned a temporary adviser, chosen to complement the research interests of the student. The temporary adviser guides the student through initial requirements and acts as the student’s advocate. For purposes of graduate student evaluation, research training is categorized by four designations: cell and developmental biology, ecology and evolution, genetics, and physiology. The department expects new students to do research in three laboratories on a rotating basis during their first year.

A graduate affairs committee evaluates and advises students initially. After the first two semesters, students choose a permanent sponsor (adviser) and a Ph.D. advisory (dissertation) committee. Afterwards, responsibility for evaluation is shared by the dissertation committee and the graduate affairs committee.

**Master of Science in Biology**

Although the department emphasizes the Ph.D. degree, M.S. programs are available with and without thesis.

**With Thesis**

The M.S. in biology with thesis requires 30 semester hours of graduate credit and a thesis based on original research. Ordinarily, a maximum of 9 semester hours earned in research can be applied toward the degree. The remaining hours are selected in consultation with the student’s advisory committee; the choice of courses is tailored to students’ backgrounds and career goals.

Students receive academic credit for courses they are required to take, but credit awarded for courses required by the admissions committee to make up undergraduate deficiencies does not count toward the 30-semester-hour requirement. After the thesis is accepted, candidates must pass an oral examination based on the thesis and related subjects.

**without Thesis**

The M.S. in biology without thesis requires 34 semester hours of graduate credit and a library research report for which no more than 4 semester hours of credit may be granted.

Credit may be earned in graduate courses in biology or cognate sciences; these courses are determined in consultation with the student’s thesis committee and are tailored to fit the student’s background and career goals. A maximum of 8 semester hours earned in research can be applied toward the M.S. without thesis.

Credit earned in courses at the 100 level or above with the exception of courses in biology required to make up deficiencies (see above) -may be included in the 34-semester-hour minimum if approved by the advisory committee. On completion of the hours requirement and acceptance of the research report by their faculty sponsor, students must pass a written examination covering their graduate program in biology, including the area of their report.

**Doctor of Philosophy in Biology**

The formal course or proficiency requirements for each Ph.D. student are determined by the dissertation committee on the basis of the student’s background and current and prospective research interests. The dissertation committee also determines what portion of the formal course work or proficiency requirements must be completed before the comprehensive examination, which admits students to full
candidacy for the Ph.D. In this examination, students must demonstrate knowledge of biology fundamentals and the analytic and synthetic skills necessary to become creative, independent scientists.

Students also must demonstrate teaching skills by assisting in the instruction of one course for at least two semesters. The program culminates in students’ preparation of a dissertation based on original, independent research. Students must take a final examination, which covers the thesis and the specialized field the thesis represents, before the department can accept the thesis.

Financial Support
All graduate students making satisfactory progress in the department receive support from teaching assistantships, fellowships, or research assistantships provided by the University or by individual research grants administered by faculty members. First-year Ph.D. students are supported by department fellowships during the research rotation period. Subsequently, students may be considered for any of the following.

Teaching assistantships: Appointment to an assistantship requires that the student provide approximately 20 hours of work per week. Appointees pay resident tuition rates. To be eligible, students must demonstrate competent oral communication skills and, in the case of reappointments, satisfactory performance in previous teaching assignments.

Summer research fellowships: These are available for outstanding graduate students. Recipients are expected to do full-time research for any two-month period between mid-May and mid-August and to enroll for at least 2 semester hours of credit in 002:001 Research: Biology. Awards are made on a competitive basis.

Summer appointments: These depend on available summer session budgets. Summer session stipends are awarded for half-time service or 20 hours of time per week for the eight-week summer session.

Grants-in-aid to faculty members: Faculty members may employ half-time or quarter-time research assistants. These awards are made by the principal investigator in charge of the grant and carry stipends similar to those available from departmental resources. Graduate College and departmental regulations and standards apply to these appointments.

Grants-in-aid for graduate students: Agencies such as NIH, NSF, and Sigma Xi make grants-in-aid to graduate students. Announcements of availability are made from time to time. Students should consult the department chair for details. The Graduate College also provides information regarding grants available to graduate students. Students who apply for any departmental award also may be considered for others.

Admission
Application materials for the graduate program must be sent both to the University’s Office of Admissions and to the Department of Biological Sciences graduate admissions committee. Complete instructions are listed on the application form, which is available from the department. Applicants should have official transcripts from each undergraduate and graduate institution they have attended sent to both the Office of Admissions and the Department of Biological Sciences. They also should arrange to have official scores from the Graduate Record Examination (GRE) General Test (verbal, quantitative, and analytical) sent to both offices. A valid B.S. or B.A. degree from an accredited institution is required.

International applicants are required to take the Test of English as a Foreign Language (TOEFL) and arrange to have official scores sent to the Office of Admissions. International students who received their degrees (either bachelor’s or master’s) from a U.S. institution are exempt from this requirement.

Successful applicants for graduate admission usually have a grade-point average of at least 3.00 and a Graduate Record Examination (GRE) General Test (combined verbal, quantitative and analytical) score higher than 1800. These criteria are not absolute; instead, they serve as general guidelines to the admissions committee, which also considers applicants’ letters of recommendation, research experience, and other appropriate criteria.

Although not required, it is recommended that applicants take the Graduate Record Examination advanced biology test and submit their scores. Although most applicants have completed undergraduate programs in biology, the department also considers applicants with backgrounds in biophysics, botany, biochemistry, molecular biology, microbiology, and other related areas. Applications should be submitted by February 1 and must include the GRE test scores. In order to meet the application deadline, applicants must take the GRE in October or earlier. Late applications are considered as placement and funding permit.

Students applying for admission to one of the master’s programs in biology 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 special students (A9) and make up the equivalent of the department’s bachelor’s degree program prior to consideration for admission. Special students must complete chemistry, physics, and calculus requirements in addition to the biology courses listed in the undergraduate program. Special students should consult the department’s graduate program administrator.

For more information, visit the department’s World Wide Web site.

International Students
Admission of international students is based on the GRE General Test, a score of at least 570 on the paper-based test or at least 230 on the computer-based Test of English as a Foreign Language (TOEFL). An evaluation of the applicant’s transcript(s), letters of recommendation, and research experience is also considered.

Facilities
The department is housed in four separate buildings, with modern facilities and equipment for state-of-the-art research. A new research and teaching building was completed in spring 2000; extensive renovation of the existing facilities is under way.

Computer-Assisted Learning for Undergraduates in Biology provides computing facilities for undergraduates. Graduate students have their own computer room with IBM and PowerMac PCs linked to the campus network.

A computerized motion analysis facility, housed in the new Biology Building, was the first of its kind in the world. The department also recently established a digital deconvolution microscopy facility, which contains state-of-the-art microscopic and imaging equipment.

In addition to department facilities, campuswide facilities include a DNA oligonucleotide synthesis and enzyme lab, oligopeptide synthesis and sequencing equipment, mass- and NMR spectroscopy facilities, and a computerized image analysis facility. A hybridoma facility does fusions and screening and provides researchers with monoclonal antibodies. A campus fermentation lab grows large amounts of microorganisms (e.g., 100 liters) for use in protein isolation. There is a University electron microscopy/lab with confocal, scanning, and transmission electron microscopes.

In short, the department and the University provide the resources necessary to do biological science from the molecular to the population level.

Iowa Lakeside Laboratory
Advanced courses in biology at Iowa Lakeside Laboratory are accepted for elective credit in the biology major and minor. The laboratory, located on West Lake Okoboji in northwestern Iowa, offers excellent conditions for summer study in field biology, limnology, physiology, aquatic ecology, pollution biology, and plant taxonomy. See “Iowa Lakeside Laboratory” in this section of the Catalog.

Courses
Many courses include field and/or laboratory components.

For Precollege Students

002:003 Junior High Summer Workshop 0 s.h.
002:004 Secondary Student Training Program 3-4 s.h.

Special projects. Open only to secondary school students. May be repeated.

002:006 Biology Techniques 2 s.h.
Current techniques, hands-on training in molecular biology; part of Hughes Life Science Summer Program. For high school students.

002:007 Hughes Native American Mentor Program 3 s.h.
Two-part program introducing Native American high school students to current molecular biology techniques and lab research with faculty mentor.

002:008 Laboratory Techniques 2 s.h.
Primarily for Undergraduates

002:000 Cooperative Education Internship 0 s.h.
002:001 Introduction to Botany 4 s.h. Biology of plant life; emphasis on structure, function, reproduction, diversity, inheritance. GE: natural sciences.
002:010 Principles of Biology I 4 s.h. Structure and function of cells; structure, function, reproduction of higher plants and vertebrate animals; first of two-semester course sequence. GE: natural sciences. Pre- or corequisite: 004:013.

Elementary Topics of General Interest

These courses are not open to graduate students and do not provide credit toward a biology major.

002:021 Human Biology 3-4 s.h. Molecular and cellular basis of human life; integration of human and the biosphere through photosynthesis, respiration; structure, function of human tissues, organs, organ systems; reproduction, genetics, impact of molecular biology and genetics engineering; lecture, laboratory. Open only to nonscience majors. GE: natural sciences.
002:022 Ecology and Evolution 3 s.h. Scientific methodology applied to study of life, their patterns on Earth, their organization in ecological systems; dynamics of evolutionary processes. GE: natural sciences.
002:029 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). Open only to first- and second-semester students.
002:040 Biology of the Brain 3 s.h. Recognition, identification of spring-flowering herbaceous plants, native woodland trees and shrubs, woody landscape plants; family characteristics, use of taxonomic key.
002:095 Plants and Human Affair 2-3 s.h. How plants are useful to people: food, clothing, shelter; plant's social, economic, ecological significance.

For Undergraduate and Graduate Students

002:000 Plant Diversity and Evolution 3 s.h. Major groups, including bryophytes, ferns and fern allies, gymnosperms, primitive angiosperms; emphasis on evolutionary implications of structure, reproductive biology, ecological adaptations of each plant group, reference to paleobotanical evidence. Prerequisites: 002:001, or 002:010 and 002:011, or equivalents.
002:031 Biogeography 2-3 s.h. Patterns of plant, animal distribution and their interpretation; historical geography, including glaciation, plate tectonics; ecological geography, including physical factors such as climate, geography. Preerequisites: 002:001, or 002:010 and 002:011, or 044:003 or consent of instructor. Same as 044:103.
002:040 Biology of the Brain 3 s.h. Heredity in human families, populations; genetic basis of normal, mental traits; chromosome behavior; molecular basis of genetics; sex determination. GE: natural sciences.
002:087 Spring Flora 3 s.h. Morphology, physiology, importance of parasites in humans, animals; laboratory emphasis on morphology, experiment, emphasis on host/parasite relationship. Prerequisites: 002:001, or 002:010 and 002:011, or equivalents.
002:121 Quaternary Palynology and Paleobotany 4 s.h. Nature, origin, use of pollen and spores; pollen-bearing deposits; application to geological, ecological, botanical, archaeological problems. Prerequisite: college geology or botany. Same as 012:128.
002:122 Cell and Molecular Biology of Protozoa 2-3 s.h. Basic biological principles; focus on free-living amoebas, flagellates, ciliates, some parasitic forms; evolution, l congressman, taxonomy, ecology, genetics, impact of molecular biology and genetics engineering; lecture, laboratory. Open only to nonscience majors. GE: natural sciences. Recommended: 004:009-010.
002:123 Plant Biochemistry 3 s.h. Fundamental mechanisms in differentiation, organogenesis, morphogenesis, mechanistic approach to molecular, cellular, tissue levels of organizations. Prerequisites: grade of C- or higher in 002:010, 002:011, and 044:014.
002:166 Field Bryology-Lichenology 3-4 s.h. Basic biological principles; emphasis on mosses, liverworts and lichens; field studies to collect data, laboratories to identify, prepare specimens; scientific paper to evaluate inter- and intra-site differences in diversity relative to ecology, geography, historical factors. Prerequisites: 002:001 or 002:011 or 002:134 or consent of instructor.
002:174 Plant-Animal Interactions 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.
002:178 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.
002:117 Plant Developmental Biology 3 s.h. Developmental processes through life cycle of vascular plants; current knowledge of mechanisms, control; emphasis on molecular, genetic approaches to development, including transposon tagging. Transformed, offered spring semesters of even years. Prerequisites: 002:001, or 002:010 and 002:011; and 002:128.
002:118 Endocrinology Laboratory 2 s.h. Representative experiments and methods; effects of hormones and their analogues on processes unique to plants, including photosynthesis, nitrogen fixation. Prerequisites: 002:010, and 002:011, and 044:014; or consent of instructor.
002:124 Animal Physiology 3 s.h. Principles of cellular and systems physiology. Offered spring semesters. Prerequisites: 002:010 and 002:011, and college physics or consent of instructor.
002:127 Introduction to Plant Molecular Biology 3 s.h. Fundamentals of molecular biology and their application in understanding plant biology. Prerequisites: 002:010 and 002:011, or equivalents.
002:129 Fundamental Genetics 4 s.h. Major evolutionary trends; structural, physiological, behavioral adaptations; laboratory emphasis on living material. Prerequisites: 002:010 and 002:011, or equivalents.
002:130 Plant Phylogeny 3 s.h. Nutrients, metabolism, growth and development of higher plants: emphasis on "photosynthesis, hormone actions, photosynthesis, hormone actions, photosynthesis, hormone actions, photosynthesis, hormone actions, photosynthesis, hormone actions". Prerequisites: 002:001, or 002:010 and 002:011, or consent of instructor.
002:131 Endocrinology Laboratory 2 s.h. Representative experiments and methods; effects of hormones and their analogues on processes unique to plants, including photosynthesis, nitrogen fixation. Prerequisites: 002:010, and 002:011, and 044:014; or consent of instructor.
002:133 Cell Biology Laboratory 3 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: 002:010 and 002:011. Corequisite: a 100-level course in biological sciences, biochemistry, or microbiology.
002:134 Ecology 4 s.h. Adaptations of organisms to their physical, biological environments; organism-environment interactions; population biology; interactions between species; ecology of communities, ecosystems; human impact on ecosystems. Prerequisites: 002:010 and 002:011, and 22M:015 or 22M:021 or 22M:025. Same as 139:134.
002:135 Genetics and Biotechnology Lab 3 s.h. Adaptations of organisms to their physical, biological environments; organism-environment interactions; population biology; interactions between species; ecology of communities, ecosystems; human impact on ecosystems. Prerequisites: 002:010 and 002:011. Recommended: advanced standing.
002:145 Insect Ecology and Evolution 3 s.h. Insect diversity and adaptation, focus on form and function; evolution and ecology of reproductive and feeding strategies, behavior, metamorphosis; impacts of ecology and environment, including extinction, habitat loss, introduction to genetic/molecular techniques currently used in genetic analysis. Prerequisites: 002:128.
002:146 Insect Behavior 3 s.h. Genes, sensory physiology, migration, development of behavior, circadian rhythms, foraging strategies, aggression, sexual and parental behavior, group selection, social behavior. Prerequisites: 002:010 and 002:011, or equivalents. Recommended: organic chemistry.
002:152 Endocrinology Laboratory 2 s.h. Representative experiments and methods; effects of hormones on structure, physiology, metabolism. Pre- or corequisite: 002:150 or equivalent.
002:155 Cell Physiology 4 s.h. Functions common to all cells: metabolism and its control, cellular energetics, membranes and transport, excitation, signal transduction, synthesis of proteins in cells and organelles, expression of genetic information, cell cycle, movement, architecture, lecture, discussion. Prerequisites: 002:128, and 099:110 or 099:120, and 22M:015 or 22M:021 or 22M:025, or 22M:025, or 22M:011 or 029:017; or consent of instructor. Corequisites: 029:012 or 029:028.
002:162 Population Genetics and Molecular Evolution 3 s.h. Genetic structure, dynamics; evolution of macromolecules; molecular clocks, evolutionary trees; theory, investigative methods, findings. Prerequisites: grade of C- or higher in 002:128 and 002:131, or consent of instructor.
002:164 Topics in Plant Molecular Biology 1-2 s.h. Prerequisites: 002:010 and 002:011.
002:168 Genes and Development 3 s.h. Mechanisms by which genes control development; methodology of scientific research applied to developmental genetics. Open only to seniors and graduate students. Offered fall semesters. Prerequisites: 002:128.
002:171 Molecular Genetics 4 s.h.  
Mechanisms of regulation of DNA, RNA, protein biosynthesis, with emphasis on methods of genetic analysis; application of modern recombinant DNA techniques to basic problems. Open only to undergraduates and first-year graduate students. Prerequisite: 002:128 or 099-120.

002:172 Topics in Molecular Genetics 1-2 s.h.

002:176 Topics in Eukaryotic Molecular Biology 1-2 s.h.

002:177 Insect Reproduction and Development 2 s.h.  
Physiology of gametogenesis, embryogenesis, metamorphosis, emphasis on neuro-endoctrine regulation. Consent of instructor required. Prerequisites: 002:010 and 002:011, or equivalents.

002:180 Fundamental Neuroscience 4 s.h.  
Neuronal function, plasticity and development at the molecular and cellular levels. Offered fall semesters. Prerequisites: 002:010 and 002:011. Recommended: 029:012 and 099-110, or equivalents. Same as 122:180.

002:181 Neuropsychology 3 s.h.  
Physiological properties of nerve cells, nervous systems; axonal conduction, synaptic transmission, sensory transduction, integrative processes, higher functions. Offered spring semesters. Prerequisites: 002:180, and 22M:025 or equivalent, and 029:012; or consent of instructor. Same as 122:181.

002:183 Seminar in Cell Biology 1-2 s.h.  
Consent of instructor required.

002:184 Seminar in Neurogenetics 1-2 s.h.  
Offered fall semesters of odd years. Consent of instructor required.

002:185 Neurobiology of Learning and Memory 2 s.h.  
Offered fall semesters of odd years. Consent of instructor required.

002:186 Topics in Neurobiology 1-2 s.h.  
Topics vary. Consent of instructor required.

002:191 Advanced Lectures In Evolution 3 s.h.  
Consent of instructor required. Prerequisites: 002:128 and 002:131.

002:192 Basic Biology of Human Disease 2 s.h.

002:196 Honors Investigations arr.  
Experimental and theoretical research, readings in biological sciences. Open only to honors students. May be repeated. Consent of instructor required.

002:198 Honors Seminar in Biology 1-2 s.h.  
Open only to honors students. May be repeated, may be repeated. Consent of instructor required.

002:199 Introduction to Research arr.  
May be repeated. Consent of instructor required.

Primarily for Graduate Students

002:193 Topics in Cell Motility 13 s.h.  
Molecular, behavioral aspects of cell motility in systems ranging from bacteria to amoebae to neural growth cones. Open only to graduate students.

002:200 Biology Colloquium 0, 2 s.h.

002:205 Graduate Lectures in Genetics 1 s.h.

002:206 Graduate Lectures in Cell and Developmental Biology 1 s.h.

002:207 Graduate Lectures: Cell Biology 1 s.h.

002:208 Graduate Lectures in Ecology and Evolution 1 s.h.

002:215 Critical Readings in Biology 1 s.h.

002:218 Electron Microscopy Techniques 3 s.h.  
Methods of tissue preparation for transmission, scanning electron microscopy; fixation, embedding, ultra-thin sectioning; staining, theory, use, maintenance of electron microscopes; associated photographic techniques; advanced techniques such as immuno EM, freeze-fracture. Consent of instructor required. Prerequisite: a course in cell biology. Same as 060:218, 061:218.


002:225 Seminar: Endocrinology 1-2 s.h.  
Basic physiology, biochemistry of hormone action. Prerequisite: 002:150 or equivalent.

002:223 Seminar: Molecular Genetics 1-2 s.h.  
Current research on structure, regulation, function of nucleic acids, genes, chromosomes. Prerequisite: 002:128 or equivalent.

002:233 Seminar: Ecology 2.3 s.h.  
Consent of instructor required.

002:234 Seminar: Writing in Natural Sciences 2 s.h.  
Writing and critiquing skills in the natural sciences. Consent of instructor required.

002:235 Advanced Lectures in Ecology 3 s.h.  
Prerequisites: general ecology course and a statistics course, or consent of instructor.

002:255 Molecular Developmental Neurobiology 1.2 s.h.  
Readings on a specific topic. Offered spring semesters. Graduate standing or consent of instructor required.

002:265 Neuroscience Seminar 0-1 s.h.

002:301 Research: Biology arr.

002:303 Independent Study in Biology arr.

CENTER FOR THE BOOK

Director: Timothy Barrett

Affiliated faculty: Charles F. Altman (Communication Studies), Janet Altman (French and Italian), Timothy Barrett (Art and Art History), Constance Berman (History), Jeffrey Cox (History), Diane Davis (Rhetoric), Sharon DeGraw (Library and Information Science), Helena Dettmer (Classics), David Dunlap (Art and Art History), Glenn Ehret (German), Glen Epstein (Art and Art History), Robert Glasgow (Art and Art History), David Hamilton (English), Geoffrey Hope (French and Italian), Douglas W. Jones (Computer Science), Kathleen Kamerick (History), Ralph Keen (Religion), Rudolph Kuenzli (English), Brooks Landon (English), Philip Luethgendorf (Asian Languages and Literature), K.K. Merker (English), Judith Pascoe (English), David Schoonover (English/Special Collections), Carol Severino (Rhetoric), James Snitzler (Art and Art History), Katherine H. Tachau (History), Wallace Tomassini (Art and Art History), Mary Trachsel (Rhetoric), Steven Ungrin (French and Italian), Jonathan Wilcox (English)

Associated librarians: Christine Africa (Bibliography), Lisa Lord, Helen Ryan, Timothy Shipe (Bibliography), Rijn Templeton (Art Library)

Graduate nondegree program: certificate in Book Studies/Book Arts and Technologies

Web site: http://www.uiowa.edu/~ctbook

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 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 the arts and humanities of the book study the history and techniques of book crafts, including letterpress and offset printing, typography, calligraphy, papermaking, and bookbinding. Still other specialists engage in the conservation or study of books as artifacts. Specialists in the history of the book, its evolution, and its future.

Undergraduate students are invited to add dimension to their majors in English, art, journalism, history, and other areas by taking center courses in the book crafts and book studies. An area of concentration within the Bachelor of Arts in interdisciplinary studies may include an emphasis on the book arts or on the cultural and historical aspects of the book.

Certificate Program

The center offers a graduate certificate in book studies/book arts and technologies through the Graduate College.

The program’s principal objectives are:

- to place the interdisciplinary study of book history, arts, and technologies in academic and aesthetic contexts;
- to provide a structured program for graduate students in art, English, history, library and information science, and other departments who are seriously interested in book studies; and,
- to give nongrade, graduate-level students who wish to study the book a framework for their study.

Students have two options in pursuing the certificate. Graduate students enrolled in a degree program at Iowa may work concurrently toward the certificate and an M.A., M.F.A., or Ph.D. Students who wish to pursue the certificate but not a graduate degree may do so with nongrade status in the Graduate College.

Requirements

The certificate requires 24 semester hours of course work. At least 6 semester hours must be taken from the academic course list and 6 semester hours from the arts and technologies course list. Required course work also includes a final project—a substantial work supervised by a committee chosen by the student. For more information, consult the center’s publications List of Courses and Final Project Guidelines.

Admission

Admission requires active standing in the graduate college. Applicants submit a statement of purpose and evidence of scholarly or creative work to the center. For more information about admission, contact the center.

Financial Support

Students may secure support from regular University sources or from outside funding agencies. Working assistantships are available at the center’s professional production workshops.
Internships and part-time work are available to qualified student and nonstudent professionals, especially in the areas of bookbinding, papermaking, and letterpress printing.

Associated Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Term</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>01F:103</td>
<td>The Media of Drawing</td>
<td>3 s.h.</td>
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<tr>
<td>22C:197</td>
<td>Readings in Computer Science</td>
<td>3 s.h.</td>
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Courses

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Term</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>108:100</td>
<td>Special Project for Undergraduates</td>
<td>arr.</td>
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<tr>
<td>108:110</td>
<td>Papermaking</td>
<td>3 s.h.</td>
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<tr>
<td>108:111</td>
<td>Advanced Papermaking</td>
<td>3 s.h.</td>
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<tr>
<td>108:131</td>
<td>Artist’s Books Workshop</td>
<td>3 s.h.</td>
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<tr>
<td>108:140</td>
<td>Calligraphy: Gothic Hands</td>
<td>3 s.h.</td>
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<tr>
<td>108:141</td>
<td>Calligraphy: Expressive Forms</td>
<td>3 s.h.</td>
<td></td>
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<tr>
<td>108:143</td>
<td>Calligraphy: Foundational Hands</td>
<td>3 s.h.</td>
<td></td>
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<tr>
<td>108:150</td>
<td>Non-Adhesive Bookbinding</td>
<td>3 s.h.</td>
<td></td>
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<td>108:151</td>
<td>Case Bookbinding</td>
<td>3 s.h.</td>
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<tr>
<td>108:152</td>
<td>Advanced Book Structures</td>
<td>3 s.h.</td>
<td></td>
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<tr>
<td>108:153</td>
<td>Studies in Bookbinding</td>
<td>3 s.h.</td>
<td></td>
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<tr>
<td>108:154</td>
<td>Non-Traditional Bookbinding</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>108:155</td>
<td>Bookbinding: Historical Book Structures</td>
<td>3 s.h.</td>
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</table>

Undergraduate Programs

Bachelor of Science

Present and projected demand for chemists with a B.S. degree is excellent in research and in control and process-development work. The B.S. program also provides all the prerequisites for graduate work in chemistry or biochemistry. The Bachelor of Science requires 66 semester hours, of which 46 must be earned in chemistry courses. Of these, at least 9 semester hours should be earned in chemistry courses at The University of Iowa.

The following courses are required.

Chemistry

004:013-014 Principles of Chemistry I-II 6 s.h.
004:018-019 Chemical Science I-II (preferred) 6 s.h.
004:016 Principles of Chemistry Lab 2 s.h.
004:020 Chemical Science Laboratory 2 s.h.
004:021 Basic Measurement 3 s.h.
004:111-112 Analytical Chemistry I-II 6 s.h.
004:121-122 Organic Chemistry I-II 6 s.h.
004:123-124 Organic Chemistry I-II for Majors (preferred) 6 s.h.
004:125 Inorganic Chemistry 2 s.h.
004:131-132 Physical Chemistry I-II 6 s.h.
004:141 Organic Chemistry Laboratory 3 s.h.
004:142 Organic Chemistry Laboratory for Majors (preferred) 3 s.h.
004:143 Analytical Measurements 3 s.h.
004:144 Physical Measurements 3 s.h.
004:153 Inorganic Chemistry Laboratory 3 s.h.
004:170 Advanced Inorganic Chemistry 3 s.h.
Advanced science electives may be chosen in:

- 22M:025-026 Calculus I-II 8 s.h.
- 22M:021-022 Calculus and Modeling I-II 8 s.h.
- 22M:035-036 Engineering Calculus I-II 8 s.h.
- 22M:045-046 Accelerated Calculus with Applications I-II 8 s.h.

Research must total at least 6 semester hours.

Advanced courses in chemistry, biological sciences, mathematics, computer science, astronomy, physics, engineering, radiation biology, biochemistry, microbiology, pharmacology, pharmacy, botany, biological sciences, geology, or physiology.

**Bachelor of Arts**

The B.A. curriculum in chemistry provides a general education with some concentration in fundamental chemistry but with a wider choice of electives than the B.S. curriculum includes. Advanced courses in chemistry, biological sciences, mathematics, physics, or other scientific areas are recommended.

The Bachelor of Arts requires 51 semester hours, of which 37 must be earned in chemistry courses. Of these, at least 6 semester hours must be earned in chemistry courses at The University of Iowa. Students who elect this program may qualify to be high school teachers, provided they meet teacher licensure requirements. By choosing appropriate electives, students can meet entrance requirements for medicine, dentistry, or other professional programs while satisfying the B.A. requirements in chemistry.

The major course requirements for the B.A. are as follows:

**Chemistry**

- 004:013-014 Principles of Chemistry I-II (accepted) 6 s.h.
- or 004:018-019 Chemical Science I-II (preferred) 6 s.h.
- 004:016 Principles of Chemistry Lab 2 s.h.
- or 004:020 Chemical Science Laboratory 2 s.h.
- 004:021 Basic Measurement 3 s.h.
- 004:111-112 Analytical Chemistry I-II 6 s.h.
- 004:121-122 Organic Chemistry I-II 6 s.h.
- or 004:123-124 Organic Chemistry I-II for Majors (preferred) 6 s.h.
- 004:125 Inorganic Chemistry 2 s.h.
- 004:131-132 Physical Chemistry I-II 6 s.h.
- 004:141 Organic Chemistry Laboratory 3 s.h.
- or 004:142 Organic Chemistry Laboratory for Majors (preferred) 3 s.h.

One of these:
- 004:143 Analytical Measurements 3 s.h.
- 004:144 Physical Measurements 3 s.h.
- 004:153 Inorganic Chemistry Laboratory 3 s.h.

**Integral Calculus**

One of these sequences:
- 22M:021-022 Calculus and Modeling I-II 8 s.h.
- 22M:025-026 Calculus I-II 8 s.h.
- 22M:035-036 Engineering Calculus I-II 8 s.h.
- 22M:045-046 Accelerated Calculus with Applications I-II 8 s.h.

Credit earned in advanced science elective courses and in 004:162 Undergraduate Research must total at least 6 semester hours. Advanced science electives may be chosen in the areas of chemistry, mathematics, computer science, astronomy, physics, engineering, radiation biology, biochemistry, microbiology, pharmacology, pharmacy, botany, biological sciences, geology, or physiology.

**Introducory Physics**

- 029:011-012 College Physics (accepted) 8 s.h.
- or 029:017-018 Introductory Physics I-II (preferred) 8 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: math through calculus I, chemistry 054:018, 004:019, and 004:020 or equivalent course work, and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: the courses listed above, plus calculus II, organic chemistry I and II, physics I and II, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: the courses listed above, plus four more courses in the major, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: the courses listed above, plus one or 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

**Bachelor of Science**

Before the third semester begins: math through calculus I, chemistry 004:018, 004:019, and 004:020 or equivalent course work, and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: the courses listed above, plus calculus II, physics I and II, organic chemistry I and II, three other courses in the major, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: the courses listed above, plus six more courses in the major, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: the courses listed above, plus 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**

To graduate with honors in chemistry, a student must be a member of the University Honors Program, take 004: 162 Undergraduate Research, complete a research project acceptable to his or her research adviser, and write an honors thesis based on that research. Students are encouraged, but not required, to present their research at local and regional meetings and to publish their results in professional journals.

**Minor**

The minimum requirements for a minor in chemistry are 15 semester hours, including 3 semester hours in introductory-level courses and 12 semester hours taken at The University of Iowa in advanced chemistry courses numbered 100 and above; 004:013-014 Principles of Chemistry I-II and 004:016 Principles of Chemistry Lab, or 004:018-019 Chemical Science I-II and 004:020 Chemical Science Laboratory are prerequisites for upper-level courses in chemistry.

**Teaching Licensure**

Chemistry courses required for the B.S. or B.A. satisfy the major requirements for teaching in secondary schools. A minor in chemistry satisfies the requirements for a teaching emphasis in chemistry (see “Science Education” in the College of Liberal Arts section of the Catalog).

**Special Opportunities for Undergraduates**

The department offers undergraduates-majors and other students interested in chemistry-a number of programs and 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 and maintains a file of lecture hand-outs; provides a library of chemistry textbooks and maintains bulletin boards with information on all lower-level chemistry courses. Information about student organizations and departmental scholarships and awards also is available at the Chemistry Center.
Student Organizations
Students may join the Undergraduate Chemical Society (UCS), a student affiliate of the American Chemical Society (ACS). Chapter activities include dinner meetings with guest speakers; a chemistry tutoring service for other students; participation in local and national meetings of the ACS; and participation in chemistry outreach programs. Students in UCS develop leadership, organization, and speaking skills that will be valuable throughout their college experience and subsequent 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 also supports the activities of WISE (Women in Science and Engineering), 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 residence hall for first-year women 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), and the Merck Index Award. Chemistry majors also may apply for Russell K. Simms and Shoemaker-Strickler Scholarships.

Graduate Programs
Master of Science
The department offers the M.S., with or without thesis, in analytical, inorganic, organic, and physical chemistry and in chemical physics. Candidates for the M.S. must demonstrate minimal proficiency in 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. At least 30 semester hours of graduate work are required for the M.S. A grade-point average of at least 2.50 is required for admission to the master’s examination.

Doctor of Philosophy
A program of study for the Ph.D. in the areas listed for the M.S. includes the minimal proficiency examinations, core courses as necessary, a minimum of 11 semester hours of advanced course work, and research. Students who have met the course requirements with a cumulative grade-point average of 3.00 or higher are admitted to the oral comprehensive examination upon presentation and preliminary approval of their written research proposal; they must take the oral comprehensive examination no later than the end of their second year of enrollment.

Upon completing the Ph.D. research, students prepare the dissertation. The final examination consists of an oral defense of the thesis, at which time at least one manuscript of the publishable portion of the thesis is presented.

Interdisciplinary Programs
The Department of Chemistry cooperates in interdisciplinary programs in applied mathematical sciences and in chemical physics (see the Graduate College section of the Catalog). Students with undergraduate degrees in chemistry, physics, mathematics, or engineering are eligible.

Admission
Applicants for graduate admission should have a bachelor’s degree in chemistry with a recommended grade-point average above 3.00. Most admitted graduate students receive financial support; application forms are available from the Department of Chemistry.

Facilities
The department is housed in a five-story building containing two auditoriums, five lecture rooms, fifteen undergraduate laboratories, forty-three graduate research laboratories, a computer laboratory, and a number of special-purpose instruction rooms. Modern scientific equipment is available for research.

The department’s excellent library facilities are available to all students. The library contains standard reference works and complete volumes of chemistry and chemical engineering journals and subscribes to a large number of current scientific journals.

Courses
Primarily for Undergraduates
Students planning to take more than one year of chemistry should take 004:013, 004:014, and 004:016 or 004:018, 004:019, and 004:020. Students who require only one year of chemistry may take 004:007, 004:008, and 004:016.

004:005 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. GE: natural sciences. Closed to students with previous college-level course work in chemistry.

004:006 Technology and Society Laboratory 1 s.h.
Laboratory for 004:005; demonstrations, student experiments. GE: natural sciences. Closed to students who have earned 4 or more semester hours in chemistry courses. Pre- or corequisite: 004:005.

004:007 General Chemistry I 3 s.h.
Atomic structure, chemical bonds, mole relations, stoichiometry, states of matter, acids and bases, reaction rates, electrochemistry, nuclear chemistry. GE: natural sciences. Prerequisite: elementary algebra.

004:008 General Chemistry II 3 s.h.
Organic chemistry and biochemistry. GE: natural sciences. Prerequisite: 004:007 or high school chemistry.

004:013 Principles of Chemistry I 3 s.h.
Chemical bonding and chemical reactions; atomic and molecular structure chemical equations, stoichiometry, gases, liquids, thermodynamics of phase changes, solutions, equilibrium, acids, bases, pK, elementary organic chemistry, the solid state, electronic and spatial structure of silicon, its compounds and related ceramic materials. GE: natural sciences. Prerequisite: 22M:002, or ACT math subscore of 24 and MPT II score of 20, or ACT math subscore of 24 and MPT III score of 10.

004:014 Principles of Chemistry II 3 s.h.
Continuation of 004:013; collective properties of solutions, chemical thermodynamics, electrochemistry, chemical kinetics, chemical bonding, the top 10 chemicals produced by the chemical industry, nuclear chemistry. GE: natural sciences. Prerequisite: 004:007 or 004:013 or 004:018.

004:016 Principles of Chemistry Lab 2 s.h.
Laboratory techniques for 004:014. GE: natural sciences. Prerequisite: a grade of C or higher in 004:013 or 004:014 or 004:018 or 004:019.

004:018 Chemical Science I 3 s.h.
Chemical bonding and reactions, atomic and molecular structure, chemical equations, stoichiometry, gases, liquids, solids, phase changes, solutions, colligative properties, equilibrium, acids, bases, pH, applications closely allied to chemistry. GE: natural sciences. Open only to chemistry, biochemistry, and chemical engineering majors. Prerequisites: 22M:002, or ACT math subscore of 24 and MPT II score of 20, or ACT math subscore of 24 and MPT III score of 10; and declared chemistry, biochemistry, or chemical engineering major.

004:019 Chemical Science II 3 s.h.
Continuation of 004:018; chemical thermodynamics, electrochemistry, chemical kinetics, chemical bonding, systemic descriptive chemistry of nonmetals and metals, nuclear chemistry, applications closely allied to chemistry. GE: natural sciences. Open only to chemistry, biochemistry, and chemical engineering majors. Prerequisites: 004:007 or 004:013 or 004:018; and declared chemistry, biochemistry, or chemical engineering major.

004:020 Chemical Science Laboratory 2 s.h.
Laboratory techniques for 004:019. GE: natural sciences. Open only to chemistry, biochemistry, and chemical engineering majors. Prerequisites: 004:013 or 004:018; and a grade of C or higher in 004:018. Corequisite: 004:019.

004:021 Basic Measurement 3 s.h.
Continuation of 004:016; techniques of data collection and processing, including statistical and instrumental techniques for data collection and computer techniques for data processing. Open only to chemistry majors. Prerequisites: 004:016 or 004:020, and chemistry major.

004:029 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). Open only to first- and second-semester students.

004:111 Analytical Chemistry I 1 s.h.
Modern theory and practice; emphasis on chemical equilibria (acid-base chemistry, solubility, complexation) and electroanalytical chemistry (potentiometry, volumetry, coulometry). Pre- or corequisite: 004:131 or 004:132 or Consent of instructor.

004:112 Analytical Chemistry II 1 s.h.
Continuation of 004:111; emphasis on instrumental methods, including atomic and molecular spectroscopy, mass spectrometry, chemical separations. Prerequisite: 004:111.
Advanced Analytical Chemistry 3 s.h.
Emphasis on fundamental aspects of electrochemistry, atomic and molecular spectroscopy, chemical separations. Prerequisites: 004:112, 004:131, and 004:132.

Advanced Organic Chemistry 3 s.h.
Basic concepts from perspectives of structure, mechanism, synthesis, stereochemistry. Prerequisite: 004:122 or 004:124.

Introduction to Polymer Chemistry 3 s.h.
Synthesis, structure, characterization, properties, and applications of polymers. Prerequisites: 004:122 and 004:125.

Introduction to Molecular Modeling 3 s.h.
Basic theories of molecular modeling and their hands-on applications to chemical research; potential energy surfaces; geometry optimization; molecular dynamics; molecular mechanics, semi-emipirical and initio SCF theory; basis sets; electron correlation; density functional theory; electrostatic potentials. Prerequisite: 004:132.

Chemical Sensors 1 s.h.
Detection, applications and sheet method, supercritical fluid extraction and chromatography, electrochemical, light scattering and infrared spectroscopy. Prerequisites: 004:111, 004:112, and 004:171.

Environmental Analytical Chemistry 2 s.h.
Basics of atmospheric chemistry, aquatic chemistry, soil geochemistry; major chemical cycles and effects of environmental pollution in these systems; analytical methods in environmental studies. Prerequisites: 004:111, 004:112, and 004:171.

Chemical Equilibrium and Solution Properties 1 s.h.
Protocol for solving equilibrium problems; characterizing systems with equilibrium methods; role of solvent and solution properties on equilibrium responses. Prerequisites: 004:111, 004:112, and 004:171.

Application of Lasers 1 s.h.
Lasers and laser spectroscopy methods; basics of laser theory and operation, laser-induced processes; major lasers-based spectroscopy methods, including absorption, fluorescence, ionization techniques; applications to analysis. Prerequisites: 004:111, 004:112, and 004:171.

Introduction to Organic Research 3-4 s.h.
Methods and techniques of structure determination for organic compounds. Prerequisite: 004:132.

Interpretation of Spectra 2-3 s.h.
Interpretation of electronic, vibrational and magnetic resonance, and mass spectra of complex molecules. Prerequisites: 004:132 and 004:172.

Organic Chemistry Special Topics 3 s.h.
Prerequisite: 004:172 or equivalent.

Mechanisms of Organic Reactions 3 s.h.
Application of basic mechanistic concepts.

Advanced Organic Preparations 3 s.h.
Preparation of complex organic compounds. Prerequisite: 004:172.

Statistical Thermodynamics I 3 s.h.

Quantum and Computational Chemistry 3 s.h.
Quantum mechanics of chemical systems; time-independent and time-dependent perturbation theory; variational theory; Hartree-Fock theory; atomic structure and spectra. Prerequisite: 004:132.

Quantum Chemistry II 3 s.h.
Continuation of 004:233, which is prerequisite; group theory; molecular orbital and valence bond theories, Rothon procedure; electronic, vibrational, rotational, spin resonance spectroscopy, quantum statistics, current topics. Prerequisite: 004:233.

Chemical Kinetics 3 s.h.
Experimental and theoretical aspects of the dynamics of chemical reactions, from phenomenological perspective. Prerequisite: 004:132.

Surface Chemistry and Heterogeneous Processes 3 s.h.
Fundamental and applied aspects of surface chemical processes; theories of molecular adsorption, adsorption/desorption kinetics and surface complexation; surface analysis and instrumentation; applications of surface chemistry in heterogeneous catalysis, heterogeneous environmental/ambient processes, and materials chemistry. Prerequisite: 004:131 or consent of instructor.

Physical Chemistry Topics 1-3 s.h.

Perspectives in Biocalitasis 1 s.h.

Seminar: Analytical Chemistry 0 s.h.
Consent of instructor required.

Seminar: Inorganic Chemistry 0 s.h.
Consent of instructor required.

Seminar: Organic Chemistry 0 s.h.
Consent of instructor required.

Seminar: Physical Chemistry 0 s.h.
Consent of instructor required.

1-4 s.h.
May be repeated. Consent of advisor required.

Advanced Inorganic Chemistry 3 s.h.
Modern principles, including crystal field/ligand field/molecular orbital theory, inorganic reaction mechanisms, coordination chemistry, bioinorganic chemistry, main group and transition metal organometallic chemistry, solid-state inorganic chemistry. Prerequisites: 004:125 and 004:132. Pre- or corequisite: 004:153.
CINEMA AND COMPARATIVE LITERATURE

Chair: Steven Ungar

Professors: Rick Allman, Rudolf E. Kuenzli, Franklin Miller, Alan F. Nagel, Leighton Pierce, Lauren Rabonovit, Steven Ungar

Associate professors: Anne Donadey, Sabine Golz, Maureen Robertson, Mitsuharu Yoshimoto

Assistant professors: Louis Schwartz, Sasha Waters, David Wittenberg

Adjunct assistant professor: Sandra H. Barkan

Assistant professors: Louis Schwartz, Sasha Waters, David Wittenberg

The Department of Cinema and Comparative Literature presents literature, other arts, translation, and film as subjects of international and interdisciplinary study. It provides a basis for intensive work in literature, literary theory, critical methods, translation, film study, and the production of film, video, and digital arts.

The Department encourages study in comparative arts, particularly with emphasis on cinema, where the program’s resources are especially strong. Students and faculty have easy access to the resources of the Translation Workshop and the Institute for Cinema and Culture (see the Special Resources at Iowa section of the Catalog).

The cinema and comparative literature faculty offers expertise in the languages and cultural study of the Americas, China, England, France, Germany, Italy, Japan, North Africa, Spain, and Sub-Saharan Africa. Specific expertise and direction are available in translation and in film and audiovisual history, production, and theory.

In addition to its own faculty, the department calls on faculty members in other departments and programs, including American studies, women’s studies, classics, Asian languages and literature, communication studies, English, French and Italian, German, history, Spanish and Portuguese, Russian, and theatre arts.

Undergraduate Program

The undergraduate majors in cinema and comparative literature provide individualized programs in the interdisciplinary study of literature and the study and production of film and audiovisual arts. The program is designed to promote cultural awareness, to increase speaking and writing skills, and to develop capacities for systematic reasoning.

The Department of Cinema and Comparative Literature offers two undergraduate majors, a B.A. in comparative literature and a B.A. in cinema. Both ordinarily require that students earn at least 21 semester hours in the major while in residence at The University of Iowa.

Bachelor of Arts in Comparative Literature

Requirements for the B.A. in comparative literature have changed. Students who enter the major on or after the first day of fall semester 2000 must complete the new requirements. Students who entered the major before that date may choose to complete either the old requirements (as shown on their degree evaluation) or the new requirements.

Students who choose the old requirements must complete the major and graduate by August 2004.

Majors in comparative literature share a common set of basic courses in literatures of widely divergent cultures and historical periods, translation, and 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. 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. It also offers excellent preparation for graduate work in the humanities.

The successful pursuit of comparative literature requires that students study at least one foreign cultural tradition, appropriately emphasizing 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 upon basic issues such as the nature and value of storytelling in literature and other arts-for instance, film, song, and painting. Translation between natural 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.

Two concentrations are open for completing the B.A. degree: language and literature, and literature and arts. Working with faculty advisers close to their particular track and interests, students develop coherent, individualized programs of study that reflect their own interests and developing skills. In addition to completing the General Education Program, majors complete a minimum of 33 semester hours in courses as follows.

<table>
<thead>
<tr>
<th>COMMON COURSES</th>
<th>All students take the following courses, for a total of 18 semester hours.</th>
</tr>
</thead>
<tbody>
<tr>
<td>048:025</td>
<td>Introduction to Critical Reading and Viewing 3 s.h.</td>
</tr>
<tr>
<td>048:040-041</td>
<td>Major Texts in World Literature I-II 6 s.h.</td>
</tr>
<tr>
<td>048:095</td>
<td>Undergraduate Seminar 3 s.h.</td>
</tr>
</tbody>
</table>
One of these:
048:030 Introduction to Film Theory 3 s.h.
048:100 Introduction to Criticism and Theory 3 s.h.
048:120 Issues in Film Theory 3 s.h.

Additional cinema and comparative literature course work, including at least 9 s.h. of advanced film studies or film and video production courses numbered 048:050 or above 14 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. in Cinema

The four-year graduation plan is not available for the B.A. in cinema. Students interested in developing an individualized four-year graduation plan should consult their advisers.

B.A. in Comparative literature

Note: Because the major may require competency in a language in which the student will take advanced work, the student may need to acquire this language competency through course work early in the plan. Such course work is not reflected in these checkpoints.

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least two courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least six courses in the major and at least three-quarters of the semester hours required for graduation

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

To graduate with honors in cinema or comparative literature, students must meet eligibility standards listed in “Guide to Honors,” published by the University Honors Program. They must identify an area that extends beyond regularly offered course work and must complete a project in consultation with one or two faculty members, including the major adviser. Information is available from the Department of Cinema and Comparative Literature office.

Minor

Students majoring in other disciplines may earn a minor in the department by completing 15 semester hours of work at The University of Iowa in cinema or comparative literature with a grade-point average of at least 2.00. Of these 15 semester hours, at least 12 must be in courses numbered 048:050 and above. Students must choose courses with a primary emphasis in cinema or comparative literature, according to the minor they intend to complete.

Graduate Programs

Master of Arts in Film Studies

The M.A. in Film Studies requires 36 semester hours of course work. The focus is on film in an international context, with required distributions of course work in U.S. cinema, European cinema, world cinemas, and production, documentary, animation, or experimental film.

Formal degree requirements are met by course work, a research paper, and a written examination on two areas, selected by the student from one list focusing on film theory and another list focusing on film history. Exams are offered annually in January, and the research paper normally is submitted in April of the second year of graduate study.

Master of Arts in Comparative literature

The M.A. in comparative literature requires 37 semester hours of course work. The focus is on literature in an international context, with concentration on two or more national literatures and on the theory and study of literature in general. In consultation with faculty advisers, students combine courses in comparative literature and allied departments to design a coherent program of study.

Formal degree requirements may be satisfied by a written examination on reading lists agreed upon by students and their advisers, or by a written thesis and an oral examination on the thesis and its relation to problems and issues in comparative literature. The M.A. also may be awarded upon successful completion of the comprehensive examination for the Ph.D.

Master of Fine Arts in Film and Video Production

The M.F.A. degree combines 54 semester hours of creative and scholarly course work aimed at developing abilities to produce artistic work. A comprehensive exam in January of the second year, a research paper, and a thesis project complete the formal degree requirements.

Master of Fine Arts in Translation

The M.F.A. in translation promotes creative performance and study of languages, literatures, criticism, and cultural history. The aim of the program is to encourage the practice of literary translation and to bring about greater awareness of its tradition, contributions, and possibilities. The Iowa Translation Workshop is the central course in the program.

Admission

The study of literature across linguistic boundaries requires special training in languages. A thorough knowledge of at least
Courses

048:000 Cooperative Education Internship 0 s.h.

048:001 Introduction to Film Analysis 1 s.h.
Methods of analyzing various kinds of films, with emphasis on classic narrative works from the American and European traditions; shot-by-shot breakdown, narrative segmentation, auteurs, genres. Same as 36F:001.

048:002 Survey of Film 1 s.h.
Film history, criticism; emphasis on technology, technical, cultural function; screenings of narrative, documentary, experimental films. GE: humanities. Same as 36F:002.

048:010 Contemporary Cinema 1 s.h.
Current American and foreign cinema; types, styles, directors; relationships between movies and film industries, cultural contexts; the movie-going experience. Same as 36F:010.

048:011 Films and Screenplays 3 s.h.
Structure of films in a variety of formats, from canonical films examined with the aid of their scripts to promising screenplays that never reached the screen or did so in altered form. Same as 008:011, 36F:011.

048:012 Film and Society 1 s.h.
Social relationships between motion pictures and American culture, both historical and contemporaneous; censorship, treatment of social issues; representation of minorities in cinema, roles of minority groups in filmmaking. Same as 36F:012.

048:020 U.S. Film 1 s.h.
The film industry and its social and artistic effects reflected in characteristic films across several decades. Same as 36F:020.

048:021 European Film History 1 s.h.
German Expressionism, Soviet Constructivism, Italian Neorealism, the new German film; history of cinematic art in cultural, social, political contexts. GE: humanities. Same as 36F:021.

048:022 World Film 3 s.h.
Introduction to filmmaking and film culture in several countries or regions outside the United States and Europe: films from Africa, Asia, and Latin America in historical context. Same as 36F:022.

048:023 Documentary Film 1 s.h.
Historical survey of nonfiction film from Flaherty to cinema write; impact of television on film. Same as 36F:023.

048:025 Introduction to Critical Reading and Viewing 1 s.h.
Critical approach to literature and audiovisual media (film, video, interactive multimedia); selected texts, scholarly and critical responses to them. Prerequisite: completion of rhetoric requirement.

048:030 Introduction to Film Theory 1 s.h.
Language, art form, social expression; emphasis on major historical positions in classical film theory, recent developments. Same as 36F:050.

048:034 Modes of Film and Video Production 4 s.h.
Same as 36D:034.

048:035 Introduction to Media Production 4 s.h.
Nonfiction, narrative, and experimental film and video production. Same as 019:035, 36D:035.

048:040 Major Texts in World Literature I 1 s.h.
Reading, analysis of major literary texts from writings' origins to 1600 in the Mediterranean, Asia, Africa; interrelationship of literature, history. Offered fall semesters. GE: humanities. Same as 008:040.

048:041 Major Texts of World Literature II 1 s.h.
Reading and analysis of major literary texts from Neoclassicism to 1800, in chronological sequence, emphasis on interrelationships of literature and history. Offered spring semesters. GE: humanities. Prerequisite: completion of rhetoric requirement. Same as 008:041.

048:042 Major Texts in World Literature III 1 s.h.
Comparative study of African, East Asia, the Near East, or South Asia; readings in translation (may focus on special topics, such as women, literature, revolution, lyric traditions). GE: humanities Prerequisite: completion of rhetoric requirement. Same as 039:050.

048:051 Film Criticism 1 s.h.
Purposes, presuppositions, styles of film criticism, from journalistic to scholarly, theoretical positions related to concerns of film critics. Same as 36F:051.

048:052 Gender and Film 1 s.h.
American films from 1920s to 1980s, with emphasis on images of sexes, how images relate to society; theories of cinema and sexual differences. Same as 36F:052.

048:055 Issues in Comparative Literature 3 s.h.
Topics in the context of two or more national literatures or allied fields of inquiry.

048:065 Film Production: Material of 16mm Film 3 s.h.
Sixteen mm; camera operation, sound recording, editing; production of short nonsync-sound film. Prerequisite: 048:035. Same as 36D:097.

048:066 Video Production: Nonfiction 3 s.h.
Single-camera shooting on location, with emphasis on videotape editing; exercises oriented to nonfiction forms. Prerequisite: 048:025. Same as 36D:098.

048:067 Screenwriting 3 s.h.
Visualization, sequencing, dialog; preparation of treatment, screenplay for fiction film, script problems. Same as 36D:099.

048:070 Styles and Genres 3 s.h.
Film types (gangster, science fiction, Italian comedy, etc.); validity of treating films in such groups. May be repeated. Same as 36D:070.

048:071 Film Authors 3 s.h.
Study of a major director or comparison of two or three directors; film analysis and criticism; creativity as an industrial tradition. Same as 36F:120.

048:099 Individual Study 3 s.h.
Prerequisites: one course numbered above 36F:099, and 048:065 or 048:066. Same as 36D:121.

048:100 Introduction to Criticism and Theory 3 s.h.
Critical approaches to the phenomenon of literature. For juniors. Same as 008:100.

048:101 Topics in U.S. Silent Film 3 s.h.
Specific issues or periods in U.S. silent film. May be repeated. Same as 36F:101.

048:102 Topics in U.S. Sound Film 3 s.h.
Specific issues or periods in U.S. sound film. May be repeated. Same as 36F:102.

048:103 Topics in Contemporary Film 3 s.h.
Specific issues or periods in contemporary film. May be repeated. Same as 36F:103.

048:104 Topics in European Film History 3 s.h.
History of film; French culture, film analysis, relationship of filmmakers to politics, religion, and so forth. GE: foreign civilization and culture. Same as 008:147, 36F:105.

048:106 Topics in Asian Cinema 3 s.h.
Same as 008:127, 36F:106, 039:145.

048:109 European Literature of the Nineteenth Century 3 s.h.
International and national perspectives on literary movements, works, authors before 1900. Same as 008: 109.

048:110 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.

048:111 Cinema and Culture 3 s.h.
Films of one or more countries and periods; emphasis on interactions among the arts, prevailing social conditions, industries and technologies reflected in films. Same as 36F:111.

048:112 Proseminar in Cinema and Culture 1-2 s.h.
Focus on symposium topic of Institute for Cinema and Culture. Same as 36F:112.

048:113 Film and Video Production: Drama 3 s.h.
Prerequisites: 048:065 and 048:066.

048:114 Representation and Social Divisions 3 s.h.
Importance of motion pictures in relation to groups identified by gender, race, class, ethnicity. Same as 36F:121.

048:115 Literary Genres in European Literature II 3 s.h.
Same as 008:126.

048:116 Digital Production: Interactive Forms 3 s.h.
Experience in conceiving and authoring interactive presentations typical of those delivered via CD-ROM; related issues, such as the author/user relationship in social and institutional contexts (e.g., business, game playing, entertainment, education). Same as 36D:111.

048:120 Issues in Film Theory 3 s.h.
A theorist, approach, or problem in film. Recommended: classical film theory. Same as 36F:120.

048:121 Film and Video Production: Selected Topics 3 s.h.
Student productions focusing on a particular genre, issue, or process; 16mm, video, or audio, such as experimental film or video, collaborative projects, nonfiction, narrative, and so forth. Prerequisites: one course numbered above 36D:099, and 048:065. Same as 36D:121.

048:122 Film Production: Animation/Optical Printing 3 s.h.
Experimental techniques in 16mm film or video animation and image manipulation. Prerequisite: 048:065 or 048:066. Same as 36D:122.

048:123 Film and Video Production: Image 3 s.h.
Design, Strategies, techniques, and technologies used in moving image production; emphasis on generic lighting practices, composition; short projects using film, videotape. Same as 36D:123.

048:124 Film Production: Advanced 16mm Film 4 s.h.
Processes and approaches to the short film; student production of a seven-minute, sync-sound, mixed, and printed 16mm film. Prerequisites: one course numbered above 36D:099, and 048:065. Same as 36D:124.
A Bachelor of Arts in classics provides a solid foundation for graduate work in classics, European literature, law, history, art, philosophy, and religion. Graduates have become secondary school and university teachers, lawyers, doctors, librarians, museum curators, and bankers.

**Classics**

Chair: Helena Dettmer
Professor: Helena Dettmer
Professors emeriti: Jonathan A. Goldstein, Erling B. Holtsmark, Roger A. Hornsby, Donald F. Jackson
Associate professors: Mary J. Depew, John F. Finamore, Carin M. Green, Robert C. Ketterer
Assistant professors: John F. Garcia, Craig Gibson, Eleftherios Eghiniotis, Glenn R. Storey
Undergraduate degrees: B.A. in Ancient Civilization, Classics, Greek, Latin
Undergraduate nondegree programs: minors in Ancient Civilization, Classics, Greek, Latin
Graduate degrees: M.A. in Classics, Greek, Latin; Ph.D. in Classics

Web site: http://www.uiowa.edu/-classics

Classics is the study of ancient languages, literatures, and cultures of the Mediterranean basin from approximately 2000 B.C. to 600 A.D. 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.

**Undergraduate Programs**

A Bachelor of Arts in classics provides a solid foundation for graduate work in classics, European literature, law, history, art, philosophy, and religion. Graduates have become secondary school and university teachers, lawyers, doctors, librarians, museum curators, and bankers.

**Major in Greek**

Graduates with a major in Greek learn to read the ancient Greek language, become acquainted with the major works of Greek literature, and acquire knowledge of the history of ancient Greece and the Near East of the eighth through the sixth centuries B.C., where most of the modern Western notions of political, artistic, and social life are rooted.

For a B.A. with a major in Greek, students must earn a minimum of 30 semester hours in the major, of which at least 24 semester hours must be in Greek language courses. Transfer credit is evaluated on an individual basis. The following courses, or their equivalents, are required.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>014:001-002</td>
<td>Elementary Greek</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>014:011-012</td>
<td>Second-Year Greek I-II</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>014:176</td>
<td>Greek Composition</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Four additional Greek language courses numbered 187 or above 12 s.h.

The advanced undergraduate Greek courses are 014:187-188 Archaic and Classical Periods I-II and 014:189-190 Classical and Hellenistic Periods I-II. They rotate over a two-year cycle and may be repeated or taken in any sequence. The advanced courses consider a broad range of prose and poetry in their historical contexts.

**Major in Latin**

Graduates with a major in Latin learn to read Latin; they also acquire 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 transmitted the culture of Greece to the West.

Candidates for the B.A. with a major in Latin must earn a minimum of 30 semester hours in the major, at least 24 of which must be in Latin language courses. Transfer credit is evaluated on an individual basis. The following courses, or their equivalents, are required.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>020:001-002</td>
<td>Elementary Latin</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>020:117</td>
<td>Accelerated Elementary Latin (summer session)</td>
<td>4 or 8 s.h.</td>
</tr>
<tr>
<td>020:161-017</td>
<td>Second-Year Latin I-II</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>020:174</td>
<td>Latin Civilization Composition</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Four additional Latin language courses numbered above 148 12 s.h.

The advanced undergraduate Latin courses are 020:187-188 Latin Literature of the Republic I-II and 020:189-190 Latin Literature of the Empire I-II. They rotate over a two-year cycle and may be repeated or taken in any sequence. In addition, 020:190 Medieval Latin is offered every year. The advanced courses consider a broad range of prose and poetry in their historical contexts.

See the College of Education section of the Catalog for information on teacher licensure in Latin.

**Major in Classics**

Classics (Greek and Latin)

The B.A. with a major in classics requires a minimum of 36 semester hours in the major, at least 30 of which must be in Greek and Latin language courses. Transfer credit is evaluated on an individual basis. The following courses, or their equivalents, are required.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>014:001-002</td>
<td>Elementary Greek</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>014:011-012</td>
<td>Second-Year Greek I-II</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>014:176</td>
<td>Greek Composition</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Four additional Greek language courses numbered 187 or above 12 s.h.

The advanced undergraduate Greek courses are 014:187-188 Archaic and Classical Periods I-II and 014:189-190 Classical and Hellenistic Periods I-II. They rotate over a two-year cycle and may be repeated or taken in any sequence. The advanced courses consider a broad range of prose and poetry in their historical contexts.

**Major in Ancient Civilization**

This major is sponsored by the Schools of Art and Art History and Religion and the Departments of Classics and History. It concentrates on the ancient civilization of the Mediterranean world and draws on courses offered by various University departments. Although the major is not primarily a preparation for a graduate degree program in classics, it provides a sound basis for preparing teachers at the secondary school and junior college levels. It also provides a sound basis in liberal arts for preprofessional training in law, medicine, and other professions. In addition to the normal college requirements for the B.A., the following are specific requirements of the major.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ancient art</td>
<td>6 s.h.</td>
<td></td>
</tr>
<tr>
<td>Ancient history</td>
<td>6 s.h.</td>
<td></td>
</tr>
<tr>
<td>Ancient philosophy or religion</td>
<td>6 s.h.</td>
<td></td>
</tr>
<tr>
<td>Classics (either &quot;classics in English&quot; courses, or Latin or Greek language courses)</td>
<td>6 s.h.</td>
<td></td>
</tr>
<tr>
<td>Appropriate courses in art, history, philosophy, religion, or linguistics</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>014:194 Seminar in Ancient Civilization</td>
<td>offered only fall semesters</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Of the required 30 semester hours, at least 15 must be at the advanced level. These include courses in English at the 100 level and Latin and Greek language courses at the intermediate and advanced levels (014:011-012 or 020:016-017). Transfer credit is evaluated on an individual basis.

**Four-Year Graduation Plan**

The following checklists 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. in Ancient Civilizations**

Note: 014:194 Seminar in Ancient Civilization is offered only during fall semesters; students must take it during their last fall semester in order to stay on the four-year graduation plan.

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least two courses in the major and at least three-quarters of the semester hours required for graduation

Before the seventh semester begins: at least six courses in the major and at least three-quarters of the semester hours required for graduation

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. in Classics

Before the third semester begins: Latin I-II or Greek I-II, and at least one-quarter of the semester hours required for graduation.
Before the fifth semester begins: Second-Year Latin I-II and Elementary Greek I-II, or Second-Year Greek I-II and Elementary Latin I-II, and at least one-half of the semester hours required for graduation.
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 three-quarters of the semester hours required for graduation.
Before the eighth semester begins: one semester of composition in either Greek or Latin (may be completed during the eighth semester) 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.

B.A. in Greek

Before the third semester begins: Elementary Greek I and II and at least one-quarter of the semester hours required for graduation.
Before the fifth semester begins: Second-Year Greek I and II and at least one-half of the semester hours required for graduation.
Before the seventh semester begins: two or three more courses in the major and at least three-quarters of the semester hours required for graduation.
Before the eighth semester begins: one or 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.

B.A. in Latin

Before the third semester begins: Elementary Latin I-II or Accelerated Elementary Latin, and at least one-quarter of the semester hours required for graduation.
Before the fifth semester begins: Second-Year Latin I-II and at least one-half of the semester hours required for graduation.
Before the seventh semester begins: two or three more courses in the major and at least three-quarters of the semester hours required for graduation.
Before the eighth semester begins: one or 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

For exceptional seniors who attain a 3.50 grade-point average in their first three years of classics courses, two courses are offered in honors reading, one each semester of the senior year, for 3 semester hours of credit each. The readings and discussions are on an ancient author or a field in ancient history or literature chosen by students and the instructor. During the first semester students present an essay every other week; at the end of the second semester they present a long paper, which is read and judged for honors by two members of the department. Requirements may be adapted for honors work in ancient civilization.

Minors

Minors are offered in Greek, Latin, classics, and ancient civilization. A minor in classics requires a minimum of 18 semester hours in classics courses. Minors in Latin, Greek, and ancient civilization require a minimum of 15 semester hours in classics courses. All minors require a grade-point average of at least 2.00. Students may count one relevant advanced course from the classics department offerings in English toward any of the minors. Only 3 semester hours of lower-level course work earned in transfer course work may be used toward a minor. All upper-level course work must be in University of Iowa courses. The undergraduate adviser has a list of relevant courses. Students entering with high school Latin or Greek also should consult the adviser for an appropriate course schedule.

Greek

Second-Year Greek I-II (014:011-012) are considered advanced for the minor, as are all courses numbered 100 and above. A minor may be fulfilled by completion of the intermediate level plus two 100-level courses, one of which may be a relevant course in Greek history, culture, or literature offered by the Department of Classics and taught in English.

Latin

Second-Year Latin I-II (020:016-017) are considered advanced for the minor, as are all courses numbered 100 and above. A minor may be fulfilled by completion of the intermediate level plus two 100-level courses, one of which may be a relevant course in Roman history, culture, or literature offered by the Department of Classics and taught in English.

Classics

Second-Year Greek I-II (014:011-012) and Second-Year Latin I-II (020:016-017) are required for the minor in classics. An additional minimum of 6 semester hours of upper-level courses from the department are required for a total of 18 semester hours. At least one course must be in the Latin or Greek language.

Ancient Civilization

All courses in Greek numbered 014:011 or above and all courses in Latin numbered 020:016 or above are considered advanced for the minor. Appropriate courses in art, religion, history, and philosophy, as selected by the major’s interdepartmental committee also may be counted toward a minor in ancient civilization.

Language for Nonmajors

Students who want to satisfy the College of Liberal Arts General Education Program foreign language requirement by studying Greek should take 014:001-002 Elementary Greek and 014:011-012 Second-Year Greek I-II. Students who want to meet the requirement by studying Latin may elect 020:001-002 Elementary Latin or 020:117 Accelerated Elementary Latin, and 020:016-017 Second-Year Latin I-II. Students may take 020:016 before or after 020:017, but both must be taken to satisfy the General Education Program foreign language requirement.

Graduate Programs

For the general requirements of the Graduate College, including the comprehensive examinations, see the Graduate College section of the Catalog.

Graduate students in classics may not include in their programs more than 6 semester hours of courses numbered 101-160 and 6 semester hours of courses numbered 161-199.

Master of Arts

The department offers the M.A. in Latin, Greek, and classics. Candidates must earn a minimum of 30 semester hours of credit by taking courses numbered 101 and above. Usually, students in the Latin program who have not had Greek are expected to include at least elementary Greek in their program. Students must pass a sight examination in the language(s) studied and an examination on literature and history.

Doctor of Philosophy

Requirements for the Ph.D. include 72 semester hours of course work, including the courses listed below (27 semester hours). Students must take precomprehensive and comprehensive examinations and write a dissertation.

Required Courses

Archaic Greek literature 3 s.h.
Classical and Hellenistic literature 3 s.h.
Republican literature 3 s.h.
Imperial literature 3 s.h.
Advanced Greek composition or equivalent 3 s.h.
Advanced Latin composition or equivalent 3 s.h.
Two graduate-level courses in Greek or Latin linguistics, epigraphy, or ancient art 6 s.h.
Other interdisciplinary courses (with approval of the graduate adviser)

The remaining course work is made up from courses offered in and outside of the department.

Ph.D. Examinations

Precomprehensive exams must be taken in Latin sight reading and Greek sight reading. One sight reading exam must be attempted by the end of
the first year of graduate study. Competence in reading both German and French must be shown either by course work or exam by the close of the second year of study.

Students must file a request for the comprehensive exam at least three weeks before the date of the exam. Candidates must take the second-year exam at the end of their second year. The remaining exams may be taken in any sequence.

Second-year exam on literature and history-four hours, written

Latin literature based on reading list-three hours, written

Greek literature based on reading list-three hours, written

Special field or author (Greek) -four hours, written

Special field or author (Latin-four hours, written

Facilities

Extensive collections of classical texts and periodicals in the Main Library and the Art and History Library facilitate research in the major areas of Greek and Roman civilization. The department has a varied collection of slides on classical subjects and a small library. The classical museum, located in the department, contains a good collection of coins, vases, and facsimiles in bronze from Mycenae, Pompeii, and Herculaneum.

The University is a supporting institution of the American School of Classical Studies at Athens and the American Academy in Rome, thereby making those facilities available to its faculty and students.

The Department of Classics offers students the opportunity to participate in an archaeological dig during the summer. Interested students should call the office in mid-February for information.

Courses

Greek - for Undergraduates

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>014:001</td>
<td>Elementary Greek (4 s.h.)</td>
</tr>
<tr>
<td>014:002</td>
<td>Elementary Greek (4 s.h.)</td>
</tr>
<tr>
<td>014:011</td>
<td>Second-Year Greek I (3 s.h.)</td>
</tr>
<tr>
<td>014:012</td>
<td>Second-Year Greek II (3 s.h.)</td>
</tr>
</tbody>
</table>

Greek-for Undergraduate and Graduate Students

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>014:176</td>
<td>Greek Composition (3 s.h.)</td>
</tr>
<tr>
<td>014:187</td>
<td>Archaic and Classical Periods I (3 s.h.)</td>
</tr>
<tr>
<td>014:188</td>
<td>Archaic and Classical Periods II (3 s.h.)</td>
</tr>
<tr>
<td>014:191</td>
<td>Classical and Hellenistic Periods I (3 s.h.)</td>
</tr>
<tr>
<td>014:190</td>
<td>Classical and Hellenistic Periods II (3 s.h.)</td>
</tr>
<tr>
<td>014:191</td>
<td>Honors Readings (3 s.h.)</td>
</tr>
<tr>
<td>014:192</td>
<td>Honors Readings (3 s.h.)</td>
</tr>
<tr>
<td>014:199</td>
<td>Private Assignments 1-3 s.h.</td>
</tr>
</tbody>
</table>

Greek-for Graduate Students

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>014:202</td>
<td>Advanced Reading</td>
</tr>
<tr>
<td>014:203</td>
<td>History of the Greek Language (3 s.h.)</td>
</tr>
<tr>
<td>014:204</td>
<td>Archaic Greek Literature (3 s.h.)</td>
</tr>
<tr>
<td>014:205</td>
<td>Classical and Hellenistic Literature (3 s.h.)</td>
</tr>
<tr>
<td>014:209</td>
<td>Graduate Reading in Greek: Socrates (3 s.h.)</td>
</tr>
<tr>
<td>014:210</td>
<td>Seminar Problems in Ancient Act (3 s.h.)</td>
</tr>
<tr>
<td>014:220</td>
<td>Greek and Roman Literary Criticism (3 s.h.)</td>
</tr>
<tr>
<td>014:227</td>
<td>Homer (3 s.h.)</td>
</tr>
<tr>
<td>014:251</td>
<td>Greek Tragedy (3 s.h.)</td>
</tr>
</tbody>
</table>

Latin -for Undergraduates

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>020:000</td>
<td>Cooperative Education Internship (0 s.h.)</td>
</tr>
<tr>
<td>020:001</td>
<td>Elementary Latin (4 s.h.)</td>
</tr>
<tr>
<td>020:002</td>
<td>Elementary Latin (4 s.h.)</td>
</tr>
<tr>
<td>020:016</td>
<td>Second-Year Latin I (3 s.h.)</td>
</tr>
<tr>
<td>020:017</td>
<td>Second-Year Latin II (3 s.h.)</td>
</tr>
</tbody>
</table>

Latin -for Undergraduate and Graduate Students

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>020:011</td>
<td>Accelerated Elementary Latin (4 s.h.)</td>
</tr>
<tr>
<td>020:205</td>
<td>Imperial Literature (3 s.h.)</td>
</tr>
<tr>
<td>020:204</td>
<td>Republican Literature (3 s.h.)</td>
</tr>
<tr>
<td>020:203</td>
<td>History of the Latin Language (3 s.h.)</td>
</tr>
<tr>
<td>020:199</td>
<td>Private Assignments 1-3 s.h.</td>
</tr>
</tbody>
</table>

Latin -for Graduate Students

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<tr>
<td>020:202</td>
<td>Advanced Reading</td>
</tr>
<tr>
<td>020:203</td>
<td>History of the Latin Language (3 s.h.)</td>
</tr>
<tr>
<td>020:204</td>
<td>Republican Literature (3 s.h.)</td>
</tr>
<tr>
<td>020:205</td>
<td>Imperial Literature (3 s.h.)</td>
</tr>
<tr>
<td>020:217</td>
<td>Accelerated Elementary Latin Graduate (4 s.h.)</td>
</tr>
<tr>
<td>020:230</td>
<td>Roman Oratory (3 s.h.)</td>
</tr>
<tr>
<td>020:235</td>
<td>Ovid: The Fasti (3 s.h.)</td>
</tr>
</tbody>
</table>
Classics in English

All readings for these courses are in English; no previous knowledge of Greek or Latin is necessary.

014:012 The Classical Views 3 s.h.
Ancient concept of the hero; major classical works, including Homer’s Iliad, Vergil’s Aeneid, Apuleius’ Golden Aphorisms. GE: foreign civilization and culture or humanities. Same as 008:013.

014:014 Hero, God, Mortal in Greek Literature 3 s.h.
Ancient Greek literature and culture as it responded to Homer; may include genre (e.g., epic, tragedy), religion, changing concept of hero, interaction with Mediterranean cultures, myths versus history. GE: foreign civilization and culture or humanities.

014:026 Introduction to Ancient Art 3 s.h.
Art and architecture of Mediterranean civilization from Minoan times to the age of Constantine. Consent of instructor required. Same as 10C:026.

014:030 Greek Civilization 3 s.h.
History, literature, art, architecture, religion, social life ca. 3000 B.C.E. to second century B.C.E. GE: historical perspectives.

014:080 Ancient Science, Medicine, and Technology 3 s.h.
Ancient science, medicine, and technology among the ancient Mesopotamians, Egyptians, Greeks, and Romans; Greek science and medicine, and Roman technology.

014:105 Women in the Ancient World 3 s.h.
Same as 10C:105.

014:107 Ancient Views of Justice 3 s.h.

014:110 Greek Drama in Transition 3 s.h.
Tragedies of Aeschylus, Sophocles, and Euripides and comedies of Aristophanes; their dramatic, historical, and social contexts; ancient and modern production techniques, film adaptations and stage productions. GE: fine arts or humanities. Same as 005:110.

014:119 Classics Motifs in the Modern Cinema 3 s.h.
Portrayal of the ancient classical world in modern films; propagation and persistence of classical themes in the genre.

014:110 Early Greek Art 3 s.h.
Architecture, sculpture, painting, minor arts from Mycenaean to Hellenistic; 1600 B.C. to 30 B.C. Same as 10H:110.

014:111 Classical Greek Art 3 s.h.
Continuation of 014:110. Same as 01H:127.

014:112 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, and psychological studies. GE: humanities. Same as 008:115.

014:114 Greek Vase Painting 3 s.h.
Geometric and figurative vases from ancient Greece, Asia Minor, and Italy. Same as 01H:128.

014:115 Hellenistic Art 3 s.h.
Art, religion, culture of the Greeks, Romans, Egyptians 336-30 B.C. Same as 01H:129.

014:118 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: humanities. Same as 003:126.

014:120 Syncretism in Ancient Religion 3 s.h.
Same as 032:137.

014:130 Oral Tradition and Written Word 3 s.h.
Orality and the written word; how writing developed in early Sumer, spread slowly into early Greece, Egypt, and the Levant, and introduced new techniques for use in commerce, law, poetry, science, philosophy.

014:147 Philosophical Issues 3 s.h.
Same as 026:147.

014:160 Greek and Roman Religious Philosophy 3 s.h.
Greek religious thought from the pre-Socratics through Plato; Aristotle, stoics, and epicureans to the Christian era and nascent humanism.

014:194 Seminar in Ancient Civilization 3 s.h.
Open only to juniors.

014:195 The Archaeology of Ancient Greece 3 s.h.
Archaeology and ethnology of the Greek World, from the end of the Bronze Age to the late Roman Empire; sociocultural processes that influence development and persistence of Greek civilization. Prerequisite: introductory archaeology course or consent of instructor. Same as 113:192.

020:014 Love and Glory: The Literature of Rome 3 s.h.
Major themes and works of ancient Roman literature; works reflecting conflict of personal desire and public self in Rome; GE: foreign civilization and culture or humanities.

020:030 Roman Civilization 3 s.h.

020:050 Word Power: Building English Vocabulary 3 s.h.
Analysis of unfamiliar English words through knowledge of the history and meaning of word parts. Prerequisites: one semester of rhetoric. Same as 08H:050.

020:101 Medical and Technical Terminology 2 s.h.
Memorization of stems, practice on computer terminal; “a formal classes.

020:109 Art and Culture in Ancient Pompeii 3 s.h.
Art and architecture as documents of ancient society and religion in cities destroyed by Vesuvius in A.D. 79. Same as 01H:134.

020:110 Early Roman Art 3 s.h.
Roman architecture, sculpture, painting, mosaics of republican, imperial, late antique periods. Same as 01H:132.

020:111 Etruscan Art 3 s.h.
Artifacts and art from Bronze Age to Roman conquest of Etruria. Same as 01H:130.

020:112 Later Roman Art 3 s.h.
Art and architecture of imperial Rome and provinces, from the Antonines through Constantine. A.D. 250-337. Prerequisite: 020:050 or 01H:026. Same as 01H:133.

020:115 Roman Religion and Society 3 s.h.
Religious beliefs, practices and writings of Romans from eighth century B.C. to second century A.D. GE: humanities. Same as 022:115.

020:116 The Concept of the City: Rome 3 s.h.
Physical and cultural development of Rome from early republic to emperor Constantine and rise of Christianity in fourth century A.D. GE: historical perspectives.

020:194 Roman Archaeology 3 s.h.
Archaeology, ethnology of Roman Civilization from Iron Age to the Augustan period of Augustus; GE: historical perspectives.

020:201 Topics in Comparative Romance Linguistics 3 s.h.
Same as 035:207, 103:262.

COMMUNICATION STUDIES

Chair: Randy Hirokawa
Professors: Leslie Baxter, David Depew, Steve Duck, Bruce E. Gronbeck, Hanno Hardt, Randy Hirokawa, Michael Calvin McGee, Franklin Miller, Leighton Pierce, Douglas M. Trank
Professors emeriti: Samuel L. Becker, Robert Kemp, Richard D. MacCann, Donovan J. Ochs
Associate professors: Barbara Biesecker, Kathleen Farrell, Kristine L. Fitch, Joy Hayes, George Kindleer, John Durham Peters, Eric W. Rothenbuhler
Assistant professors: David Hingstman, Kembrew McLeod, Michael Saenz, Joanna Pfoeger-Tsoulos
Undergraduate degree program: B.A. in Communication Studies
Undergraduate nondegree program: minor in Communication Studies
Graduate degrees: M.A., Ph.D. in Communication Studies
Web site: http://www.uiowa.edu/~commstud

The Department of Communication Studies is concerned with communication as a means of personal expression and development; as the means by which people adjust themselves to their society and their society to themselves; and as an essential process for the operation of any society, especially a highly technological one. It is also concerned with communication as artistic and functional expression and as construction of meaning.

Communication Studies at Iowa has three closely related missions: to offer effective education for a large number of undergraduates, to provide graduate training, and to serve as a national and international leader in research and production in a center of communication specialties. By promoting the study of different media, modes, and uses of communication as social activity, the department aims to advance scholarly understanding and to enhance its students’ lives.

The Department of Communication Studies, long one of the top-ranked departments of its kind in the nation, is a center for the exploration of rhetorical, social, and aesthetic dimensions of symbolic exchange. It has become an active hub for interdisciplinary programs such as the Project on Rhetoric of Inquiry (POROI) and the A. Craig Baird Center for Public Advocacy and Debate. Members of its diverse, multidisciplinary faculty have been mentors to influential scholars and artists in several fields.

Undergraduate Programs

The department offers a B.A. in communication studies, with specializations in communication, media studies, and communication education. First-year students interested in the department should talk with advisers in the Academic Advising Center; sophomores, juniors, and seniors are assigned departmental advisers. Many courses are open only to students who have a cumulative grade-point average of at least 2.50. Courses with no grade-point restriction are indicated in the paragraph preceding the course listings.

To be eligible for admission to the department’s B.A. programs, applicants must complete, by the
end of the semester in which they apply, at least 30 semester hours of approved undergraduate credit; they also must have a cumulative grade-point average of at least 2.50.

**Bachelor of Arts**

Students who seek the Bachelor of Arts in communication studies must earn a minimum of 30 semester hours in the major. Correspondence and transfer study are acceptable as long as the residency requirement is met and the courses are approved by an adviser. A maximum of 15 semester hours of transfer credit may be approved. Those who seek teacher licensure must earn 33 semester hours as described under “Communication Education.”

All students must fulfill the requirements listed under “Core Areas” and must choose one of the specialization areas—communication, media studies, or communication education—and fulfill the requirements for it.

**Core Areas**

All majors must complete at least one course each from any two of the following three areas: interpersonal communication, media studies, and rhetorical studies.

**Interpersonal Communication**

- 36C:060 Communication and Everyday Life 3 s.h.
- or 36C:065 Communication Inquiry 3 s.h.

**Media Studies**

- 36M:025 Media and Society 3 s.h.
- or 36M:045 American Broadcasting 3 s.h.

**Rhetorical Studies**

- 36C:070 Persuasion in Society 3 s.h.
- or 36C:080 Communication and Contemporary Culture 3 s.h.

**Communication**

Students specializing in communication study oral, written, visual, and electronic messages and media and their environments, from theoretical, critical, historical, and social-scientific perspectives and within a liberal arts philosophy. Students also improve their analytical and practical communication skills through criquitic practice. Combined with related work in mass communication, social sciences, expository prose, journalism, and business (especially marketing and administration), this specialization prepares students for careers in business, not-for-profit organizations, the media industries, and government. Others use the specialization as professional preparation for advanced studies in teaching, law, business, and the ministry, and for graduate studies.

To graduate with a specialization in communication, students must complete 30 semester hours of work in the department, including the following.

Two core area courses, one each from two of the three areas 6 s.h.

At least four additional 36C courses, including at least three numbered above 36C:080 12 s.h.

Additional departmental course work approved by an adviser 12 s.h.

The department sponsors an internship program that provides outside work experience and an active intercollegiate forensics program, the A. Craig Baird Debate Forum, located in the International Center. Internships provide opportunities to apply communication knowledge and skills in a variety of settings, such as advertising, public relations, organizational development, politics, personnel, research, and training. In the forensics program, students have the opportunity to work in on-campus debates, with development programs designed to improve speech activities in the state, and as members of competitive intercollegiate debate teams and in individual events. Forensics scholarships are available.

**Media Studies**

The purpose of the media studies curriculum is to provide introduction, some survey knowledge, and opportunities for moderate specialization in the history, aesthetics, practices, and social functions of media in modern societies. Students may focus on selected media, or they may study across the media of radio, film, television, video, popular music, advertising, and digital technologies as purveyors of communication and culture. Related courses are offered by the School of Journalism and Mass Communication and by the Department of Cinema and Comparative Literature.

To graduate with an emphasis in media studies, students must complete 30 semester hours in the department, including the following.

Two core area courses, one from two of the three areas 6 s.h.

36D:035 Introduction to Media Production 4 s.h.

At least three advanced courses numbered above 36M:060 (a list of advanced courses is available from the department) 9 s.h.

Additional departmental course work approved by an adviser 12 s.h.

**Communication Education**

The communication teaching specialization requires a minimum of 33 semester hours of course work, including the following.

Two core area courses, one each from two of the three areas 6 s.h.

Four state-required communication courses, one each in communication teaching methods, directing forensic activities, oral interpretation, and rhetorical studies 12 s.h.

One theatre arts course 3 s.h.

Four departmental electives 12 s.h.

To strengthen both their major and their employment opportunities, students are advised to complete a teaching minor in English, reading, or another related field, and to accumulate a record of achievement in forensics, media studies and film, readers’ theater, and theater activities.

**TEACHING MINOR LICENSURE IN COMMUNICATION STUDIES**

Completion of 23 semester hours of course work in communication and theatre arts is required. The work must be approved by an adviser.

**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 who have signed the four-year graduation agreement should consult the department for details.

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least two courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least six courses in the major and at least three-quarters of the semester hours required for graduation

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

**Honors**

The department encourages outstanding undergraduates to take part in the honors program. To graduate with honors in communication studies, students must maintain a cumulative University of Iowa grade-point average of at least 3.20, join the University Honors Program, and fulfill the following course requirements.

- 036:098 Honors Workshop (seminar offered fall semesters only) 2 s.h.
- 036:099 Honors Thesis (usually taken final semester before graduation) 3 s.h.

In special cases, independent study course work may be substituted for the Honors Workshop, with the honors officer’s permission. Additional course work may be required by the student’s honors adviser.

To begin work toward a degree with honors in communication studies, students must choose a faculty member to supervise their honors project and act as their honors adviser.

Students who enroll in the honors program are eligible to take courses labeled “honors only” in the Schedule of Courses and to add an honors designation to any other departmental course by completing an agreement with the course instructor for special work in that course.

Detailed information on the honors program is available from the communication studies departmental office.
Minor
A minor in communication studies requires 15 semester hours of credit in communication studies, with a grade-point average of at least 2.00 in those courses. Of the 15 semester hours, at least 12 must be in University of Iowa courses numbered 36C:060 and 36M:060 or above. Students must maintain a cumulative grade-point average of at least 2.50 in order to qualify for enrollment in courses taken toward the minor.

Graduate Programs
The department offers a general M.A. in communication studies and an M.A. with specializations in communication education, interpersonal and small group communication, media studies, and rhetorical studies. The Ph.D. is available with specializations in interpersonal and small group communication, media studies, and rhetorical studies.

Requirements for the M.A.
The Master of Arts degree requires a minimum of 30 semester hours, including the following:
- 036:300 Introduction to Research 1 s.h.
At least two courses numbered 200 and above (some of the department’s masters programs may require more)

M.A. candidates must write a research thesis or, for the nonthesis degree, a graduate seminar paper involving significant original research. They also must successfully complete a six-hour written examination, whose scope is determined by the candidate’s specialist program and graduate committee.

Students in the master’s program must maintain a cumulative grade-point average of at least 3.00 for all courses in the plan of study.

Applicants for summer session or fall semester whose application materials are received in the department by February 1 have the best chance to be admitted and receive financial aid. Admission decisions are based on consideration of the applicant’s undergraduate achievement, letters of reference, Graduate Record Examination (GRE) General Test results, a statement of purpose, and samples of scholarly work.

Communication Education
The M.A. in Communication Education is designed to prepare teachers and supervisors of speech communication for secondary and postsecondary positions. It requires a minimum of 30 semester hours of course work approved by the department.

Interpersonal and Small Group Communication
The graduate interpersonal and small group communication program at Iowa is centered on theory complemented by strength in both quantitative and qualitative research methods. Its focus is on scholarly issues that arise from face-to-face, everyday communication practices in interpersonal, small-group, and organizational contexts. It emphasizes personal relationship processes, decision making and problem solving, persuasion, and culture.

The goal of this program is to produce research 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. Because no two students have exactly the same interests, no two students pursue quite the same degree program. Advisers and committee members work closely with individual students to pull together course work from communication studies and other University departments, along with teaching and research experiences that will position each student to be well-qualified for the kind of employment he or she intends to seek after graduation.

Media Studies
The graduate program in media studies focuses on the interplay of institutions, texts, and audiences of mediated communication systems. Its central aim is to examine modern media-radio, television, advertising, music, 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.

Faculty teaching and research interests range from the history of media theory to popular music and media industries, television criticism, the cultural history of radio, advertising history, and the role of media in constructing global, national, and local communities.

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.

The graduate program in media studies leads to the M.A. or Ph.D. degree.

Rhetorical Studies
The program in rhetorical studies leads either to the M.A. or the Ph.D. It is built on foundation courses in the history of rhetorical practices, the criticism of rhetorical discourse, and theoretical relationships between rhetorical activities and other dimensions of society. Some foundation courses in history and criticism are offered on the 100 level and are listed under “Communication” in this section of the catalog beginning at the 200 level. Foundation courses in rhetorical theory, designed to survey bodies of academic writing about rhetoric, are offered at the 300 level. Advanced courses in special areas of rhetorical theory are offered at the 400 level. Proseminars (500 level) and seminars (600 level) allow students to develop expertise in various historical, critical, and theoretical approaches to rhetoric and communication.

Master of Arts
The M.A. program in rhetorical studies stresses basic knowledge of rhetorical history, criticism, and theory, in communication studies and in other disciplines across the University. The degree is intended to build a strong foundation for teaching in high schools and junior colleges or for proceeding to the doctorate. Efforts are made to tailor individual programs of study to students’ needs and career goals.

Minimum requirements for the M.A. in rhetorical studies include the following:

- 036:300 Introduction to Research 1 s.h.
- Courses in rhetorical studies, including a seminar (any course numbered 500 or above) 15 s.h.
- Courses in other communication studies program areas or related departments 6 s.h.

Students must successfully complete a comprehensive examination across three areas of study that they and their committees have chosen.

Doctor of Philosophy
The program leading to the Ph.D. in rhetorical studies is designed to give candidates a mature grasp of the various specialties and perspectives embraced in this division and to develop research competence essential to a life of productive scholarship.

Work in related departments-political science, history, sociology, English, cinema and comparative literature, anthropology, American studies, and journalism-complements rhetorical studies course offerings. Faculty from the departments of Rhetoric, Political Science, and American Studies cross-reference their courses on rhetorical topics in this program.
The Project on Rhetoric of Inquiry (POROI) offers a certificate program, allowing doctoral students to specialize in the study of how academic fields use argumentative and linguistic strategies to generate and control knowledge. Many doctoral students also do extensive work in media studies, film studies, or interpersonal and small group communication to improve their range of teaching opportunities and their research skills.

Facilities

The Samuel L. Becker Communication Studies Building is designed specifically to meet both research and technical needs. Included are two television studios, a complete video postproduction facility, a film sound stage, a scene shop, areas for animation and graphics production, a radio studio, and an advanced 24-track audio studio that serves the needs of courses throughout the department. A large pool of equipment is available to support student work in both studio and location settings. Students and scholars also have access to a video and film library, individual viewing areas, a lab complex for experimental and survey research, and computers for research efforts. The Samuel L. Becker Communication Studies Building is one of the best facilities of its kind in higher education.

Courses

Courses numbered below 200 are intended primarily for undergraduates; those numbered above 200 are for graduate students. Graduate students also may take 100-level courses for credit, with approval of their committee.

To register for most courses numbered below 200, students must have a cumulative grade-point average of at least 2.50. The following courses do not carry this requirement:

036:065 Communication and Conflict
3 s.h.
Implications of communication theories, conflict theories; applications to everyday life. Prerequisite: 36C:060 or 36C:065.

036:087 Gender Roles and Communication
3 s.h.
Gender roles and communication processes; function of communication in gender role development. Prerequisite: 36C:060 or 36C:065. Same as 131:087.

036:089 Rhetoric, Technology, and Science
3 s.h.
Role of technology in contemporary culture; representation of technology in film and advertising, technology’s role in the physical and biological sciences, cultural implications of the information revolution.

036:085 Communication and Conflict
3 s.h.
Implications of communication theories, conflict theories; applications to everyday life. Prerequisite: 36C:060 or 36C:065.

036:07 Gender Roles and Communication
3 s.h.
Gender roles and communication processes; function of communication in gender role development. Prerequisite: 36C:060 or 36C:065. Same as 131:087.

036:09 Topics in Communication
3 s.h.
Topics vary.

036:093 Intercultural Communication
3 s.h.
Relationships among culture-based assumptions, values, thought patterns, communication behavior, theory and practice. Prerequisite: 36C:060 or 36C:065. Same as 042:093.

036:125 Theories of Persuasion
3 s.h.
Focus on persuasion processes. Prerequisite: 36C:060 or 36C:065.

036:130 Introduction to Rhetorical Criticism
3 s.h.
Rhetorical discussions, situations.

036:131 Classical Rhetoric and Greek Culture
3 s.h.
GE: humanities. Same as 010:131.

036:134 Contemporary Public Communication
3 s.h.
American public communication since World War II.

036:135 American Public Communication
3 s.h.
History of American public communication from various periods.

036:136 Organizational Communication
3 s.h.
Communication in organizations; information flow and processing communication networks, role relationships, decision making in formal organizations. Prerequisite: 36C:060 or 36C:065.

036:137 Rhetoric and Past Public Controversy
3 s.h.
Rhetoric’s role in public controversy, in particular time periods. GE: historical perspectives. Same as 010:141.

036:139 Studies in Argument
3 s.h.
Advanced topics in argumentation within specialized personal, public, and technical forums; argument strategies, modes of decision making in social disputes.

036:140 Communication and Relationships
3 s.h.
Communication issues that come into play as relationships are established, developed, maintained, dissolved. Prerequisite: 36C:060 or 36C:065.

036:151 Foundations of Rhetorical Theory and Criticism
3 s.h.
Rhetorical theory and criticism as discourses produced within a sociopolitical environment. Same as 010:152.

036:152 Twentieth-Century Rhetorical Theory and Criticism
3 s.h.
Rhetorical theory and criticism as discourses produced within a sociopolitical environment. Same as 010:152.

036:153 Issues in Rhetoric and Culture
3 s.h.
Case studies of relationships between public discourse, particular cultural contexts. Same as 008:181, 010:160.

036:159 Health Communication Research Practicum
3 s.h.
Theory and design of qualitative research in the medical setting; theoretical aspects of clinic-based research, execution of a qualitative medical study involving patient narratives and self-efficacy. Grade-point average of 2.50 or higher and consent of instructor required. Prerequisite: 36C:065. Same as 078:120.

036:161 Contemporary Controversy
3 s.h.
The role of symbolic action (linguistic and nonlinguistic) in contemporary democratic life. Same as 010:161.

036:162 Electric Rhetorics
3 s.h.
Theoretical inquiry into social, ethical, political issues of cyber-interactions; workshop for rhetorical analysis and production of electronic texts, such as web-based hypertexts, immersive virtual worlds. Same as 08N:162, 010:162.

For Undergraduates

General

036:000 Cooperative Education Internship
0 s.h.

036:029 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). Open only to first- and second-semester students.

036:098 Honors Workshop
2 s.h.
Preparation for honors thesis seminar; coordination of student’s individual thesis work, introduction to issues in research design, methods, problem-solving, research standing and grade-point average of 3.20 or higher required.

036:099 Honors Thesis
3 s.h.
Individual research, writing, or creative production under supervision of a faculty member. Honors standing and grade-point average of 3.20 or higher required. Prerequisite: 036:098 or equivalent.

036:108 Interpretation of Literature
3 s.h.
Principles, practice of reading literary prose and poetry to audiences; analysis, interpretation, performance, evaluation. Same as 07E:108.
36D:150 Media Production Workshop 1.4 s.h.
Individual film or television project; common problems, screenings of work in progress, criticism. May be repeated. Prerequisite: 36D:098 or 36D:124. Same as 048:150.

36F:001 Introduction to Film Analysis 3 s.h.
Methods; emphasis on classic narrative works from American and European traditions; short-by-short breakdown, narrative segmentation, auteurs, genre. Same as 048:001.

36F:002 Survey of Film 3 s.h.
Film history, theory, criticism; emphasis on technology, technique, cultural function; screenings of narrative, documentary, experimental films. GE: humanities. Same as 048:002.

36F:010 Contemporary Cinema 3 s.h.
Current American and foreign cinema; types, styles, directors; relationships between movies and film industries, cultural contexts; the movie-going experience. Same as 048:010.

36F:011 Films and Screenplays 3 s.h.
Structure of films in a variety of formats, from canonical films examined with the aid of their scripts to promising screenplays that never reached the screen or did so in altered form. Same as 008:011, 048:011.

36F:012 Film and Society 3 s.h.
Social relationships between motion pictures and American culture, both historical and contemporary; censorship, treatment of social issues; representation of minorities in cinema, roles of minority groups in filmmaking. Same as 048:012.

36F:020 U.S. Film 3 s.h.
Examination of characteristic films across several decades as way of understanding the film industry and its social and artistic effects. Same as 048:020.

36F:021 European Film 3 s.h.
Survey of German Expressionism. Soviet constructivism. Italian Neorealism, the new German cinema; history of cinematic art in cultural, social, and political contexts. GE: humanities. Same as 048:021.

361:02 World Film 3 s.h.
Introduction to filmmaking and film culture in several countries or regions outside the United States and Europe; films from Africa, Asia, and Latin America in historical context. Same as 048:022.

36R03 Documentary Film 3 s.h.
Historical survey of nonfiction film from Flaherty to cinema verite; impact of television on film. Same as 048:023.

36F:070 Introduction to Film Theory 3 s.h.
Language, art form, social expression; emphasis on major historical positions in classical theory, recent developments. Same as 048:070.

36F:051 Film Criticism 3 s.h.
Purposes, presuppositions, styles of film criticism, from journalistic to scholarly; theoretical positions related to concerns of film critics. Same as 048:051.

36F:052 Gender and Film 3 s.h.
American films from 1920s to 1980s, with emphasis on images of sexes, how images relate to society; theories of cinema and sexual differences. Same as 048:052.

36R037 Styles and Genres 3 s.h.
Film types (gangster, science fiction, Italian comedy, etc.); validity of treating films in such groups. May be repeated. Same as 048:037.

36F:104 Topics In European Film 3 s.h.
Specific issues or periods in European film. May be repeated. Same as 048:104.

36F:105 French Cinema 3 s.h.
History of film; French culture, film analysis, relationship of filmmakers to politics, religion, and so forth. GE: foreign civilization and culture. Same as 009:147, 048:105.

36R106 Topics in Asian Cinema 3 s.h.
Same as 008:127, 039:145, 048:106.

36:107 Latin America Cinema 3 s.h.
Political, aesthetic aspects; films, filmmakers of key countries, cultural situations from which their films arise. Recommended: knowledge of Spanish. Same as 055:145, 048:104.

36F:111 Cinema and Culture 3 s.h.
Interplay of cinema with other aspects of important cultural periods or movements, (e.g., those of Weimar, Germany and France between the wars, Depression America); emphasis on living role of cinema in history. Same as 048:111.

36F:112 Prosemaker in Cinema and Culture 3 s.h.
institute for Cinema and Culture symposium topic. Same as 048:112.

36F:120 Issues in Film Theory 3 s.h.
A theorist, approach, or problem in film. Recommended: knowledge of classical film theory. Same as 048:120.

36F:121 Representation and Social Divisions 3 s.h.
Importance of role of film in relation to groups identified by gender, race, class, ethnicity. Same as 048:114.

36F:131 Film and Art Movements 3 s.h.
Relationship between cinema, various art movements. Same as 048:176.

36F:160 Styles and Genres 3 s.h.
Advanced study of film types (gangster, science fiction, Italian comedy, etc.); validity of treating films in such groups. Same as 048:175.

36F:171 Topics in Film and Popular Culture 3 s.h.
Same as 008:171, 048:174.

36F:172 Narrative and The Cinema 3 s.h.
Narrative theory, application to specific body of films, related works in another medium: novel, theater, a plastic art, a performing art. Same as 008:172, 048:172.

36F:191 Topics in Latin American Cinema 3 s.h.
Same as 008:191, 048:178.

For Graduate Students
Graduate students also may take 100-level courses for credit, with approval of their committee.

General
036:249 Independent Study arr.

036:300 Introduction to Research 1 s.h.
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. Same as 030:350 Research Practicum arr.

036:385 Master’s Thesis arr.


Imperonal and Small Group Communication
Graduate students also may register at the 100-level for credit, with approval of their committee.

36G:241 Advanced Group Communication 3 s.h.
Theories and research on the nature and function of symbolic behavior in face-to-face group settings.

36G:242 Advanced Interpersonal Communication 3 s.h.
Interpretation of the bases of informal social interaction, using theory, research, conceptual analysis.

36G:312 Group Communication Theory and Research 3 s.h.
Major concepts in small group communication: nature, function of communication processes in small group settings; theoretical framework for synthesis. Critical evaluation of group communication research.

36G:323 Research Methods in Communication 3 s.h.
Primary methods for conducting research on interpersonal and group communication, including quantitative and qualitative methods.

36G:324 Communication Theory 3 s.h.
Basic issues in the philosophy of social science, research and theory.

36G:327 Persuasion Theory and Research 3 s.h.
Traditional social scientific approaches to research and theory; development of a cultural perspective on persuasion.

36G:328 Relational Communication Theory and Research 3 s.h.
Communication in initiation, development, maintenance, breakdown, and repair of social and personal relationships.

36G:329 Ethnography of Communication 3 s.h.
Research and theory on face-to-face communication, from ethnography of communication perspective.

36G:330 Family Communication 3 s.h.
Theory and research on communication among and between family members (parents, children, marital partners, siblings); quantitative and qualitative research.

36G:623 Seminar: Ethnographic Field Methods 3 s.h.
Methods used by communication ethnographers, including participant observation, field interviewing.

36G:630 Seminar: Relational Communication Research 3 s.h.
Topics vary.


36G:67 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.

36G:640 Seminar: Advanced Topics in Persuasion 3 s.h.
Field studies of persuasive genres, trajectories, processes.

36G:641 Seminar: Culture and Communication 3 s.h.
Topics in cultural codes of communication.

Media Studies
36M:211 Approaches to Culture 3 s.h.

36M:211 Media Criticism 3 s.h.
Focus on television, video.

36M:211 Theories of Mass Communication 3 s.h.
Major concepts, theories, schools of thought in media studies, mass communication.

36M:240 Women and Television in American Culture 3 s.h.
Same as 045:240, 111:240.

36M:36 Media Industry Systems 3 s.h.
Structure of mass communication, popular culture systems; economics, industrial organization, technology, institutionalization.

36M:36 Media and Social Change 3 s.h.

36M:38 Critical Approaches to Mass Communication 3 s.h.

36M:39 Media and Modernity 3 s.h.
Cultural, social, existential consequences of 19th and 20th-century media.
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36M:349 Topics in Mass Communication Scholarship 1-3 s.h.
Theory and research on problems in mass communication.

36M:350 Communication and Community 3 s.h.
How they make each other possible, limit each other; how changing communication technologies affect community, how changing community structures affect communication.

36M:351 Rise and Fall of the American TV Networks 3 s.h.
Conditions supporting American television’s 30-year domination by a commercial broadcast network oligopoly; the oligopoly’s decline, the relationship between such institutional changes and television’s cultural roles.

36M:360 Studies in Popular Culture 3 s.h.
Popular culture in relationship to folklore, social structure, economic development, and formation of mass-mediated cultures; materialism, forms of resistance, popular historical memory.

36M:365 Ritual and Communication 3 s.h.
Ritual in interpersonal, organizational, and political settings as well as mediated ritual; survey of classical and recent literature; opportunities for student research.

36M:366 The Public Sphere 3 s.h.

36M:370 Nationalism as a Communication Process 3 s.h.
Nation building and construction of national identity as a problem in communication history and theory; the nation as a community constructed through discourse, role of the state and other social forces in creating and deploying nationalist discourse.

36M:623 Seminar: Mass Communication 1-4 s.h.

36M:627 Seminar: Media Theory 3 s.h.

Film Studies

36B:219 Studies in Film Production 2 s.h.

36B:250 Writing about Cinema 1-3 s.h.
Same as 048:250.

36F:263 Advanced Film Theory 3 s.h.
Same as 048:263.

36F:265 Advanced Film History 3 s.h.
Same as 048:265.

36F:276 Narrative Modes 3 s.h.
Same as 048:276.

36F:305 Studies in Sound and Image 3 s.h.
Same as 048:305.

36F:610 Seminar: Film Aesthetics and Criticism 1-4 s.h.
Same as 048:610.

Production Studies

36D:325 Master of Fine Arts Thesis 2-6 s.h.

36D:640 Colloquium in Film and Video Production 1-3 s.h.
Same as 048:640.

Rhetorical Studies

36B:200 Introduction to Rhetorics of Inquiry 2-4 s.h.
Practice in invention and arrangement of academic prose through peer criticism; exemplary works, especially at and across disciplinary boundaries. Same as 160:200.

36B:230 Rhetorical Criticism 3 s.h.
Approaches to rhetorical analysis of communicative artifacts, acts, events; rhetorical-critical essay writing. Same as 010:230.

36B:231 Greek and Roman Public Address 2-4 s.h.
Public oral and written communication from fifth century B.C. to third century A.D.; Sophists, Attic orators, Cicero, early church fathers.

36B:233 History of English Liberalism 2-4 s.h.
Development of liberalism as a practical political ideology, from reign of Elizabeth I to Act of Union, 1559-1701.

36B:235 American Public Address: Colonial America Through Reconstruction 2-4 s.h.
Discourse in legislatures, law courts, public gatherings, pamphlets, newspapers.

36B:236 American Public Address: Gilded Ages Through Vietnam 2-4 s.h.
Discourse in legislatures, law courts, public gatherings, pamphlets, newspapers.

36B:301 Classical Rhetoric 2-4 s.h.
Discourse in the ancient world. Same as 008:267.

36B:302 Modern Rhetoric 2-4 s.h.
Same as 008:268.

36B:303 Rhetoric and Philosophy 2-4 s.h.
Contemporary philosophical approaches to the study of rhetoric.

36B:304 Rhetoric and Social Theory 2-4 s.h.
Discourse theories on social consequences of signification, representation, symbolic action; emphasis on rhetoric, social theory.

36B:305 Rhetoric and Argument Theory 2-4 s.h.
Approaches to study of argumentation, key issues at dispute in contemporary conceptualizations of argument.

36B:306 Philosophies and Methods of Historical Research 2-4 s.h.
Problems, methods of researching original materials; work in archives, textual analysis, document citation.

36B:307 Rhetorics of Technology and Technoscience 2-4 s.h.
Survey of rhetorical sites and situations involving technology; rhetorical criticism of technological and technoscientific discourses; evaluation and construction of theories about technological discourses and practices.

36B:3340 Current Issues in Rhetoric 3 s.h.
Same as 010:340.

36B:400 Reading Group 1-2 s.h.
Analysis and discussion of important texts in rhetorical theory and criticism. May be repeated to total of 4 s.h.

36B:403 Studies in Language Theory 2-4 s.h.
Semiotics, speech acts, philosophy of language; emphasis on their relationship to rhetoric. Same as 008:306.

36R:404 Ideology and Hegemony 2-4 s.h.
Marxist, post-Marxist theories of relationship between communication, social control.

36B:405 Communication and Dramaturgy 1-4 s.h.
Theories of their utility in accounting for patterns of human communication.

36B:406 Studies in Political Communication 2-4 s.h.
Political communication theories: their utility in e-voting and other operations of political discourse.

36B:501 Proseminar: Rhetoric and Culture in Antiquity 2-4 s.h.
Rhetorical practices in the classical world.

36B:505 Seminar in Comparative Disciplinary Rhetorics 2-4 s.h.
Conceptual and conventional differences between discourses in various fields of inquiry; role of rhetoric in establishing conditions and criteria of successful disciplinary argument. Same as 165:505.

36B:506 Seminar: 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.

36B:500 Seminar in Rhetorical Theory 1-4 s.h.
Same as 010:600.

36B:601 Seminar: Public Address 1-4 s.h.
History, criticism of discourse addressed to the public; periods, approaches.

36B:602 Seminar: History of Rhetorical Theory 1-4 s.h.

36B:603 Seminar: Argument 2-4 s.h.
Philosophies of argument, ethics, logic, rhetorics, epistemologies.

36B:604 Seminar: Contemporary Rhetorical Theory 2-4 s.h.
Perspectives, theorist, and/or theories dominating contemporary conceptual thought. Same as OgN:404, 010:604.

36R:605 Seminar: Communication, Culture, and the Popular Arts 2-4 s.h.
Lixories, forms, genres of popular arts tests.

36B:3607 Seminar: Rhetoric and Culture 1-4 s.h.
Cultural theories, their utility in accounting for communication practices.

COMPUTER SCIENCE

Chair: Steven Bruell
Professors: Donald Alton, Kendall Atkinson, Robert I. Baron, Steven Bruell, Arthur Fleck, Sukumar Ghosh, Joseph Kearney, Gregg Oden, Teodor Rus, Hantao Zhang
Professor emeritus: Donald Epley
Associate professors: Maria Piaia Bonacina, James F. Cremer, David Eichmann, Ted Herman, Douglas Jones, Albert0 Segre
Adjunct associate professor: William Decker
Assistant professors: Jarkko Kari, Suelly Oliveira, Cesare Tinelli, Kasturi Varadarajan
Undergraduate degrees: B.A., B.S. in Computer Science
Undergraduate nondegree program: minor in Computer Science
Graduate degrees: M.C.S., M.S., Ph.D. in Computer Science
Web site: http://www.cs.uiowa.edu

Undergraduate Programs

Computers have changed the world and will be one of the dominant forces in the future. Students need to be well-versed in today’s ideas and proficient with technology and at the same time be broadly prepared to confront tomorrow’s challenges.

Undergraduates majoring in computer science develop competence in programming principles and methodologies, problem-solving techniques, mathematics, and computer systems.

The department offers both Bachelor of Arts and Bachelor of Science degrees. Of the two, the B.S. program provides more intensive concentration in computer science and greater emphasis in science and mathematics. Students interested in pursuing graduate work in computer science should seek the B.S. degree. The B.A. program requires fewer courses in computer science and mathematics, allowing for a wider choice of electives.

Majors should consult the department’s Computer Science Undergraduate Handbook, available on the department’s World Wide Web site. The handbook details department policies, suggests possible elective areas, and discusses the Cooperative Education Program and student groups, such as the University’s chapter of the Association for Computing Machinery.

All students begin with the following four core courses.

22C:016 Computer Science I 4 s.h.
22C:020 Computer Science II 4 s.h.
22C:030 Computer Science III 3 s.h.

One of these:
22M:021 Calculus and Modeling I 4 s.h.
22M:025 Calculus I 4 s.h.
22M:035 Engineering Calculus I 4 s.h.
22M:045 Accelerated Calculus with Applications I 4 s.h.

Students may declare a major in computer science and be admitted to the department’s
B.A. program at any time on or after admission to the University.

Students may apply for admission to the B.S. program after completing the four core courses and achieving:

- a grade-point average of at least 2.46 in the core courses, and a grade no lower than C- in each; and
- an overall grade-point average of at least 2.00.

Transfer students who have taken a course approved as equivalent to one of the computer science courses are exempt from that course, provided the transfer grade is at least a B-. Such transfer grades are used in computing the computer science grade-point average.

Application to the B.S. program is made at the department office.

After admission to the major, students need to maintain a grade-point average of 2.00 or higher in required courses (see “Bachelor of Arts” and “Bachelor of Science”) in order to receive the B.A. or B.S. in computer science. All computer science students are advised at the Academic Advising Center until they have completed 22C:020 with a grade of D- or higher, or until they have earned 90 semester hours. Students who are being advised at the advising center also may avail themselves of walk-in/call-in hours offered by computer science faculty.

Advanced Placement

The Computer Science Advanced Placement Program test can be used to gain credit for elective semester hours. See the Computer Science Undergraduate Handbook for more details.

Bachelor of Arts

All students must complete the General Education Program as stated in the College of Liberal Arts section of the Catalog. Courses that complete the General Education Program natural sciences component, if chosen carefully, also may satisfy the departmental natural science sequence requirement as described below.

Students complete all department requirements for the B.A. In addition, they complete the following three requirements.

One of these:

- 22C:036 (22M:072) Elementary Numerical Analysis
- 22S:120 Probability and Statistics
- 22S:039 Probability and Statistics for the Engineering and Physical Sciences

Another probability and statistics course with a calculus prerequisite, as approved by the computer science adviser (if 22C:036/22M:072 is used to fulfill this requirement, it may not be used as an advanced course)

A natural science sequence acceptable toward a major in that science (approved sequences are listed under “Natural Science Sequences,” below) Two advanced courses selected from the following list

ADVANCED COURSES

- 22C:036 (22M:072) Elementary Numerical Analysis 3 s.h.
- 22C:096 Tonics in Computer Science (with adviser’s approval) arr.
- 22C:099 Honors in Computer Science (may be counted only once as an advanced course) arr.
- 22C:116 Advanced Operating Systems 3 s.h.
- 22C:122 High Performance Computer Architecture 3 s.h.
- 22C:123 Programming Language Foundations 3 s.h.
- 22C:125 Data: Abstractions, Types, and Structures 3 s.h.
- 22C:127 Introduction to Compiler Construction 3 s.h.
- 22C:132 Parallel Programming 3 s.h.
- 22C:133 Genetic Algorithms 3 s.h.
- 22C:135 Introduction to Computation Theory 3 s.h.
- 22C:144 Database Management Systems 3 s.h.
- 22C:145 Artificial Intelligence 3 s.h.
- 22C:151 Computer Graphics 3 s.h.
- 22C:153 Design and Analysis of Algorithms 3 s.h.
- 22C:167 Theory of Graphs 3 s.h.
- 22C:170 Numerical Analysis: Nonlinear Equations and Approximation Theory 3 s.h.
- 22C:171 Numerical Analysis: Differential Equations and Linear Algebra 4 s.h.

Bachelor of Science

All students must complete the General Education Program as stated in the College of Liberal Arts section of the Catalog. Courses that complete the General Education Program natural sciences component, if chosen carefully, also may satisfy the departmental natural science sequence requirement as described below.

Students complete all department requirements for the B.A. In addition, they complete the following three requirements.

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- 22S:039 Probability and Statistics for the Engineering and Physical Sciences

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- 22C:133 Genetic Algorithms 3 s.h.
- 22C:135 Introduction to Computation Theory 3 s.h.
- 22C:144 Database Management Systems 3 s.h.
- 22C:145 Artificial Intelligence 3 s.h.
- 22C:151 Computer Graphics 3 s.h.
- 22C:153 Design and Analysis of Algorithms 3 s.h.
- 22C:167 Theory of Graphs 3 s.h.
- 22C:170 Numerical Analysis: Nonlinear Equations and Approximation Theory 3 s.h.
- 22C:171 Numerical Analysis: Differential Equations and Linear Algebra 4 s.h.

Algebra

- 22C:174 Optimization Techniques 3 s.h.
- 22C:177 Parallel and High Performance Algorithms in Scientific Computing 3 s.h.
- 22C:178 Computer Communications Engineering 3 s.h.
- 22C:180 Fundamentals of Software Engineering 3 s.h.
- 22C:181 Formal Methods in Software Engineering 3 s.h.
- 22C:182 Software Engineering Languages and Tools 3 s.h.
- 22C:183 Software Engineering Project 3 s.h.
- 22C:189 Software Engineering Project Management 1-3 s.h.

The courses cannot be taken pass/nonpass. Students with certain special elective programs may petition for additional courses to be accepted for this requirement.

NATURAL SCIENCE SEQUENCES

For the B.S., students take two or more courses in a sequence required of majors in a chosen area of natural science. The first course must be a prerequisite or corequisite to the second. This study is intended to enhance the student’s perspective by providing a deeper understanding of the scientific method. It is typical, but not required, that these courses be taken in the same science department. This cognate sequence must total at least 7 semester hours. Students often choose courses that also will complete the General Education Program natural sciences component. Some possible choices are listed below; the computer science adviser 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

- 029:061 General Astronomy (lab) 4 s.h.
- 029:062 General Astronomy (lab) 4 s.h.

Biology/Chemistry

- 002:010 Principles of Biology I (lab) 4 s.h.
- 004:013 Principles of Chemistry I 3 s.h.

Botany

- 002:001 Introduction to Botany (lab) 4 s.h.
- 002:100 Plant Diversity and Evolution (not approved for General Education) 4 s.h.

Chemistry

- 004:013 Principles of Chemistry I 3 s.h.
- 004:014 Principles of Chemistry II 3 s.h.
- 004:016 Principles of Chemistry Lab (lab) 2 s.h.
Physics

One of these sequences:
029:011-012 College Physics (this option not encouraged) 8 s.h.
029:017-018 Introductory Physics I-II (lab) 8 s.h.
029:027-028 Physics I-II 8 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: math through calculus I, two major programming courses, and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: math through calculus II and linear algebra, two more courses in the major, and at least one-half of the semester hours required for graduation. Note: calculus II is not a prerequisite to linear algebra.

Before the seventh semester begins: at least two more courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: at least one more course in the major

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

Bachelor of Science

These checkpoints do not include the required natural science sequence, in which students usually enroll as they complete the General Education Program natural science component.

Before the third semester begins: math through calculus I, two major programming courses, and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: math through calculus II and linear algebra, two more courses in the major, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least three more courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: at least 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

Any University of Iowa student with a cumulative grade-point average of 3.20 or higher may join the University Honors Program; interested students should contact the honors program office in the Shambaugh House Honors Center.

To graduate with honors in computer science, students must complete 4.6 semester hours of 22C:099 Honors in Computer Science and submit an acceptable honors thesis. (The course 22C:099 can count as one but not both of the two advanced courses for the B.S.) To take 22C:099, students obtain the consent of a computer science faculty member. The faculty member must know the nature of the intended project for the honors thesis and a plan or timetable for the work. Students are responsible for finding a faculty member willing to supervise their honors project. See the Computer Science Undergraduate Handbook for details.

Minor

The minor in computer science requires a minimum of 16 semester hours of course work, at least 12 of which must be taken from University of Iowa advanced courses, subject to the following constraints.

Students cannot count 22C:001, 22C:002, or 22C:013 toward the minor.

The minor must include 22C:016, 22C:020, and 22C:030. These courses are all advanced for the minor.

The minor may, but is not required to, include one programming language-specific course. Such courses are not considered advanced.

All courses except 22C:009, 22C:010, 22C:012, 22C:109, 22C:110, 22C:112, 22C:113, 22C:114, and 22C:115 are considered advanced for the minor. In particular, 22C:005 is considered advanced.

No course accepted toward the minor may be taken pass/nonpass. Students must have a grade-point average of at least 2.00 on all work attempted in the minor.

Students in electrical and computer engineering should consult the computer science department’s undergraduate director before beginning the minor. The undergraduate director must approve a set of courses for each electrical and computer engineering student and notifies graduation analysis.

Transfer students may apply a maximum of 4 semester hours of transfer course work toward the minor. The transfer course should involve at least 3 semester hours of credit and should be based on Pascal, C, C++, or Java in order to be approved as equivalent to the 22C:016 requirement.

Students apply for a minor in computer science when they apply for a degree.

Graduate Programs

The department offers three graduate degree programs: a Master of Computer Science (M.C.S.) without thesis; a Master of Science (M.S.) with thesis; and a Doctor of Philosophy (Ph.D.) Students are advised to decide early in their academic careers whether they will seek an M.C.S., an M.S., or a Ph.D.; degree requirements for the three programs differ significantly.

Students working toward a Ph.D. may opt to pursue an M.S. degree while working toward their doctorate. Students who wish to pursue a Ph.D. in computer science at Iowa should apply for direct or early admission to the Ph.D. program.

A special subtrack in software engineering is available in both the Ph.D. and the M.S.

Current and prospective graduate students should consult the Department of Computer Science Graduate Handbook available from the departmental office. The handbook provides detailed information on specific degree requirements (e.g., for master’s projects and theses; for Ph.D. qualifying exams, dissertations, and final oral exams; minimum grades and grade-point-average requirements for certain courses in the plan of study; and residency). It also states policies regarding aspects of graduate study (e.g., probation and dismissal).

General information about the computer science department and its faculty is also available on the department’s World Wide Web site.

Master of Computer Science

The M.C.S. requires a minimum of 30 semester hours. Students must complete at least 24 semester hours through enrollment at The University of Iowa, and 8 of those while in residence at the University.

The Department of Computer Science Graduate Handbook provides detailed information about M.C.S. degree requirements and graduate study policies.

The program’s requirements are as follows.

COMMON COURSES

All students must complete these five courses.
22C:116 Advanced Operating Systems 3 s.h.
22C:122 High Performance Computer Architecture 3 s.h.
22C:123 Programming Language Foundations 3 s.h.
22C:135 Introduction to Computation Theory 3 s.h.
22C:153 Design and Analysis of Algorithms 3 s.h.

CONCENTRATION AREAS

Students must complete three courses within one of the following concentration areas (total of 9 semester hours). Students who choose courses from the systems and networks or programming languages concentration areas must complete two courses from the chosen area (total of 6 semester hours).

Artificial Intelligence

22C:145 Artificial Intelligence 3 s.h.
22C:245 Advanced Artificial Intelligence 3 s.h.
The Computer Science Department and the Department of Electrical and Computer Engineering offer a special subtrack in software engineering for the M.S. degree in computer science. Completion of the subtrack is noted on the student’s degree and transcript. Students who choose the subtrack must complete the five common courses for the M.C.S. as well as the following subtrack specialty courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>22C:180F</td>
<td>Fundamentals of Software Engineering</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>22C:181F</td>
<td>Formal Methods in Software Engineering</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>22C:182F</td>
<td>Software Engineering Project Management</td>
<td>1-3 s.h.</td>
</tr>
</tbody>
</table>

The exam may be written, oral, or both, at the department’s discretion. The final examination does not duplicate course examinations. The student’s performance on the exam is evaluated by the examining committee as satisfactory or unsatisfactory.
Concurrent M.S. and Ph.D. Degrees

A student whose ultimate objective is a doctoral degree in computer science and who is directly admitted to the Ph.D. program at the beginning of his or her graduate work may opt to receive an M.S. degree while working toward the Ph.D. In such cases, the student should become involved in research early and should focus on the Ph.D. program. In some cases, the Ph.D. qualifying presentation/examination may be counted toward the M.S. requirements. Consult the Department of Computer Science Graduate Handbook for details.

Doctor of Philosophy

Doctoral students are required to complete at least 72 semester hours of graduate work, including a thesis. Students need not have a master’s degree either to begin the Ph.D. program or to be eligible to receive the Ph.D.

Admission to the Ph.D. program is granted to students who have superior academic records in computer science, solid scores on the Graduate Record Examination, and outstanding references from qualified persons well-acquainted with the applicant’s achievement and potential.

Early admission to the Ph.D. program is advised. Students who complete an M.S. degree in computer science at The University of Iowa must apply for and obtain approval for a change in status in order to continue working toward a Ph.D. The department reviews change of status requests in the same way that it reviews applications for admission.

The Department of Computer Science Graduate Handbook provides detailed information about Ph.D. degree requirements and graduate study policies.

Program requirements are as follows. Consult the department for information on satisfactory/unsatisfactory grading and minimum grade requirements.

COMMON COURSES

All doctoral students must complete these five courses.

22C:116 Advanced Operating Systems 3 s.h.
22C:122 High Performance Computer Architecture 3 s.h.
22C:123 Programming Language Foundations 3 s.h.
22C:135 Introduction to Computation Theory 3 s.h.
22C:153 Design and Analysis of Algorithms 3 s.h.

ADDITIONAL 100-LEVEL COURSES

Four additional 100-level courses approved by an adviser; a specialty area may require specific courses, so early planning and advising is important.

ADDITIONAL 200-LEVEL COURSES

At least 18 semester hours of 200-level computer science courses other than 22C:299 Research for Dissertation; a minimum of 3 semester hours of 22C:290 Readings for Research may be counted toward this requirement.

OUTSIDE SEQUENCE

All students must complete one sequence of three courses from one of the following areas: algebra, analysis, logic and set theory, operations research, statistics and probability, or numerical analysis. At least one of the three courses must be at or above the 200 level, with the exception of courses chosen in the area of statistics and probability, which may be at the 100 level with one numbered above 22S:154.

Students must earn grades of B or higher in the three courses.

DISSERTATION RESEARCH

In addition to the above courses, registration in 22C:299 Research for Dissertation is part of the degree program. Students typically earn around 18 semester hours in this course.

QUALIFYING PRESENTATION/EXAMINATION

After completion of the five common 100-level courses, Ph.D. candidates select a topic for their qualifying presentation. Although the topic may not be a student’s eventual research area, the presentation gives students an opportunity to explore a potential research area and topic.

Once a student has chosen a topic, he or she prepares a prospectus for the topic, which is reviewed by the student’s committee.

Ideally, the prospectus should be approved by the beginning of the student’s third semester in the doctoral program and presented at the end of that semester. But the qualifying presentation/examination must be completed by the end of the fourth semester in the program.

COMPREHENSIVE EXAMINATION

The comprehensive examination is not a deferred qualifying examination. Rather, it is an evaluation of the candidate’s mastery of the subject at or near the end of formal preparation and before completion of the dissertation. The exam may be written, oral, or both, at the department’s discretion. Administered only on campus, it is intended to be an inclusive evaluation of the candidate’s mastery of his or her major and related fields of study.

DISSERTATION

Each Ph.D. student must write a dissertation—a significant, original contribution to the field of computer science. Once the student obtains some research results and can identify and describe the boundaries of the dissertation, he or she presents a written proposal to the research committee. The student’s dissertation must follow the format outlined in the Graduate College Thesis Manual.

FINAL ORAL EXAMINATION

The work for the degree culminates in a final oral examination administered on campus. This examination must take place no sooner than the session following successful completion of the comprehension examination and no later than five years after completion of the comprehensive examination.

For details regarding the qualifying, comprehensive, and final examinations and the dissertation, consult the Department of Computer Science Graduate Handbook.

Graduate Service Courses

Competence and experience in computer use for problem solving is useful, and often prerequisite, to advanced study and research in many disciplines. For most students, the three-semester sequence 22C:106, 22C:114, and 22C:115 is recommended. Students in fields in which other programming languages are used heavily may find 22C:109 Programming with COBOL, 22C:110 Programming with C, 22C:112 Programming in C++, or 22C:113 Programming with Java more appropriate.

Courses

Primarily for Undergraduates

22C:000 Cooperative Education Training Assignment 0 s.h.
On- or off-campus work experience. Consent of department required. Prerequisites: completion of 22C:016, 22C:020, 22C:030, and 22M:021 or 22M:025 or 22M:035 or 22M:045.

22C:001 Survey of Computing 3 s.h.

22C:009 Programming with COBOL 3 s.h.
Business applications; records, files, mass storage devices; programming techniques for table handling, setting, generation of reports from files, maintenance of sequential and random-access files. Prerequisite: grade of C- or higher in 20C:016 or consent of instructor.

22C:010 Programming with C 3 s.h.
Major portions of C language; variables, expressions, statements; program modularization through functions, macros, blocks; control structures; representation of numeric, textual data using scalar, structured data types; operating system interfaces to files, other services; programming methodology topics such as use of program design and development tools, management of multi-file programs. Prerequisite: grade of C- or higher in 22C:016 or consent of instructor.

22C:012 Programming in C++ 5 s.h.
Basic constructs in C++; class specification; inheritance, operator and function name overloading; virtual functions and templates; basic concepts of data abstraction and object-oriented programming in C++. Prerequisite: grade of C- or higher in 22C:010 or 22C:036, or consent of instructor.

22C:013 Programming with Java 3 s.h.
Philosophy of Java; Java language; objects and classes; applications in Java; packages and interfaces; exceptions; threads; the abstract window toolkit; applets, programming for the World Wide Web. Not open to students who took 22C:016 fall 1997 or later. Prerequisite: grade of C- or higher in 22C:010 or 22C:012, or consent of instructor.
Graduate Service Courses

Not open to undergraduates; no degree credit for computer science students.

22C:106 Computer Science I 3 s.h.
Programming, program design techniques using major portions of the Java language: simple data types, variables, expressions; program modularization through procedures, functions; block structure; control statements for repetition, selection; data representations; control flow in Java; arrays, strings, files, records, sets, application examples, including searching and sorting algorithms. GE: quantitative or formal reasoning.
Prerequisites: grade of C- or higher in 22M:005 and MPT II score of 20 or higher or MPT III score of 10 or higher.

22C:200 Computer Science II 4 s.h.
Software development methodology-analysis, design, construction, verification, maintenance; tools and environments, network program communication, graphics and multimedia, user interfaces; conceptual foundations of object-orientation, introduction to machine organization, algorithm analysis, the nature of computation. Prerequisite: grade of C- or higher in 22C:016. Pre or corequisites: 22M:021, 22M:025, and 22M:035 or 22M:045.

22C:030 Computer Science III 3 s.h.
Data structures as abstractions and In application; data structure design and implementation; formal and informal performance analyses; introduction to complexity analysis of data structures and algorithms; case studies of data representation in practice. Prerequisites: grade of C- or higher in 22C:016 and 22C:020. Pre or corequisites: 22C:034.

22C:034 Discrete Structures 3 s.h.
Propositional and predicate logic, proof techniques with emphasis on induction: sets, functions, relations; graph theory, trees, combinatorics, analysis of algorithms; program correctness evidence described by grade of C- or higher in 22M:021 or 22M:025 or 22M:035 or 22M:045. Pre or corequisite: 22C:020.

22C:036 Elementary Numerical Analysis 3 s.h.
Computer arithmetic, rootfinding, polynomial approximation, numerical integration, systems of linear equations, ordinary differential equations; use of higher-level computer languages such as Mathlab, Maple, Mathematica. Prerequisite: grade of C- or higher in 22M:002 or 22M:026 or 22M:036 or 22M:046. Same as 22M:072.

22C:040 Computer Organization and Hardware 4 s.h.
Design and operation of digital computers; logic gates and combinational and sequential circuits; hardware organization and CPU design I/O control; memory addressing and structure; instruction-set architecture, machine and assembly language programming. Undergraduate standing required. Prerequisites: grade of C- or higher in 22C:020 and 22C:034.

22C:044 Algorithms 3 s.h.
Algorithms and relation to implementing data structures; sorting and searching, including AVL-trees, B-trees, hashing, graph algorithms including depth-first and breadth-first shortest, shortest path; string, array, matrix representations; dynamic storage management techniques, garbage collection. Undergraduate standing required. Prerequisites: grade of C- or higher in 22C:030 and 22C:034.

22C:050 Introduction to Systems Software 3 s.h.
Design and implementation of system software; programming development; structured data types, including arrays, strings, files, records, sets; application examples, including searching and sorting algorithms. GE: quantitative or formal reasoning.
Prerequisites: grade of C- or higher in 22C:016 and 22C:034. Pre or corequisites: 22C:030 and 22C:044.

22C:054 Programming Language Concepts 3 s.h.
Syntax specification, informal semantic models; control structures including recursion, coroutines, backtracking, concurrency; data abstraction, structuring methods; introduction to functional and logic programming; use of several implementation schemes; Prolog, Lisp, Standard ML, Miranda, Java. Undergraduate standing required. Prerequisites: grade of C- or higher in 22C:030 and 22C:034. Pre or corequisite: 22C:045.

22C:060 Topics in Computer Science 3 s.h.
Complements material in other courses. May be repeated. Consent of instructor required.

22C:099 Honors in Computer Science 3 s.h.
Individual projects. Open only to computer science majors in honor program. May be repeated. Consent of instructor required.

22C:125 Data: Abstractions, Types, and Structures 3 s.h.
Abstract data types and program specification, including graph theoretic and axiomatic models, emphasis on algebraic techniques; specification languages; testing, verification of specifications; type systems, type inference; data abstraction facilities in modern programming languages; principal associated algorithms. Prerequisites: grade of C- or higher in 22C:034, 22C:044, and 22C:054.

22C:127 Introduction to Compiler Construction 3 s.h.
Concepts, design, implementation: simple one-pass compiler; lexical analysis-token specification and recognition, automatic scanner generation; syntax analysis-context-free grammars, top-down, bottom-up, and operator precedence parsing, LL and LR-parser techniques, treating ambiguous grammars, error recovery, intermediate code: generation-passes notation, three-address code, syntax trees, code optimization-local, global, loop, large program project. Prerequisites: grade of C- or higher in 22C:034, 22C:044, 22C:050, and 22C:054.

22C:132 Parallel Programming 3 s.h.
Parallel simulations: concepts, design, implementation; performance evaluation; concept of process, parallel algorithms, language and architectural support; development, running of parallel programs on available parallel machines. Prerequisite: grade of C- or higher in 22C:050.

22C:133 Genetic Algorithms 3 s.h.
Foundation of genetic algorithms; genetic operators; selection, crossover, mutation; schema representation and implementation; control methods for selection; advanced genetic operators; variable size populations; applications of genetic algorithms; optimization in the Digital Machine System, machine learning. Prerequisites: grade of C- or higher in 22C:034 and 22C:044.

22C:135 Introduction to Computation Theory 3 s.h.
Finite automata; regular sets and expressions; 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. Only well-prepared undergraduates should consider this course. Prerequisite: grade of C- or higher in 22C:034.

22C:144 Database Management Systems 3 s.h.
Architectures and models, entity relationship model, storage representations, access methods, relational calculus and algebra, integrity constraints, decomposition to normal forms; projects using a DBMS such as Oracle; topics from query optimization, concurrency, recovery, security, distributed systems.
Prerequisites: grade of C- or higher in 22C:030 and 22C:034.

22C:145 Artificial Intelligence 3 s.h.
Basic concepts: problem-solving methods, state-space representations, heuristic search, problem-reduction techniques, machine inference, game playing; knowledge representations; overviews of expert systems, language processing systems; machine perception. Prerequisites: grade of C- or higher in 22C:034 and 22C:044.

22C:051 Computer Graphics 3 s.h.
Introduction to graphics hardware; design of human-graphic interface; coordinate systems; windowing; clipping; viewport; scaling; translation; rotation; three-dimensional representations; projections from three to two dimensions; hidden lines, surfaces; vector/mesh conversions; reflection, shading, color, animation. Prerequisites: grade of C- or higher in 22C:034, 22C:044, 22C:054, and 22C:077.

22C:153 Design and Analysis of Algorithms 3 s.h.
Design techniques such as divide-and-conquer; dynamic programming; analysis techniques such as recurrence equations, amortized complexity; advanced data structures, NP-complete problems. Prerequisites: grade of C- or higher in 22C:034 and 22C:044.

22C:167 Theory of Graphs 3 s.h.
Connectivity properties, including Euler, Hamilton cycle problems; graph colorings, matchings; characterization of families of graphs such as trees, planar graphs, networks; graph algorithms, their applications. Prerequisite: grade of C- or higher in 22M:050. Same as 22M:152.

22C:170 Numerical Analysis: Nonlinear Equations and Approximation Theory 3 s.h.
Root finding for nonlinear equations, polynomial interpolation; polynomial approximation of functions; numerical integration, Computer programming knowledge required. Prerequisites: 22M:027 and 22M:028, or 22M:040 and 22M:042, or 22M:056, or consent of instructor. Same as 22M:170.
22C:171 Numerical Analysis: Differential Equations and Linear Algebra 3 s.h.
Numerical methods for solving ordinary differential equations; direct and iterative methods for linear systems of equations; eigenvalue problems for matrices. Computer programming knowledge required. Prerequisites: 22M:027 and 22M:028; or 22M:040 and 22M:042, or 22M:050; and 22M:041 or 22M:100; or consent of instructor. Same as 22M:173.

22C:174 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. Prerequisite: 22M:100 or equivalent. Same as 22M:174.

22C:177 Parallel and High Performance Algorithms in Scientific Computing 3 s.h.
Design and implementation of computational linear algebra algorithms for high-performance computers; parallel algorithms for dense and sparse linear systems of equations, parallel direct and iterative methods, Krylov Subspace methods, and preconditioners; implementation issues on shared memory and distributed memory architectures. Knowledge of a computer language and linear algebra required. Prerequisite: a linear algebra course and a numerical analysis course. Same as 22M:178.

22C:178 Computer Communications Networks, ISO model, network topology, communication of digital data, data link control, errors, error control, point-to-point networks, broadcast networks, local area networks, transport services; integrated service digital networks (ISDN); internetworking; user services. Open only to seniors and graduate students in computer science or electrical and computer engineering. Prerequisites: 22S:039 or 22S:120 and familiarity with C and Unix; or consent of instructor. Same as 22S:178.

22C:180 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. Open only to seniors and graduate students in computer science or electrical and computer engineering. Same as 22S:180.

22C:182 Software Engineering Languages and Tools 3 s.h.
Object-oriented programming concepts (objects, classes, single and multiple inheritance, polymorphism, and dynamic binding, templates); advanced C++ topics (reUsable class design, standard C++ class library, including Standard Template Library); other object-oriented languages and environments, such as SmallTalk, Eiffel: design patterns and software architectures, such as Model-View-Controller, application frameworks. Prerequisites: grade of C- or higher in 22C:180, or experience with C++ and consent of instructor. Same as 055:182.

22C:183 Software Engineering Project 3 s.h.
Use of object-oriented concepts and object-oriented models in software system analysis and design; Booth, OMT, and Booth-Rumbaugh unified method and notation; Jacobson’s use case; use of design patterns; software architectures; case studies; team project for a real software product; object-oriented process and project management. Prerequisites: 22C:151 and 22C:182, or consent of instructor. Same as 055:183.

22C:189 Software Engineering Project Management 1-3 s.h.
Resource requirements estimation, planning, management; risk analysis; scheduling, tracking, control; personnel supervision, training, evaluation; process determination and management, including change control, configuration management; technical project leadership, assessment; participation in management of projects and teams in 22C:183. Prerequisites: grade of C- or higher in 22C:182 and 22C:183, and consent of instructor.

22C:190 Master’s Project 1 s.h.
Open only to M.C.S. degree candidates in computer science. Consent of project adviser and instructor required.

22C:191 Research for Thesis ARR
For M.S. candidates in computer science. Consent of adviser required.

22C:193 Topics in Programming Languages 3 s.h.
May include functional programming, logic programming, object-oriented programming or another paradigm; emphasis on program design, implementation issues, or semantics; theoretical, practical aspects of the paradigm. May be repeated. Consent of instructor required. Prerequisites: grade of C- or higher in 22C:044 and 22C:054.

22C:194 Topics in Systems and Networks ARR
May include discrete-event simulation, real-time systems, distributed systems theory, network protocols, network performance evaluation, operating systems, laboratory. Consent of instructor required. Prerequisite: 22C:116 or 22C:178.

22C:196 Topics in Computer Science 3 s.h.
Complements material in other courses. May be repeated. Consent of instructor required.

22C:197 Readings in Computer Science ARR
Topics not covered in other courses; individual study. May be repeated. Consent of instructor required.

22C:198 Individual Programming Projects ARR
May be repeated.

Primarily for Graduate Students

22C:245 Advanced Artificial Intelligence 3 s.h.
May include theorem proving, concept formation, AI programming languages and concepts, machine understanding, robot models, philosophies of machine intelligence. Prerequisite: 22C:145.

22C:251 Advanced Computer Graphics 3 s.h.
Topics such as global illumination and rendering; volume rendering; animation; curves and surfaces, advanced modeling and mapping techniques, and real-time graphics for virtual environments. Prerequisite: 22C:151 or consent of instructor.

22C:290 Readings for Research ARR
Open only to Ph.D. candidates in computer science. Consent of instructor required.

22C:294 Seminar on Systems and Networks ARR
Consent of instructor required.

22C:295 Seminar on Artificial Intelligence ARR
Consent of instructor required.

22C:296 Seminar on Computer Science ARR
Consent of instructor required.

22C:297 Seminar on Computer Vision and Robotics ARR
Consent of instructor required.

22C:298 Seminar on Programming Languages ARR
Consent of instructor required.

22C:299 Research for Dissertation ARR
Open only to Ph.D. candidates in computer science. Consent of adviser required.

DANCE

Chair: David Berkey
Professors: David Berkey, Basil Thompson
Associate professors: Linda Crist, Armando Durante, Alan Sener
Associate professors emeritus: Alicia Brown, Helen Chadima, François Martinet
Assistant professors: Charlotte Adams, Jeffrey Bullock
Technical director: Gary N. Holmquist
Undergraduate degrees: B.A., B.F.A. in Dance
Undergraduate nondegree program: minor in Dance
Graduate degree: M.F.A. in Dance
Web site: http://www.uiowa.edu/dance

The Department of Dance, the School of Music, and the Department of Theatre Arts belong to the University’s Division of Performing Arts. For information about the division, see “Division of Performing Arts” in this section of the Catalog.

Undergraduate Programs

The undergraduate major in dance provides a liberal arts education and thorough preparation for careers in professional dance, choreography, and education, as well as preparation for graduate studies. The program offers as many as 10 concerts per year, providing the dance student with numerous opportunities for performance and choreography. Periodic master classes with noted guest teachers, choreographers, and touring companies add diversity to the dance experience. The University of Iowa Dance Company performs its annual Dance Gala in Hancher Auditorium on The University of Iowa campus, and since 1986, the department’s touring company, Dancers In Company, has given students an opportunity to perform in Iowa and surrounding states.

Bachelor of Arts

The B.A. program in dance is designed for students who want to acquire a strong liberal arts background while pursuing a solid undergraduate dance education. The degree stresses performance and choreography as well as dance theory courses, including Labanotation, dance history, dance kinesiology, and dance production.

Students must audition for placement in dance classes before registration. No student will be admitted to the dance major without an audition. Students are encouraged to audition on campus for class placement and scholarship in the semester before entry to the University. Those who cannot come to campus for an audition may send a videotape of their work. Contact the department or the Office of Admissions for additional information.

To graduate, students must complete 50 semester hours in dance courses, including two semesters of 137:113 Major Ballet II or 137:114 Major Modern Dance II with a grade of B- or higher. Two semesters of 137:123 Major Ballet III or 137:124 Major Modern Dance III also satisfy this requirement. A maximum of 50 semester hours in Dance Department courses is accepted toward the 124
semster hours required for graduation. At least half of all semester hours in the major must be earned at The University of Iowa.

Required Courses

Students who select non-Dance Department courses to satisfy the core course requirements must take additional Dance Department electives to fill out the required 50 semester hours in Dance Department courses.

CORE COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>027:053</td>
<td>Human Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>137:040</td>
<td>Introduction to Dance</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>137:050</td>
<td>Dance Production</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>025:010</td>
<td>Fundamentals of Music</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>or</td>
<td>137:060 Music Fundamentals in Dance (preferred)</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

or

<table>
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<tr>
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<tbody>
<tr>
<td>049:045</td>
<td>Production: Run Crew (2 s.h. are required)</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>or</td>
<td>137:051 Production: Run Crew (2 s.h. are required)</td>
<td>1-2 s.h.</td>
</tr>
</tbody>
</table>

137:147 (049:108) Dance Kinesiology 3 s.h.
137:150 Beginning Labanotation 3 s.h.
137:180 Dance History: From Primitive through the Nineteenth Century 3 s.h.
137:181 Twentieth-Century Dance 3 s.h.

STUDIO COURSES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>137:070</td>
<td>Choreography I</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:071</td>
<td>Choreography II</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:134</td>
<td>Improvisation</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

DANCE TECHNIQUE

Dance majors must take 6 semester hours each of ballet and of modern dance technique; students choose 20 semester hours from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>137:022</td>
<td>Low Intermediate Jazz</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:023</td>
<td>Low Intermediate Ballet</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:024</td>
<td>Low Intermediate Modern</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:033</td>
<td>Intensive Training for the Male Dancer</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:103</td>
<td>Major Ballet I</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>137:104</td>
<td>Major Modern Dance I</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>137:113</td>
<td>Major Ballet II</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>137:114</td>
<td>Major Modern Dance II</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>137:123</td>
<td>Major Ballet III</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>137:124</td>
<td>Major Modern Dance III</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>137:133</td>
<td>Ballet Pointe</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

DANCE ELECTIVES

At least 7 semester hours from these:

<table>
<thead>
<tr>
<th>Course Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>137:001</td>
<td>Beginning Tap</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:011</td>
<td>Continuing Tap</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:080</td>
<td>Dance and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>137:105</td>
<td>World Dance Forms</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:106</td>
<td>Dance Performance</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>137:107</td>
<td>Repertory Dance Company</td>
<td>1-4 s.h.</td>
</tr>
<tr>
<td>137:135</td>
<td>Pas de Deux</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>137:140</td>
<td>Honors Project in Dance</td>
<td>arr.</td>
</tr>
<tr>
<td>137:143</td>
<td>Elementary Ballet Pedagogy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>137:144</td>
<td>Teaching of Modern Dance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>137:149</td>
<td>Honors Studies in Dance</td>
<td>arr.</td>
</tr>
<tr>
<td>137:170</td>
<td>Choreography III</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:171</td>
<td>Choreography IV</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:172</td>
<td>Independent Choreography</td>
<td>arr.</td>
</tr>
</tbody>
</table>

137:173 Topics in Dance 1 s.h.
137:180 Dance History: From Primitive through the Nineteenth Century (if not taken as a core course) 3 s.h.
or
137:181 Twentieth-Century Dance (if not taken as a core course) 3 s.h.
137:190 Independent Study arr.
137:275 Advanced Choreographic Design 1-4 s.h.

Bachelor of Fine Arts

In contrast to the B.A., the B.F.A. degree emphasizes choreography and performance through 12 additional semester hours of choreography, performance, and technique. Students may be admitted to the B.F.A. program after they have completed a minimum of 30 semester hours at The University of Iowa. Students who have achieved the equivalent of “Majors II” technique and who show academic and professional promise are selected for admission to the program.

B.F.A. students must complete three semesters of 137:123 Major Ballet III or 137:124 Major Modern Dance III with a grade of B or higher. B.F.A. students are required to maintain a cumulative grade-point average of at least 3.50 in Dance Department courses.

The B.F.A. requires that the 124 semester hours required for graduation include 62 semester hours in courses taken outside the department and 62 semester hours in Dance Department courses. At least half of all semester hours in the major must be earned at The University of Iowa.

Required Courses

Students who select non-Dance Department courses to satisfy the core course requirements must take additional Dance Department electives to fill out the required 62 semester hours in Dance Department courses.

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<td>Choreography II</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:134</td>
<td>Improvisation</td>
<td>2 s.h.</td>
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<tr>
<td>137:024</td>
<td>Low Intermediate Modern</td>
<td>2 s.h.</td>
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<tr>
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<td>Intensive Training for the Male Dancer</td>
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<td>Major Ballet I</td>
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</tr>
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<td>Major Modern Dance II</td>
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</tr>
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<td>Major Ballet III</td>
<td>1-3 s.h.</td>
</tr>
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<td>Major Modern Dance III</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>137:133</td>
<td>Ballet Pointe</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

DANCE ELECTIVES

Six semester hours are required. Students choose from dance electives listed for the B.A. degree, plus 137:022 Low Intermediate Jazz and 137:150 Beginning Labanotation.

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. degrees require a total of 50 semester hours of dance major credit; B.F.A. degrees require a total of 62 semester hours of dance major credit. Course work in dance beyond these limits does not apply toward semester hours required for graduation. These checkpoints indicate the range of semester hours required.

Before the third semester begins: 12-16 semester hours of courses in the major and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: 24-32 semester hours of courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: 36-48 semester hours of courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: 42-56 semester hours of 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 Program

The honors program in dance is designed to serve and recognize outstanding students in the areas choreography, performance, and special projects. It requires 8-10 semester hours. Students must maintain a grade-point average of at least 3.20 during their junior and senior years. All honors projects must be approved by the Dance Department faculty.
Minor
A minor in dance requires 15 semester hours of credit in Dance Department courses with a grade-point average of 2.00 or higher. At least 12 semester hours must be in University of Iowa courses numbered 137: 100 and above.

Graduate Program

Master of Fine Arts
Students who demonstrate accomplishment in dance technique and/or choreography may apply for admission to the M.F.A. program. Admission is based on an interview, a teaching and technique audition, review of videotaped choreographic and performance work, and letters of recommendation. The M.F.A. program is designed to be completed in four to six semesters in residence. Students select the choreography or the performance track before they are admitted. A total of 60 semester hours is required.

Prerequisites
Advanced technique (ballet or modern)
Demonstrated accomplishment in performance or choreography

Required Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>137:104</td>
<td>Major Modern Dance I</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>137:103</td>
<td>Major Ballet I</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>137:105</td>
<td>Major Modern Dance II</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>137:212</td>
<td>Graduate Improvisation</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:223</td>
<td>Graduate Majors Ballet III</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>137:213</td>
<td>Graduate Majors Ballet II</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>137:214</td>
<td>Graduate Majors Modern II</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>137:277</td>
<td>Thesis</td>
<td>8 s.h.</td>
</tr>
</tbody>
</table>

DANCE TECHNQE
The performance track requires 18 semester hours from the following, the choreography track requires 12 semester hours; courses may be repeated. Performance track students must take a minimum of 4 semester hours of modern dance and 4 semester hours of ballet.

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<td>Choreography I</td>
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</tr>
<tr>
<td>137:071</td>
<td>Choreography II</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:026</td>
<td>Graduate Dance Performance (1-8 s.h.)</td>
<td>1-4 s.h.</td>
</tr>
<tr>
<td>137:024</td>
<td>Graduate Improvisation</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:022</td>
<td>Low Intermediate Jazz</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>137:020</td>
<td>Beginning Jazz</td>
<td>1-2 s.h.</td>
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<tr>
<td>137:013</td>
<td>Major Ballet I</td>
<td>1-2 s.h.</td>
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<tr>
<td>137:014</td>
<td>Continuing Modern Dance</td>
<td>1-2 s.h.</td>
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<tr>
<td>137:012</td>
<td>Continuing Jazz</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>137:011</td>
<td>Continuing Tap</td>
<td>1-2 s.h.</td>
</tr>
</tbody>
</table>

ELECTIVES
M.F.A. candidates in performance must earn a total of 9 semester hours in elective courses numbered 100 or higher. A minimum of 6 semester hours must be earned in nondepartmental courses; the remaining 3 may be earned in dance or nondepartmental courses.

Facilities
The Dance Department houses six technique studios, one classroom, a video-viewing and Labanotation computer room, and its own performance theater space for dance concerts. Hancher Auditorium, the University's premier performance hall, is the site of the annual Dance Gala.

Courses

Primarily for Undergraduates

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>137:000</td>
<td>Cooperative Education Internship</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>137:001</td>
<td>Beginning Tap</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>137:002</td>
<td>Beginning Jazz</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>137:003</td>
<td>Beginning Ballet</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>137:004</td>
<td>Beginning Modern Dance</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>137:005</td>
<td>World Dance Forms</td>
<td>1-2 s.h.</td>
</tr>
</tbody>
</table>

137:004 Beginning Modern Dance
1-2 s.h.
May be repeated. GE: fine arts or humanities.

137:005 World Dance Forms
1-2 s.h.
Traditional, ethnic, and cultural dance forms; beginning-level dance and movement experience in a specific world dance form. May be repeated.

137:011 Continuing Tap
1-2 s.h.
Continuation of 137:001. May be repeated. GE: fine arts or humanities.

137:012 Continuing Jazz
1-2 s.h.
Continuation of 137:002. May be repeated. GE: fine arts or humanities.

137:013 Continuing Ballet
1-2 s.h.
Continuation of 137:003. May be repeated. GE: fine arts or humanities.

137:014 Continuing Modern Dance
1-2 s.h.
Continuation of 137:004. May be repeated. GE: fine arts or humanities.

137:022 Low Intermediate Jazz
1-2 s.h.
May be repeated. GE: fine arts or humanities.

137:023 Low Intermediate Ballet
1-2 s.h.
May be repeated. GE: fine arts or humanities.

137:024 Low Intermediate Modern
1-2 s.h.
May be repeated. GE: fine arts or humanities.

137:030 Beginning Pointe
1 s.h.
Elementary ballet pointe technique and training. May be repeated. Previous ballet training required.

137:033 Intensive Training for the Male Dancer
2 s.h.
Beginning classical ballet. Open only to males. May be repeated. GE: fine arts or humanities.

137:034 Beginning Contact Improvisation
2 s.h.
Concepts for contact improvisation, such as shared weight support, counter-balancing, elementary partnering; for dancers exploring movement potential and improvisational techniques. May be repeated.

137:040 Introduction to Dance
1 s.h.
Dance careers; current dance issues; related dance areas; introduction to the arts at The University of Iowa.

137:050 Dance Production
3 s.h.
Scenic design, costume, lighting, audio/video, publicity.

137:051 Production: Run Crew
1-2 s.h.
Experience as a run crew member in scenery, props, or costumes; or light board, sound board, or follow spot. Same as 049:045.

137:060 Music Fundamentals in Dance
2 s.h.
Basic music theory as applied to dance technique, teaching, and performance.

137:070 Choreography I
2 s.h.
Elementary skills used to explore choreographic process and form short dance works.

137:071 Choreography II
2 s.h.
Continuation of 137:070.

137:080 Dance and Society
3 s.h.
Dance styles, their relationship to societal developments; dance as an expression of human condition; choreographers and artists; special relationships of dance to other arts; historical perspective; form and content. GE: fine arts or humanities.

137:103 Major Ballet I
1-2 s.h.
Intermediate. May be repeated. Consent of instructor required. GE: fine arts.

137:104 Major Modern Dance I
1-2 s.h.
Intermediate. May be repeated. Consent of instructor required. GE: fine arts.

137:105 Major Modern Dance II
1-2 s.h.
Intermediate. May be repeated. Consent of instructor required. GE: fine arts.

137:113 Major Ballet II
1-3 s.h.
High intermediate. May be repeated. Consent of instructor required. GE: fine arts.
137:114 Major Modern Dance II 1-3 s.h.
High intermediate. May be repeated. Consent of instructor required. GE: fine arts.

137:124 Major Modern Dance III 1.3 s.h.
Advanced; preparation for professional dance work. May be repeated. Consent of instructor required. GE: fine arts.

137:133 Ballet Pointe 1-2 s.h.
Based on students’ needs May be repeated. Consent of instructor required.

137:134 Improvisation 1-2 s.h.
Consent of instructor required.

137:135 Pas de Dew 1 s.h.
Basics of partnering; techniques for coordination between partners, including breath and timing, supported pointe work, lifts, variations of turns. May be repeated. Consent of instructor required. Prerequisite: for women, 137:133; for men, 137:033.

137:140 Honors Project in Dance arr.

137:143 Elementary Ballet Pedagogy 3 s.h.
Methods, materials.

137:147 Dance Kinesiology 3 s.h.
Same as 049:108.

137:149 Honors Studies in Dance arr.
May be repeated.

137:150 Beginning Labanotation 3 s.h.
Theory, practice of Laban’s principles of movement notation.

137:161 Ballet Accompaniment 1 s.h.
Same as 025:161.

137:170 Choreography III 2 s.h.
Motion, shape, space, time.

137:171 Choreography IV 2 s.h.
Continuation of 137:170.

137:172 Independent Choreography arr.

137:173 Topics in Dance 1 s.h.
Representative topics: effort-shape, acting for the dancer, injury prevention, technique analysis, repertory, history, studio dance forms.

137:180 Dance History: From Primitive through the Nineteenth Century 3 s.h.
Evolution of dance from primitive ritual to end of 19th Century; emphasis on development of dance as a theatrical art; period dances.

137:181 Twentieth-Century Dance 3 s.h.
Brief history of American dance; changing styles in ballet and modern dance, with emphasis on American influences.

137:190 Independent Study arr.
Closed to first-year students. Consent of instructor required.

Primarily for Graduate Students

137:200 Graduate Seminar in Dance 2 s.h.
Problems, opportunities in dance world.

137:201 Graduate Production Practicum 1 s.h.
Scenery and costume design, lighting, audio/video, publicity.

137:202 Dance Theory 3 s.h.
Aesthetics; artistic aims and philosophies.

137:206 Graduate Dance Performance 0-1 s.h.
Auditions conducted throughout academic year. May be repeated.

137:213 Graduate Majors Ballet II 1-3 s.h.
High intermediate; studio. May be repeated.

137:214 Graduate Majors Modern II 1-3 s.h.
High intermediate; studio. May be repeated.

137:223 Graduate Majors Ballet III 1-3 s.h.
Advanced; studio. May be repeated.

137:224 Graduate Majors Modern III 1-3 s.h.
Advanced; studio. May be repeated.

137:234 Graduate Improvisation 1-2 s.h.

137:270 Graduate Choreography I 2 s.h.

137:271 Graduate Choreography II 2 s.h.

137:272 Graduate Choreography III 2 s.h.

137:273 Graduate Choreography IV 2 s.h.

137:274 Graduate Independent Choreography arr.
Consent of faculty project adviser required.

137:275 Advanced Choreographic Design 0-4 s.h.
Focus on one of these following areas: dance and the related arts, video dance, choreography from a historical base.

137:277 Thesis arr.

137:290 Graduate Independent Study Research. Consent of faculty project adviser required.

**ECONOMICS**

Chair:
Professors: William Albrecht, Carol Fethke, Gary Fethke, Robert Forsythe (Leonard A. Hadley Chair in Leadership), John Fuller, John Goveke (Harlan E. McGregor Professor of Economic Theory), Joel Horowitz (Henry B. Tippie Research Professor of Economics), Hyman Joseph, Forrest Nelson, George Neumann (George Daly Professor of Economics), Thomas Pogge, Raymond Riezman, N.E. Savin (George Daly Professor of Economics), Charles Whitten (Pioneer Hi-Bred Professor of Financial Economics), Stephen Williamson (Caster Phillips Professor of Financial Economics)
Professors emeriti: Gerald Nordquist, Larry Sgontz, Calvin Siebert, S.Y. Wu
Adjunct professor: J. Richard Zechar
Associate professors: Michael Ballc, Andreas Blume, Marlyne Beth Ingram, Harry Parisch, John Solow
Assistant professors: April France, Chris Sleet, Ted Temzelides

Graduate degrees: B.A., B.S., B.B.A. in Economics
Undergraduate nondegree program: minor in Economics
Graduate degree: M.A., Ph.D. in Economics
Web site: http://www.ksi.uiowa.edu/econ

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.

**Undergraduate Programs**

The baccalaureate programs in economics provide 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 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.

The department offers three undergraduate degrees—the Bachelor of Arts (B.A.) and Bachelor of Science (B.S.) in the College of Liberal Arts, and the Bachelor of Business Administration (B.B.A.) in the Henry B. Tippie College of Business.

The B.A. degree is designed to achieve a balance between economic theory, mathematical tools, and field applications. The B.S. degree maintains the balance with emphasis on developing the analytic tools; it is designed to prepare 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.

Requirements for the B.A. and B.S. degrees are described here; those for the B.B.A. degree are described in the Tippie College of Business section of the Catalog. In planning a program of study, students should be aware that the order in which courses are taken is important; some courses are prerequisites for others. Unless otherwise approved by the director of undergraduate studies, no more than 6 of the 21 semester hours required in 100-level economics courses may be satisfied by transfer or correspondence credit; in addition, students should take the required intermediate theory courses in microeconomics (06E:100 or 06E:104) and macroeconomics (06E:105) at The University of Iowa. The Handbook for Economics Majors, available from the department office, offers help in planning an economics degree program.

**Bachelor of Arts**

Requirements for the B.A. with a major in economics are as follows.

22M:017 Calculus and Matrix Algebra for Business (students who have taken 22M:021 Calculus and Modeling I or 22M:025 Calculus I or 22M:035 Engineering Calculus I may use that class) 4 s.h.

06E:050 Introduction to Economic and Social Statistics 3 s.h. or

22S:008 Statistics for Business 4 s.h.

06E:071 Statistics for Strategy Problems 3 s.h.

Twenty-one semester hours in 100-level economics courses, including the following:

06E:100 Economics for Business Decision Making 3 s.h.
or

06E:104 Microeconomic Theory 3 s.h.

06E:105 Macroeconomics 3 s.h.

Two field courses chosen from 06E:170 through 06E:189 6 s.h.

Credit is not allowed for both 06E:100 and 06E:104.
The B.S. requires the following:

22M:021-022 Calculus and Modeling I-II 8 s.h.
22M:025-026 Calculus II 8 s.h.
22S:120 Probability and Statistics or 223:130-131 Introduction to Mathematical Statistics I-II 6 s.h.

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: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: 06E:001, 06E:002, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least seven courses in the major (beyond 06E:001 and 06E:002), including 22M:017, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: at least nine courses in the major, including 06E:100 or 06E:104, 06E:105, and 223:008 or 06E:050

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

Students working toward a B.A. or B.S. with an economics major are encouraged to take part in the honors program in economics, which gives high-achieving students the opportunity to pursue special research interests.

To enter the honors program, students must have completed 06E:100 Economics for Business Decision Making or 06E:104 Microeconomic Theory, and 06E:105 Macroeconomics before the senior year and must have an overall grade-point average of at least 3.20. Honors students typically register for 06E:197 Honors Seminar in the spring of the junior year and by the end of the junior year have defined a research project under the guidance of the undergraduate honors adviser. They then complete the project under the guidance of a supervising faculty member, earning up to 6 semester hours-in 06E:198 Senior Thesis in Economics. The thesis then is presented orally to a committee of three faculty members, typically the undergraduate honors adviser, the student’s research supervisor, and a third faculty member of the student’s choice. Interested students should consult the honors adviser before the second semester of their junior year.

Minor

The minor in economics requires at least 15 semester hours of credit in economics with a grade-point average of at least 2.00. 12 of these semester hours must be taken at The University of Iowa in courses numbered 06E:100 and above. Students cannot receive credit for both 06E:100 and 06E:104.

Course Work for Nonmajors

Courses 06E:001 Principles of Microeconomics, 06E:002 Principles of Macroeconomics, and 06E:007 Contemporary Economic Problems and Policy are approved for General Education in social sciences; they introduce the broad field of economics and the specialized topics of upper-division courses. The intermediate theory courses in microeconomics (06E:100 and 06E:104) and macroeconomics (06E:105) 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 can be related to majors in many other fields—for example, history majors might take 06E:178 American Economic History; political science majors could elect 06E:119 Economics of the Government Sector and 06E:125 International Economics; global studies majors, 06E:133 Environmental and Natural Resource Economics; pre-law students, 06E:171 Antitrust: Legal and Economic Analysis and 06E:172 Law and Economics; mathematics and engineering majors, 06E:104 Microeconomic Theory and 06E:187 Introduction to Mathematical Economics; and statistics majors, 06E:184 Introduction to Econometrics. The Handbook for Economics Majors lists economics courses that complement studies in other fields. A number of students combine related interests by pursuing double majors in economics and another field, such as computer science, geography, global studies, history, mathematics, political science, sociology, or statistics.

Undergraduate Economics Association

Students are invited to join the undergraduate Economics Association. 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 Program

The department offers the Master of Arts (M.A.) and the Doctor of Philosophy (Ph.D.). The doctoral program has a theory and quantitative core enhanced by a set of field courses and is designed to provide students with rigorous training in microeconomic theory, macroeconomic theory, mathematical economics, and econometrics. In addition to the core area, students select a major area for
intensive study and specialization. The usual
program requirements. See the Tippie College of Business section of the Catalog for details on Ph.D. and joint M.A. program requirements.

Special Seminar
Each year the department offers a seminar program that brings eminent economists from other universities and from government to The University of Iowa campus. Presentations by faculty and student members of the department also are featured.

Courses

Primarily for Undergraduates

Note: 06E:001 and 06E:002 may be taken in either order or they may be taken simultaneously; they are approved for General Education in social sciences.

06E:000 Cooperative Education Internship 0 s.h.
06E:001 Principles of Macroeconomics 3-4 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. GE: social sciences (except for B.B.A. students).
06E:002 Principles of Macroeconomics 3-4 s.h.
National income and output, employment and inflation; money, credit, government finance; monetary, fiscal policy; economic growth, development; international finance. GE: social sciences (except for B.B.A. students).
06E:007 Contemporary Economic Problems and Policy 3 s.h.
Economic concepts developed and applied to analysis of current social problems, issues, policies; representative topics include jobs versus environment, free trade versus protectionism, the war on drugs, American competitiveness, health care delivery costs and choices. GE: social sciences (except for B.B.A. students).
06E:029 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). Open only to first- and second-semester students.
06E:050 Introduction to Economic and Social Statistics 3 s.h.
Statistical methods applied to problems in economics; regression analysis, contingency tables and goodness of fit tests, simple time series modeling, presentation of econometric statistics, index number construction, survey and methods. Same as 22S:035.
06E:071 Statistics for Strategy Problems 3 s.h.
Decision analysis [Should McDonald’s market pizza?], regression (Will an increase in my GPA increase my income?), business forecasting [Should Sony invest in high-definition television?], analysis of variation [Something is not normal here!]. Prerequisites: 22M:017 and 22S:008.
06E:099 Internship 3 s.h.
Open only to students participating in the Washington Center for Learning Alternatives and other approved internship programs. Consent of undergraduate director required.

06E:100 Economics for Business Decision Making 3 s.h.
Economic theories of consumer demand, producer behavior, and market equilibrium, with emphasis on applications to business decision making; organization and incentives, market imperfections and consent of instructor. Junior standing required. Prerequisites: 06E:001 and 22M:017.
06E:104 Microeconomics Theory 3 s.h.
Economic theory of consumer behavior, producer behavior, role of markets in coordinating economic decisions; conditions for efficient resource allocation by market mechanisms; market imperfections, strategic behavior. Prerequisites: 06E:001 and 22M:017, or consent of instructor.
06E:105 Macroeconomics 3 s.h.
Measurement of national product, unemployment, inflation, determination of national income, price level; role of stabilization policies; economic growth, dynamics of inflation. Prerequisites: 06E:002 and 22M:017, or consent of instructor.
06E:111 Labor 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: 06E:001 and 22M:017, or consent of instructor.
06E:113 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: 06E:001 and 06E:002, or consent of instructor.
06E:117 Money, Banking, and Financial Markets 3 s.h.
Role of money, institutions in determination of income, employment, prices in domestic and world economy. Prerequisites: 06E:001 and 06E:002, or consent of instructor.
06E:119 Economics of the Government Sector 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: 06E:001 and 06E:002, or consent of instructor.
06E:125 International Economics 3 s.h.
Foreign exchange, balance of payments; international monetary arrangements, policy; theory of international trade; role of tariffs, restrictions in international trade. Prerequisites: 06E:001 and 06E:002, or consent of instructor.
06E:129 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: 06E:001 and 06E:002, or consent of instructor.
06E:133 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: 06E:001 and 06E:002, or consent of instructor.
06E:135 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: 06E:001 and 06E:002, or consent of instructor.
06E:141 Economics of American Industries 3 s.h.
Structural evolution, imperfect competition, resource allocation; development of public policy on monopoly; selected industries. Prerequisites: 06E:001 and 06E:002, or consent of instructor.
06E:145 Introduction to the Economics of Transportation 3 s.h.
Transportation markets-intercity, rural, urban; transportation modes—rail, highway, air, water, pipeline; issues in environmental and economic regulation, finance, policy, planning, management, physical distribution. Same as 044:133.
06E:150 Introduction to Economic History 3 s.h.
Western economic development from antiquity to present; evolution of population, technology, business organization, production, trade, dynamics of economic systems; methodology. Prerequisites: 06E:001 and 06E:002, or consent of instructor.
06E:164 Economics in Transition 3 s.h.
Emerging markets in Asia and Latin America; the role of capital markets in economic development; economic growth’s dependence upon development of financial markets, institutions; major factors affecting evolution, functioning of financial systems. Prerequisites: 06E:001 and 06E:002, or consent of instructor.
06E:171 Antitrust: Legal and Economic Analysis 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: 06E:001 or 06E:104 or 091:208 or consent of instructor. Same as 091:201.
06E:172 Law and Economics 2-3 s.h.
Law examined through analytic tools of microeconomics; impact of legal rules on resource allocation, risk bearing, distribution of economic well-being. Prerequisite: 06E:100 or 06E:104 or consent of instructor. Same as 091:295.
06E:173 Advanced International Economics 3 s.h.
Neo-classical model of international trade, theory of comparative advantage, role of trade barriers, balance of payments, foreign exchange, macroeconomic policy in an open economy. Prerequisites: 06E:001 and 06E:104, or graduate standing.
06E:174 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. Prerequisite: 06E:105 or consent of instructor.
06E:175 Economic Analysis of Labor Markets 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: 06E:001 and 06E:104, and elementary calculus and statistics.
06E:176 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: 06E:104 and 06E:105, or consent of instructor.
06E:177 Industrial Organization 3 s.h.
Market structure; effects of business practices, informational problems on market structure; appraisal of antitrust policies, government regulation of business. Prerequisite: 06E:100 or 06E:104.
06E:178 American Economic History 3 s.h.
Emphasis on role of population, technology. Prerequisites: 06E:001 or 06E:104 for economics majors; 06E:001 and 16A:001 for non-economics majors. Same as 16A:194.
06E:179 History of Economic Thought 2-3 s.h.
Evolution of economics as a social science; ideas of Smith, Ricardo, Malthus, Marx, Marshall, Keynes, and their major critics. Prerequisite: 06E:001 or 06E:104 or 06E:105.
06E:184 Introduction to Econometrics 3 s.h.
Single equation linear statistical 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. Prerequisite: 22S:120 or equivalent.
06E:187 Introduction to 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. Prerequisite: 06E:100 or 06E:104 or consent of instructor.
06E:189 Topics in Economics 3 s.h.
Consent of instructor required.

For Advanced Undergraduates

06B:197 Honors Seminar 3 s.h.
Consent of instructor required.
06B:198 Senior Thesis in Economics 3 s.h.
Consent of instructor required.
06B:199 Readings and Independent Study in Economics 3 s.h.
Consent of instructor required.
Primarily for Graduate Students

With consent of the department chair, qualified undergraduates may enroll in courses listed for graduate students.

06E:200 Mathematics for Economists I 3 s.h.
Conservation of optimization, difference equations, differential equations, dynamic optimization.

06E:201 Statistical Methods 3 s.h.
Probability theory, statistical inference, linear regression model, econometric methods. Prerequisites: one year of calculus and matrix algebra.

06E:203 Microeconomics I 3 s.h.
Price theory; emphasis on problem formulation and solving, economic intuition; producer and consumer behavior, competitive and noncompetitive markets, welfare economics. Offered fall semesters. Consent of instructor required.

06E:204 Macroeconomics I 3 s.h.
Economic growth, business cycles, money and inflation. Offered fall semesters. Consent of instructor required.

06E:205 Microeconomics II 3 s.h.
Neoclassical paradigm; axioms, essential conclusions; limitations of paradigm, alternative theories. Offered spring semesters. Prerequisite: 06E:200 or 06E:203 or one year of calculus.

06E:206 Macroeconomics II 3 s.h.
Dynamic macroeconomic models; stochastic macroeconomics; time consistency equilibrium business cycle theory. Offered spring semesters. Prerequisite: 06E:204 or consent of instructor.

06E:211 Mathematical Economics I 3 s.h.
Convex analysis in economic theory; ordinal and cardinal preference relations; quasiconcave, concave numerical representations; separation principle for convex sets-linear programming, concave programming; Brouwer fixed point theorem; existence of competitive equilibrium. Prerequisites: 06E:201 and 06E:205.

06E:212 Mathematical Economics II 3 s.h.
Theories of n-person games, noncooperative or cooperative; applications to general economic equilibrium analysis. Prerequisite: 06E:211.

06E:221 Econometrics 3 s.h.
Statistical inference in single and multiple equation stochastic models, models with nonindependent or nonstochastically distributed error structure, dynamic models, OLS, GLS, N. ML estimation; asymptotic distribution theory; exact, asymptotic hypothesis tests. Prerequisite: 22S:154 or equivalent.

06E:222 Applied Econometrics 3 s.h.
Empirical problems; multiple linear regression, nonlinear regression, maximum likelihood, hazard functions, univariate and multivariate time series, flexible functional forms. Prerequisite: 06E:221.

06E:223 Econometric Theory I 3 s.h.
Statistical theory underlying econometric inference; emphasis on estimation, hypothesis testing in linear models. Prerequisite: 06E:221.

06E:234 International Business-M.B.A. 3 s.h.
Problems in international business; how to explore, how to deal with import competition, international joint ventures; country studies. Consent of instructor required.

06E:235 International Trade Theory 3 s.h.
Tariff theory and policy. Consent of instructor required.

06E:236 International Monetary Economics 3 s.h.
Balance of payments adjustment; exchange controls; international investment; macroeconomy in an open economy. Consent of instructor required.

06E:241 Macroeconomics III 2-6 s.h.
Current research in macroeconomics; development of research topics with emphasis on theoretical and empirical analysis. Prerequisites: 06E:205 and 06E:221.

06E:245 Monetary Theory 2.3 s.h.
Research at the frontier of monetary theory and policy; overlapping generations models, search models of money, representative agent monetary models, intermediation and banking theory, and financial contracts.

06E:250 Labor Economics 3 s.h.
Problems and models, including intertemporal models of labor markets; uncertainty and labor market activity; retirement decisions, economic theories of fertility; economics of discrimination; job search models; economic models of unions; bargaining and strikes, public sector labor markets; determinants of income distribution; emphasis on empirical verification of theory. Prerequisites: 06E:205, and 06E:184 or 06E:221.

06E:251 Labor Economics 3 s.h.
Current research, with emphasis on prospects for original research; may include life cycle models of labor supply, dynamic labor demand models, compensating wage differentials, labor turnover, cyclical employment fluctuations, aspects of collective bargaining. Prerequisites: 06E:205, and 06E:184 or 06E:221.

06E:263 Economic History 3 s.h.
Western economies; emphasis on population trends and labor force growth, evolution of capital markets, patterns of capital accumulation, resultant rates of economic growth; analyses of technological progress, growth of open economies. Consent of instructor required.

06E:271 Industrial Organization 2-4 s.h.
The firm, monopolistic competition, oligopoly and workable competition; industrial organization, nature of equilibrium under uncertainty. Prerequisites: 06E:205 and 06E:221.

06E:272 Economics of Organization 2-4 s.h.
Theoretical design of mechanisms for achieving efficient allocations within organizations, and development of empirical frameworks to implement such mechanisms; applications to problems in industrial organization and labor economics. Prerequisites: 06E:201 and 06E:205.

06E:281 Economics of the Government Sector 3 s.h.
Role and effects of major taxes on allocation of resources, distribution of income, economic growth and stability; debt finance as an alternative to tax finance. Prerequisites: 06E:201 and 06E:205.

06E:289 Contemporary Topics In Economics 3 s.h.
Topics not offered in other courses. Consent of instructor required.

06E:300 Readings in Economics 1-3 s.h.
Consent of instructor required.

06E:301 Thesis in Economics 1-3 s.h.
Consent of instructor required.

Advanced Graduate Seminars

06E:310 Seminar in Economic Theory Consent of instructor required.

06E:321 Workshop in Microeconomics Consent of instructor required.

06E:322 Workshop In Macro and Monetary Economics Consent of instructor required.

EDUCATION

See the College of Education section of the Catalog.
**Undergraduate Program**

The English department offers courses in literature, film, critical theory, cultural studies, language, and writing. In these courses, students study poetry, fiction, essays, criticism, film, and theory to acquire methods for understanding the history and significance of texts in the cultures from which they emerge. The program also challenges students to strive for excellence as writers.

**Bachelor of Arts**

The major in English requires a minimum of 33 semester hours of course work, including work in five specified areas. To keep the program flexible and responsive to students’ individual objectives, the department has divided the major requirements into categories of class work—readings, authors, culture and identity, literature and culture, and literature written before 1800. Readings courses are designed especially for new majors. Students may meet the pre-1800 literature requirement by taking courses that also satisfy other requirements (for example, 008:072 Shakespeare satisfies both author and pre-1800 requirements). Up to 9 semester hours of creative writing credit may be counted toward the total 33 semester hours.

To fulfill the requirements, students should select classes in the following categories.

- **Readings courses**
  - 3 s.h.
- **Authors courses covering one or two authors**
  - 3 s.h.
- **Culture and identity**
  - 3 s.h.
- **Literature and culture**
  - 3-4 s.h.
- **Literature written before 1800**
  - 9 s.h.

Of the 33 semester hours required for the major, 15 semester hours may be transferred from another institution. At least 18 hours in the major must be taken in residence at The University of Iowa. Correspondence courses do not count toward the major unless the department’s director of undergraduate studies grants special permission due to unusual circumstances.

Students who plan to apply to the College of Education for a degree in secondary education (English) should consult with an advisor in that program as early as possible. The education degree demands that students choose particular courses within each of the English major’s required categories in order for them to meet state requirements. See “English and Education” in this section of the Catalog.

Students interested in an English major should consult the director of undergraduate studies in the English department office. The English department’s World Wide Web site also offers detailed information about the program, faculty, courses, and upcoming events.

**Courses Approved for General Education**

Although 08G:001 The Interpretation of Literature is a General Education Program requirement, English majors should substitute any course approved for General Education in the humanities area for 08G:001. In general, the department strongly encourages English majors to complete the General Education Program with courses other than 08G courses.

No 08G course can be counted toward the 33 semester hours required for the English major. Creative Writing Studio Workshop (08C:001) cannot be counted toward the English major.

**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:** at least one-quarter of the semester hours required for graduation
- **Before the fifth semester begins:** at least two courses in the major and at least one-half of the semester hours required for graduation
- **Before the seventh semester begins:** at least six courses in the major and at least three-quarters of the semester hours required for graduation
- **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

**Honors**

The English major with honors gives talented students the opportunity to enhance their course of study through special courses and independent study. Each year the department offers five honors proseminars covering a wide range of historical areas and topics.

Students usually complete a four-semester sequence to graduate with honors in English. They must complete two honors proseminars (008:098), preferably during the junior year, and a senior thesis. Students who wish to count another course work, including study abroad, toward the proseminar requirement must have the honors director’s permission. The honors proseminar requirement must be completed the semester before graduation.

To graduate with honors in English, students must maintain a cumulative grade-point average of at least 3.20 and an English grade-point average of at least 3.50.

Ideal if the honors student’s senior year is devoted to the thesis project, written under the supervision of a faculty member. Students may earn up to 6 semester hours of credit for work they carry out for the honors thesis, through a combination of hours earned in 008:120 Honors Thesis Workshop and/or 008:198 Undergraduate Honors Project Independent Study. Thesis projects may cover the range of fields offered by the Department of English: literary, theoretical, and cultural studies; nonfiction writing; and creative writing (poetry and fiction).

Students who wish to submit a nonfiction thesis must work under the supervision of a regular faculty member in the Nonfiction Writing Program and must have completed at least one nonfiction writing course above the 100 level. Students who wish to submit a creative thesis in poetry or fiction must work under the supervision of a permanent member of the Writers’ Workshop.

Students interested in more information should contact the director of the English honors program or the director of undergraduate studies. A handout, *Guidelines and Deadlines*, which details requirements for the final project and specifies deadlines for turning in the prospectus and the final honors project, is available in the English office and the Honors Lounge.

**Minor**

Before taking courses for the minor, students must complete 08G:001 The Interpretation of Literature.

The minor requires a minimum of 15 semester hours of course work in English. Students must take at least 6 of these semester hours in the area of literature (courses numbered 008). The other 9 may be selected from additional courses in literature, courses in writing (08C, 08N, 08W) or courses in linguistics (08L). At least 12 semester hours must be from advanced courses (courses numbered 008:033 and above, 08C:002 and above, 08N:050 and above, and all 08L courses are considered advanced).

Courses designated 08G do not count toward the minor. Transfer credit and credit by examination are not accepted toward the 12 semester hours of advanced work. No credit from correspondence study is accepted toward the minor.

Students must have a grade-point average of 2.00 or higher in course work taken toward the minor.

No course for the minor may be taken pass/nonpass.

The minor is officially acknowledged and recorded only after the student has completed the application for graduation.

Students who would like assistance in planning to meet requirements for the minor may schedule an appointment with an advisor in the English department by contacting the undergraduate English secretary.

**English and Education**

Students planning to teach English in secondary schools must complete the requirements for the major in English and gain admission to the Teacher Education Program. Application forms for admission are available from the Office of Student Services at the College of Education.

**Course Requirements**

By the end of the program, students must have taken the following courses.
English (Part of the Undergraduate Major)

08N:141 Approaches to Teaching Writing 3 s.h.
08P:182 Language and Learning 2-3 s.h.
08P:198 Teaching Literature to Adolescents 3 s.h.

A course in Shakespeare
Three courses in American literature, one of which focuses on cultural studies
A course in 19th or 20th-century British literature
A course in writing (in addition to 08N:141)

Education

07F:180 Human Relations for the Classroom Teacher 3 s.h.
07P:075 Educational Psychology and Measurement 3 s.h.
07S:100 Foundations of Education 3 s.h.
07S:115 Methods: English 3 s.h.
07S:187 Seminar: Curriculum and Student Teaching 1-3 s.h.
07S:191 Observation and Laboratory Practice in the Secondary School arr.
07S:192 Observation and Laboratory Practice in the Secondary School arr.
07S:194 Methods: High School Reading 2-3 s.h.
07U:100 Mainstreaming the Exception; Learner 3 s.h.
07W:092 Introduction to Microcomputing for Teachers 1 s.h.

Admission

Applicants to the Teacher Education Program in English must have earned a minimum of 12 semester hours in English before they can be admitted (8G courses do not count toward the 12 semester hours). Applicants must have a grade-point average of at least 2.70 in their University of Iowa course work and a grade-point average of at least 3.00 in their English courses. Finally, applicants must submit at least two letters of recommendation and write a personal statement explaining why they would like to enter the teaching profession.

Minor Licensure in English

Students who seek licensure for secondary teaching in fields other than English may seek minor licensure in English. This is particularly appropriate for students majoring in speech, journalism, Spanish, French, or German. These students must complete 28-33 semester hours of English. Freshman courses in rhetoric, speech, or writing do not count toward this requirement.

The English minor licensure program must include a course in each of these areas: American literature of the 20th century, British literature of the 19th or 20th centuries, literature for adolescents, language and learning, and approaches to teaching high school writing. In addition, students are required to take 07S:115 Methods: English, and 07S:194 Methods: High School Reading, offered by the College of Education’s Division of Curriculum and Instruction. 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.

Graduate Programs

Master of Arts in Literary Studies

The M.A. in Literary Studies is one of several M.A. programs offered by the English department at The University of Iowa. The M.F.A. and the M.F.A. in Nonfiction Writing offer advanced courses in writing poetry, fiction, and essays; the M.A. in Literary Studies introduces students to the professional study of literature.

Although direct application to the Ph.D. program is generally encouraged, some students consider the M.A. an appropriate step in their professional training. These students may have had an undergraduate major in a different field or may want more preparation for other reasons. Some may be intending to complete their studies elsewhere. Students interested in careers in any area of book studies (professional writing, editing, web design, or publishing) may wish to pursue the M.A. as a terminal degree, as many teachers seeking to enhance their credentials or students pursuing intellectual growth unrelated to a specific career.

M.A. and Ph.D. students mix freely in graduate courses, share the same access to faculty, and meet the same standards of quality in their work.

Degree Requirements

The degree requires a minimum of 30 semester hours; 24 of these must be earned in residence at The University of Iowa with a grade-point average of at least 3.25. Students who wish to transfer to the Ph.D. program at Iowa must complete two semesters or 15 semester hours of course work in literature (whichever comes first) before applying for admission to the doctoral program.

COURSE WORK

Each student must take one course at the 200 level or above from each of the following five areas: Applicable transfer courses must be approved by a faculty advisor.

British literature to 1700
American literature to 1914
British literature 1700 to 1914
Twentieth-century literatures in English
Criticism and theory

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.

Completion of the M.A. degree 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 a M.A. thesis must submit a brief prospectus approved by a thesis director before registering 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. At a final oral examination, 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 no later than four weeks before the date on which the degree is to be conferred. The final copy of the thesis must be deposited with the college no later than 10 days before graduation. For additional information on Graduate College rules, consult the Manual of Rules and Regulations of the Graduate College.

THE PORTFOLIO

Students working toward the M.A. degree in literary studies submit, near the end of their course work, a portfolio of work to the M.A. examination committee (the director of the M.A. program and two other professors). The committee reads the portfolio and then meets with the candidate for an oral review. At the end of the oral review, the committee judges the work to be either satisfactory or unsatisfactory.

The first step in preparing to submit a portfolio is a meeting between the candidate and the director of the M.A. program to discuss the portfolio and scheduling. Soon after this meeting, and no later than three weeks before the date set for the oral review, the student presents to the director a draft of the portfolio’s introductory statement. The director may suggest changes before after approval of the statement is granted. Once the director approves the statement, the student must provide the director with three copies of the full portfolio at least two weeks before the date set for the oral review.

The work in the portfolio should demonstrate the candidate’s knowledge of literature as a broad historical and theoretical inquiry. Students submit approximately 50 pages, or 12,500 words, of their best work, along with an introductory statement of five to seven pages. The body of the portfolio should contain revised versions of papers originally produced for classes. The introductory statement should explain the contents of the portfolio, contextualize each paper, and give a brief overview of the writing submitted. Candidates are expected to describe the research methods used in assembling their portfolios and the critical practices that ground their work.

The oral review lasts approximately one hour. In it the committee discusses the portfolio with the candidate, requesting clarification or elaboration of aspects of the work submitted. The exam committee consists of the director of the M.A. program and two other members, who serve annual terms. All three read the full portfolio and attend the oral review. To pass the
exam, the candidate must win a majority vote by committee members.

M.A.T. Candidates
The English component of the exam for the M.A.T. program is administered in coordination with the College of Education. M.A.T. candidates should contact the Division of Curriculum and Instruction or visit the College of Education’s World Wide Web site.

Master of Fine Arts (Nonfiction)
The nonfiction writing program is broadly devoted to literary nonfiction. It is designed primarily for persons who wish to become nonfiction writers, but it also may be appropriate for those who wish to teach, do editing, or pursue other activities in the field of nonfiction. Normally, the program takes three years to complete.

The degree requires a total of 48 semester hours, with at least 30 earned in residence at The University of Iowa and 24 involving work in program-designated courses. In addition to the course work, students are required to enroll for at least 4 and no more than 8 semester hours of credit for the thesis.

Electives may be chosen widely, from courses in the English department as well as any other departments of the University.

All students in the program are required to write a thesis, which 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.

Master of Fine Arts (Creative Writing)
The purpose of the M.F.A. program in creative writing is to provide professional guidance and a stimulating environment for students with previous achievement or notable promise in writing poetry or fiction. The flexible requirements include 48 semester hours of graduate credit, earned chiefly in the Writers’ Workshop; a collection of poems or short stories, or a novel; and satisfactory performance on an examination covering modern poetry or fiction.

Ph.D. requirements include the following.

Formal admission to candidacy by a vote of the full faculty of the department, usually during the third semester of doctoral study

Course work in any four of the following historical periods:

- British or American literature and culture before 1500
- British or American literature and culture 1500-1660
- British or American literature and culture 1660-1800
- British or American literature and culture of the 20th century

Three seminars taken at The University of Iowa

A comprehensive examination that consists of the following: a portfolio of five scholarly questions based on a period of British and/or American literary history; 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 exam

A dissertation

A final examination in defense of the dissertation

All doctoral candidates are encouraged to gain teaching experience, preferably in the College of Liberal Arts programs in rhetoric and in the literature General Education Program.

Application forms and a complete description of the program are available from the graduate secretary of the department.

Financial Support

Support is available to graduate students in the form of scholarships, fellowships, and teaching and research assistantships. It is awarded on a competitive basis. The department strives to support all doctoral students who are in good standing.

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 English department and the University’s Office of Admissions.

Admission

Admission requirements are stated in Graduate Studies in English, which is available from the English department graduate office. Applications for admission are due January 15.

Writing Programs

For the past 60 years, The University of Iowa has been a national leader in virtually all areas of the teaching of writing.

Founded in 1936, the Writers’ Workshop was a pioneer in the field of creative writing. It counts scores of distinguished poets and novelists among its alumni. The workshop provides opportunities for students at all levels to work with outstanding teacher-authors. It also brings numerous prominent authors to campus each year for lectures and readings.

The University of Iowa also is a leader in the area of nonfiction writing. It is one of the few academic institutions in the nation that offers a full range of graduate course work in this area.

Facilities

The University’s library collection is strong in all areas of English and American literature. Partly because of the influence of the Writers’ Workshop, the library 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, The 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 Windhover Press, which publishes fine editions of works by contemporary authors, offers qualified students the opportunity to learn the art of fine printing.

The Department of English and the 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. Detailed course descriptions for most undergraduate courses in any specific semester are published in the Undergraduate Guide to Courses. Detailed course descriptions for each semester’s graduate courses are available on the Department of English’s World Wide Web site.

Literature -General Education

All students who seek a degree from the College of Liberal Arts must take 08G:001 The Interpretation of Literature as part of the General Education Program. English majors need not take 08G:001 but may substitute any course approved for General Education in the humanities area.

08G:001 (or its equivalent by examination or transfer) is a prerequisite for courses 08G:002 through 08G:015. The pass/fail option is available only for students in the Colleges of
Nursing and Engineering with the consent of the student’s adviser and the instructor. Students must successfully complete the rhetoric requirement before they take OK courses.

08G:008 The Interpretation of Literature 3 s.h.

Poetry, short fiction, drama, the novel. GE: interpretation of literature.

08G:002 Biblical and Classical Literature 3 s.h.

Literatures of ancient cultures-Jewish and Christian, Greek and Roman-that have deeply affected later civilizations. GE: humanities. Prerequisite: 08G:001.

08G:003 Medieval and Renaissance Literature 3 s.h.

English and European poetry; prose. drama circa 400-1700 in dialogue with contemporary concerns. GE: humanities. Prerequisite: 08G:001.

08G:004 Epic and Tragic Literature 3 s.h.

Heroes and heroines as the products of imagination; literary representations of heroes and heroines in differing social and historical situations; how their representation shapes our understanding of heroism. GE: humanities. Prerequisite: 08G:001. Closed to students who have taken 08G:012.

08G:005 Literatures of Native American Peoples 3 s.h.

Genres of Native American literature, including oral literature; focus on written literature (fiction, essays, poetry, drama). GE: cultural diversity. Prerequisite: 08G:001. Same as 149:005.

08G:006 Narrative Literature 3 s.h.

Selected masterpieces and recent developments in the art of storytelling in poetry and prose. GE: humanities. Prerequisite: 08G:001.

08G:007 Poetry 3 s.h.

Poetry from major periods of development as well as contemporary verse; emphasis on distinctive language, major formal patterns of poetry. GE: humanities. Prerequisite: 08G:001.

08G:008 Drama 3 s.h.

Plays from a wide range of periods; relationship of text to performance. GE: humanities. Prerequisite: 08G:001.

08G:009 American Lives 3 s.h.

Major works of American autobiography. GE: humanities. Prerequisite: 08G:001.

08G:010 Literature and Sexuality 3 s.h.

Works from various genres, time periods, cultures that reflect and construct a wide range of sexual identities. GE: cultural diversity or humanities. Prerequisite: 08G:001.

08G:012 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. GE: humanities. Prerequisite: 08G:001. Closed to students who have taken 08G:004.

08G:013 Literatures of Latinos/as in the USA 3 s.h.

Works in English by authors of African descent from America, continental Africa, the Caribbean. GE: foreign civilization and cultural diversity. Prerequisite: 08G:001. Same as 129:008, 141:014.

08G:015 Women and Literature 3 s.h.

Works from various genres and time periods focusing on a wide range of women’s experiences. GE: humanities. Prerequisite: 08G:001.

literature - Primarily for Undergraduates

English department courses are open to all undergraduates who have satisfied the rhetoric requirement. Undergraduates should complete one or more departmental courses below the 100-level before attempting 100-level courses. English majors are required to take at least one course from the first four categories. New majors are encouraged to take a readings course in their first semester.

**Readings**

These specialized discussion courses are intended for beginning English majors; other students should consult the instructor before registering.

008:033 Reading Theory 3 s.h.

008:034 Reading Novels 3 s.h.

008:035 Reading Poems 3 s.h.

008:036 Reading Short Stories 3 s.h.

008:037 Reading Plays 3 s.h.

008:038 Reading Essays 3 s.h.

008:039 Reading Criticism 3 s.h.

**Authors**

008:071 Chaucer 3 s.h.

008:072 Shakespeare Same as 049:072.

008:073 Milton 3 s.h.

008:074 Selected American Authors 3 s.h.

008:076 Selected Modern Authors 3 s.h.

008:110 Selected Authors 3 s.h.

008:122 Shakespeare Same as 049:182.

008:156 Invitation to Nabokov 3 s.h.

Nabokov’s work and his writings on Russian literature. Same as 041:156, 048:156.

008:165 Shakespeare Selected Plays Same as 049:183.

008:178 Old English Beowulf 3 s.h.

**Literature and Culture**

008:101 Literature and Culture of the Middle Ages 3-4 s.h.

008:102 Literature and the Culture of the Renaissance 3-4 s.h.

008:103 Literature and the Culture of Eighteenth-Century England 3-4 s.h.

008:104 Literature and the Culture of Nineteenth-Century England 3-4 s.h.

008:105 Literature and Culture of Nineteenth-Century America 3-4 s.h.

008:106 Literature and the Culture of Twentieth-Century America 3-4 s.h.

008:107 Literature and Culture of Nineteenth-Century Scotland 3-4 s.h.

008:108 Literature and Culture of the Caribbean 3-4 s.h.

008:129 Irish Literature and Culture I 3-4 s.h.

008:131 Literature and Culture of Seventeenth-Century England 3-4 s.h.

008:141 Literature and Culture of America Before 1800 3-4 s.h.

008:164 Literature and the Culture of the Twentieth Century 3-4 s.h.

008:180 Irish Literature and Culture II 3-4 s.h.

**Culture and Identity**

008:084 Topics in Culture and Identity 3 s.h.

008:086 Asian American Literature 3 s.h.

008:111 American Folklore 3 s.h.

008:112 Literatures of the American Peoples 3 s.h.

008:113 Native American Literature 3 s.h.

008:114 American Regional Literatures 3 s.h.

008:116 African American Literature I Same as 129:116.

008:117 African American Literature II Same as 129:117.

008:118 Women Writers of African Descent Same as 129:127, 131:127.


008:138 Post-Colonial Studies 3 s.h.

008:139 African American Poetry Same as 129:139.

008:154 African American Drama Same as 049:192, 129:190.

008:159 Regional Women Writers Same as 131:159.

008:161 Women in Literature Same as 131:161.

008:163 Identity and Social Issues 3 s.h.

008:166 Themes and Modes in Literature by Woman Same as 131:166.


008:183 Creativity Workshop 3 s.h.

008:185 Native American Autobiography Same as 149:185.

008:186 African Autobiography 3 s.h.

008:188 Prose by Women Writers Same as 131:188.

008:191 International Literature Today Same as 48W:191.

**Popular Culture and Interdisciplinary Studies**

008:011 Films and Screenplays Same as 36F:011, 048:011.

008:081 Film and Literature Same as 36F:081, 048:081.

008:123 American Literature and History Same as 045:123.

008:124 Topics in British and Irish Film Same as 048:127.


008:130 Literature and the Book Same as 108:181.

008:142 Popular Literatures 3 s.h.

008:143 American Landscape 3 s.h.

008:151 Literature and Anthropology Same as 048:151, 113:109.

008:171 Topics in Film and Popular Culture Same as 36F:171, 048:174.

008:172 Narrative and the Cinema Same as 36F:172, 048:172.

008:175 Topics in Film and Literature Same as 048:175.

008:176 Literature and Philosophic Thought 3 s.h.

008:177 Literature and Art Same as 048:177.
008:179 Literature and Society
   Same as 048:179.
008:182 Science Fiction
   3 s.h.

Period and Genre
008:001 Modern Fiction
   3 s.h.
008:002 Postmodern Fiction
   3 s.h.
008:008 Classical and Biblical Literature
   GE: humanities. Same as 048:040.
008:013 The Classical Views
   GE: foreign civilization and culture or humanities. Same as 041:013.
008:040 Major Texts in World Literature I
   GE: humanities. Same as 048:040.
008:041 Major Texts in World Literature II
   GE: humanities. Same as 048:041.
008:053 Lyric Structures
   GE: humanities. Same as 048:041.
008:055 American Poetry
   3 s.h.
008:056 American Literary Classics
   3 s.h.
008:057 American Novel I
   3 s.h.
008:058 American Novel II
   3 s.h.
008:059 American Short Story
   3 s.h.
008:066 Selected Works of the Twentieth Century
   3 s.h.
008:067 Continental European Renaissance
   3 s.h.
008:069 Selected Romantic Works
   3 s.h.
008:070 Selected Victorian Works
   3 s.h.
008:085 Topics in American Literature
   3 s.h.
008:087 Medieval Celtic Literature
   GE: fine arts or humanities. Same as 049:114.
008:098 Honors Proseminar
   4 s.h.
008:109 European Literature of the Nineteenth Century
   Same as 048:109.
008:115 Classical Mythology
   GE: humanities. Same as 041:112.
008:121 British Poetry
   3 s.h.
008:125 Modern British and American Poetry
   3 s.h.
008:126 Literary Genres in European Literature II
   Same as 048:115.
008:132 English Novel Defoe to Austen
   3 s.h.
008:133 English Novel Scott to Butler
   3 s.h.
008:140 Contemporary Scene in Fiction
   Same as 048:140.
008:144 Medieval Drama
   Same as 049:181.
008:145 English Renaissance Drama
   Same as 049:184.
008:146 Restoration Drama
   Same as 049:185.
008:148 Modern Drama Ibsen to Shaw
   Same as 049:186.
008:155 Contemporary British Drama
   Same as 049:185.
008:160 Selected Themes in Literary Works
   3 s.h.
008:167 Studies in Drama
   same as 049:193.
008:170 Literary Genres and Modes
   3 s.h.
008:184 Contemporary Theatre and Drama
   GE: fine arts or humanities. Same as 049:114.
008:193 Medieval Celtic Literature
   3 s.h.
008:196 American Novel Since 1945
   3 s.h.
008:197 American Drama Since 1945
   Same as 049:117.

Theory and Criticism
008:099 Undergraduate Seminar
   Same as 046:099, 048:095.
008:100 Introduction to Criticism and Theory
   Same as 048:100.
008:153 Rhetorical Traditions
   Same as 049:101.
008:173 The Politics of Literary Theory
   Same as 07E:154, 151:142.
008:174 Foundations of Rhetoric Theory and Criticism
   Same as 049:194, 131:194.
008:181 Issues in Rhetoric and Culture
   Same as 049:194.
008:194 Introduction to Feminist Criticism
   Same as 049:194, 131:194.
008:195 Topics in Criticism and Theory
   3 s.h.

Honors
The following courses are open only to students admitted to the English department honors program; instructor’s consent may be required.
008:029 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). Open only to first- and second-semester students.
008:098 Honors Proseminar
   4 s.h.
May be repeated. Consent of English department honors director required.
008:120 Honors Thesis Workshop
   3 s.h.
Consent of English department honors director required. Prerequisite: 008:098.
008:198 Undergraduate Honors Project
   2-4 s.h.

Literature - for Graduate Students
008:201 Introduction to Graduate Study
   1 s.h.

Literary Periods
008:211 Literature and Culture of America
   3 s.h.
008:215 Middle English Language and Literature
   4 s.h.
008:217 Medieval Genres
   3 s.h.
008:218 Readings in Medieval Literature and Culture
   3 s.h.
008:222 Later Eighteenth-Century Literature: 1740-1800
   3 s.h.
008:223 Romantic Literature
   3 s.h.
008:224 Early Victorian Literature
   3 s.h.
008:225 Late Victorian and Edwardian Literature
   3 s.h.
008:235 Readings in Twentieth-Century Literatures I
   3 s.h.
008:236 Readings in Twentieth-Century Literatures II
   3 s.h.
008:238 Readings in American Indian Literature
   3 s.h.
008:247 American Literary Magazines
   1-3 s.h.
008:249 Modernist Studies
   3 s.h.
008:250 Readings in American Literature
   3 s.h.
008:255 Readings in Sixteenth- and Seventeenth-Century Genres
   3 s.h.
008:256 Readings in Sixteenth- and Seventeenth-Century Literature and Culture
   3 s.h.
008:274 Post-Colonial Women’s Writing
   Same as 131:274.
008:332 Selected Twentieth-Century Genres
   3 s.h.
008:333 Studies in Modernism and Postmodernism
   3 s.h.
008:338 Topics in Contemporary Literature and Culture
   3 s.h.

Authors
008:216 Medieval Authors
   3 s.h.
008:227 Three African Writers
   Same as 129:227, 141:227.
008:253 Shakespeare
   Same as 049:213.
008:254 Sixteenth- and Seventeenth-Century Authors
   3 s.h.
008:331 Selected Twentieth-Century Authors
   3 s.h.

Theory and Criticism
008:245 Feminist Cultural Studies
   Same as 131:245.
008:260 Reading Genres
   3 s.h.
008:261 History of Criticism: Plato to 1700
   Same as 048:261, 049:261.
008:262 History of Criticism: 1700-Present
   Same as 049:262, 049:262.
008:265 Feminist Criticism
   Same as 049:263, 131:263.
008:266 Rhetorics of Ethnographies
   Same as 049:261, 113:261.
008:267 Classical Rhetoric
   Same as 36R:301.
008:268 Modern Rhetoric
   Same as 36R:302.
008:269 Rhetorical Theory
   Same as 010:349.
008:270 Introduction to Cultural Studies
   3 s.h.
008:273 Post-Colonial Literature and Theory
   3 s.h.
008:275 Literature as Letters
   3 s.h.
008:277 Introduction to Contemporary Literary Theory
   Same as 035:281, 048:217.
008:284 Types of Modern Criticism
   Same as 035:284, 048:284.
008:360 Studies in Language Theory
   Same as 36R:403.
008:330 Modes of Critical Analysis
   3 s.h.
Special Topics

008:203 History of the Book 3 s.h.
Same as 021:256, 108:203.

008:228 Studies in African American Literature Same as 129:228.

008:239 Readings in Post-Colonial Literatures 3 s.h.

008:240 Readings in American Literary Genres 3 s.h.

008:241 American Indian Women’s Literature Same as 131:241.

008:248 Caribbean Literature 3 s.h.

008:259 Law and Lawyers in Literature 1-3 s.h. same as 091:659.

008:340 Topics in American Literature and Culture 3 s.h.

Seminar

Advanced work in literary history, criticism, and theory; concentration varies from semester to semester.

008:230 Crossing Borders Seminar: Introductory 3-4 s.h.

008:231 Crossing Borders Seminar 3.4 s.h.

008:402 Seminar: Medieval Literature and Culture 3 s.h.
Same as 048:402.


008:414 Seminar: Sixteenth- and Seventeenth-Century Literature and Culture 3 s.h.

008:421 Seminar: Restoration and Eighteenth-Century Literature 3 s.h.

008:431 Seminar: Romantic Literatures 3 s.h.

008:432 Seminar: Victorian Literature 3 s.h.

008:440 Seminar: Studies in the Twentieth Century 3 s.h.

008:441 Seminar: Contemporary Studies 2 s.h.

008:455 Seminar: Post-Colonial Studies same as 048:455.

008:458 Seminar: American Literature and Culture 3 s.h.

008:460 Seminar: Problems in Aesthetics and Literary Theory Same as 048:460.


008:462 Seminar: Cultural Studies 2 s.h.

008:465 Seminar: History, Literature, and American Culture 2 s.h.

Independent Study

008:500 Advanced Studies in an Author arr.

008:505 Advanced Studies in a Literary Period arr.

008:510 Advanced Studies in a Literary Form arr.

008:515 Advanced Studies in a Literary Genre arr.

008:520 Advanced Studies in a Literary Mode arr.

008:525 Advanced Studies in a Literary Movement arr.

008:530 Advanced Studies in a Literary Theme arr.


008:550 Advanced Studies in an Interdisciplinary Subject arr.

008:585 M.A. Thesis in Literary Studies arr.  
008:590 Special Project for Graduate Students arr.  

linguistics and language

08L:100 Introduction to Linguistics 3 s.h.
Same as 103:100.

08L:120 Historical and Comparative Linguistics 3 s.h.
Same as 103:120.

08L:131 History of the English Language Same as 103:131.

08L:132 Elementary Old English Same as 103:132.

Professional Training

Only undergraduates with special permission may take 08P:020 and 08P:021. Neither course counts for credit toward an English major or minor.

08P:020 Academic Seminar I Same as 07S:020.

08P:021 Academic Seminar II Same as 07S:021.

The following courses offer theoretical and practical training for those who plan to teach.

08P:182 Language and Learning 2-3 s.h.
Same as 07E:182, 07S:182.

08P:190 Methods English 3 s.h.
Same as 07S:115.

08P:198 Teaching Literature to Adolescents 3 s.h.
Same as 07S:193.

08P:204 Literature for Children II 3 s.h.
Analysis, selection of current literature for programs in a variety of settings; appropriate methods, research techniques, multimedia approaches to promote pleasure and insight through prose, poetry. Same as 07E:204, 07S:204.

08P:300 Methods in Literacy Research 3 s.h.
Same as 07E:370, 07S:370.

08P:405 M.A. Seminar: English Education 3 s.h.
Same as 07S:315.


Historical and recent research and theory in literacy education. May be repeated. Consent of instructor required. Same as 07E:415, 07S:415.

Nonfiction Writing

The following courses may be repeated:


Others may be repeated with consent of both the instructor and either the director of undergraduate studies or the director of graduate studies.

Practice in Writing

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.

08N:014 Rhetorical Praxis 3 s.h.
Same as 010:014.

08N:015 Writing for Practical Purposes 2-3 s.h.
Practical approach to work-related writing; introduction to technical writing.

08N:050 Word Power: Building English Vocabulary 3 s.h.
Same as 020:050.

08N:080 Nonfiction Writing 3 s.h.

08N:102 Prose Style 3 s.h.

08N:104 Personal Writing 3 s.h.

08N:113 Writing for Business and Industry 3 s.h.

08N:120 Advanced Nonfiction Writing 3 s.h.

08N:125 Freelance Reporting and Writing Same as 019:125.

08N:130 Forms of Nonfiction 3 s.h.

08N:133 Advanced Writing for Business 3 s.h.

08N:135 Forms of the Essay 3 s.h.

08N:145 Multimedia Writing 3 s.h.

08N:150 Undergraduate Essay Workshop Consent of instructor required.

08N:155 Undergraduate Nonfiction Workshop Consent of instructor required.

08N:162 Electric Rhetorics Same as 010:162, 36C:162.

08N:196 Nonfiction Writing Internship arr.

08N:250 Forms of Nonfiction arr.

08N:255 Forms of the Essay arr.

08N:350 Essay Writing Workshop arr.

08N:355 Nonfiction Writing Workshop arr.

Theory and Practice of Writing

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.

08N:141 Approaches to Teaching Writing 3 s.h.

08N:190 Textual Editing 3 s.h.

08N:218 Writing Workshop for Teachers 2 s.h.

08N:237 Style and Voice 3 s.h.

08N:243 Colloquium in the Teaching of Writing 2 s.h.

08N:244 Colloquium: Free-Lance Writing and Publishing 2 s.h.

08N:261 Readings in the Essay 3 s.h.

08N:262 Readings in Nonfiction 3 s.h.

08N:345 Research on Writing 3 s.h.

08N:375 Teaching in a Writing Center Same as 010:375.

08N:404 Seminar: Contemporary Rhetorical Theory 2-4 s.h.

Independent Study

08N:199 Undergraduate Project in Nonfiction Writing arr.

08N:550 Special Project in Nonfiction Writing arr.

08N:560 Special Project in Teaching of Writing arr.

08N:580 Thesis in Nonfiction Writing arr.
Creative Writing
All may be repeated except 08C:001.

General Education
08C:001 Creative Writing Studio Workshop 3 s.h.
Reading and writing fiction, poetry, creative nonfiction. GE: fine arts or humanities.

General Interest
Practice in elements and forms of creative writing.
08C:023 Creative Writing 3 s.h.
08C:151 Fiction Writing 3 s.h.
08C:152 Poetry Writing 3 s.h.

Workshops and Seminars
Open only to Writers’ Workshop students or to others with consent of instructor.
08C:163 Undergraduate Writers’ Workshop: Fiction arr.
08C:166 Undergraduate Writers’ Workshop: Poetry arr.
08C:251 Fiction Workshop 3 s.h.
08C:252 Poetry Workshop arr.
08C:270 Form of Fiction 3 s.h.
08C:275 Form of Poetry 3 s.h.
08C:490 Seminar: Problems in Modern Fiction arc.
08C:495 Seminar: Problems in Modern Poetry arr.

Independent Study
08C:195 Undergraduate Project in Creative writing arr.
08C:555 Graduate Project in Creative Writing arr.
08C:590 M.F.A. Thesis arr.

Translation Studies
08W:079 Undergraduate Translation Workshop 3 s.h.
Same as 048:079.
08W:260 Translation Workshop 3 s.h.
Same as 048:260.
08W:265 Issues in the History of Translation 3 s.h.
Same as 048:270.
08W:497 Words and Music 3 s.h.

Environmental Sciences
Director: Stephen D. Hendrix
Committee: Vicki H. Grassman (Chemistry), Steven B. Heard (Biological Sciences), David L. McGinnis (Geography), Luis A. González (Geosciences), Frank H. Weirich (Geosciences)
Undergraduate degree: B.S. in Environmental Sciences
Web site: http://www.env-science.uiowa.edu

The Environmental Sciences Program provides strong and rigorous interdisciplinary training in the scientific aspects of environmental study. Because it promotes the understanding of Earth as a complex network of interacting organic and inorganic systems, the program demands that students acquire a solid foundation of knowledge in the sciences. It also requires that they attain a thorough grounding in mathematics so that they will have the basic tools to use scientific data necessary for understanding earth systems.

The program draws on the diversity in the broad field of environmental sciences and the disciplinary strengths of the College of Liberal Arts to offer four tracks: geosciences, biosciences, chemical sciences, and hydrosciences. Each track focuses on an aspect of environmental sciences, with the aim of preparing scientists to tackle problems whose solutions require particular areas of expertise: geosciences track-earth materials and surficial geologic processes; hydrosciences track-hydrogeology and hydrogeologic systems, and water chemistry; chemical sciences track-environmental systems and chemistry; and the biosciences track-biological systems and ecological approaches.

Students are assigned an adviser who specializes in their track.

Bachelor of Science
Students majoring in environmental sciences must complete requirements in three areas: a science and mathematics foundation that provides the basic comprehension students need to complete the rigorous degree requirements; an earth systems foundation that develops students' comprehensive knowledge of earth surface physical and biotic systems as well as the skills they will need for employment or future graduate/professional work; and one of the three tracks providing a focus in one area of environmental science. Students also must complete all General Education Program requirements of the College of Liberal Arts, many of which can be satisfied with courses that are required for the major.

SCIENCE AND MATHEMATICS FOUNDATION

Students must complete at least 34 semester hours of course work in this area, including the following.
002:010-011 Principles of Biology I-II 8 s.h.
004:013-014 Principles of Chemistry I-II 6 s.h.
004:016 Principles of Chemistry Lab 2 s.h.
012:005 Introduction to Geology 4 s.h.

22M:021-022 Calculus and Modeling I-II 8 s.h.
or
22M:025-026 Calculus I-II 8 s.h.
22S:039 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
or
22S:102 Introduction to Statistical Methods 3 s.h.
044:019 Contemporary Environmental Issues 3 s.h.
or
An approved environmental policy or issues course

EARTH SCIENCES FOUNDATION
All environmental sciences majors must complete the following earth systems courses.
159:008 Introduction to Environmental Science 3 s.h.
159:010 Environmental Seminar I 0 s.h.
159:011 Environmental Seminar II 0 s.h.
159:100 Environmental Seminar III 0 s.h.
159:101 Environmental Seminar IV 0 s.h.
159:102 Earth Surface Processes 3 s.h.
159:110 Introduction to Applied Remote Sensing 4 s.h.
159:134 Ecology 4 s.h.
159:153 Geocomputing (or equivalent applied computation course) 3 s.h.

Tracks
All environmental sciences majors must choose one of the four tracks in the major. Each track requires additional general sciences courses, track foundation courses, field courses, and electives.

ENIRONMENTAL GEOSCIENCES (BROWN) TRACK
The environmental geosciences track provides training for entry-level positions that require a basic understanding of geological principles and a working knowledge of basic geologic concepts applied in the environmental industry. It also lays a strong foundation for graduate study in environmental geology, engineering geology, and natural hazards assessment. The environmental geosciences track requires 38 semester hours.

General Science
029:008 Basic Physics 4 s.h.

Students are strongly encouraged to take additional work in physics.

Environmental Geosciences Foundation
012:041 Mineralogy 4 s.h.
012:052 Petrology 4 s.h.
012:092 Structural Geology 4 s.h.
012:136 Soil Genesis and Geomorphology 3 s.h.
012:179 Engineering Geology 3 s.h.

Environmental Geosciences Field Study
012:093 Geologic Field Methods 2 s.h.
012:195 Field Methods: Environmental Processes 2-4 s.h.
012:197 Environmental Field Sampling I 1 s.h.
012:198 Environmental Field Sampling II 1 s.h.
Environmental Geosciences Electives
At least 9 semester hours from these:
*06E:133 Environmental and Natural Resource Economics 3 s.h.
012:114 Energy and the Environment 3 s.h.
012:143 Environmental Mineralogy 3 s.h.
012:149 Elements of Geochemistry 3 s.h.
012:150 Natural Water Geochemistry 3 s.h.
012:152 Isotope Geochemistry 3 s.h.
012:161 Advanced Stratigraphy 3 s.h.
012:166 Hydrogeology 3 s.h.
012:172 Glacial and Pleistocene Geology 3 s.h.
012:178 Geostatistics Seminar 3 s.h.
012:180 Principles of Geophysics 3 s.h.
012:181 Exploration Geophysics 3 s.h.
012:184 Groundwater Modeling 3 s.h.
012:191 Geoecotones 3 s.h.
044:101 Climatology 3 s.h.
*044:121 Natural Resources Policy 3 s.h.
*044:122 Environmental Conservation in the United States 3 s.h.
*044:125 Environmental Impact Analysis 4 s.h.
044:126 Wetlands: Function, Geography, and Management 3 s.h.
044:129 Water Resources Management 3 s.h.
053:071 Principles of Hydraulics 3 s.h.
053:150 Environmental Engineering: Natural Systems 4 s.h.
053:152 Environmental Chemistry I 3 s.h.
053:153 Environmental Chemistry Laboratory 3 s.h.
053:154 Environmental Microbiology 3 s.h.
053:179 Hydroclimatology 3 s.h.
*No more than one of these may be included in the 9 semester hours.

ENVIRONMENTAL HYDROSCIENCES (BLUE) TRACK
The environmental hydrosciences track provides training 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. It also provides a strong foundation for graduate or professional training in environmental chemistry. The environmental hydrosciences track requires 37 semester hours.

ENVIRONMENTAL CHEMICAL SCIENCES (YELLOW) TRACK
The environmental chemical sciences track provides training 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. It also provides a strong foundation for graduate or professional training in environmental chemistry. The environmental chemical sciences track requires 38 semester hours.

ENVIRONMENTAL BIOSCIENCES (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. It also provides a strong foundation for graduate or professional training in disciplines such as ecology, wildlife management, and natural resource management. The environmental biosciences track requires 36-37 semester hours.

General Science
004:121 Organic Chemistry I 3 s.h.

Students are encouraged to take at least one semester of physics.

Environmental Biosciences Foundation
002:128 Fundamental Genetics 4 s.h.
002:131 Evolution 4 s.h.

At least 7 semester hours from these:
00L:102 Plant-Animal Interactions 3 s.h.
00L:105 Plant Taxonomy 4 s.h.
00L:115 Field Mycology 4 s.h.
00L:117 Ecology and Systematics of Diatoms 4 s.h.
00L:128 Fish Ecology 4 s.h.
00L:129 Vertebrate Ecology 4 s.h.
002:100 Plant Diversity and Evolution 4 s.h.
002:106 Field Bryology-Lichenology 4 s.h.
002:107 Invertebrate Biology 4 s.h.
002:108 Vertebrate Zoology 4 s.h.
002:119 Plant-Animal Interactions 3 s.h.
002:140 Systematics 2-3 s.h.

Environmental Biosciences Field Study
The minimum requirement is 7 semester hours, with at least 3 semester hours from the field methods courses.

Field methods:
00L:103 Aquatic Ecology 4 s.h.
00L:121 Plant Ecology 4 s.h.
00L:122 Prairie Ecology 4 s.h.
00L:163 Conservation Biology 4 s.h.
002:106 Field Bryology-Lichenology 4 s.h.
002:116 Field Ecology 4 s.h.

Field organismal courses:
00L:102 Plant-Animal Interactions 3 s.h.
00L:105 Plant Taxonomy 4 s.h.
00L:115 Field Mycology 4 s.h.
00L:117 Ecology and Systematics of Diatoms 4 s.h.
00L:128 Fish Ecology 4 s.h.
00L:129 Vertebrate Ecology 4 s.h.
002:119 Plant-Animal Interactions 3 s.h.
Environmental Biosciences Electives

The minimum requirement is 9 semester hours, with at least 6 semester hours from the following (3 semester hours may be chosen from the field methods or field organismal courses).

- 002:103 (044:103) Biogeography 2-3 s.h.
- 002:113 Ecological Plant Anatomy 4 s.h.
- 002:121 (012:128) Quaternary Palynology and Paleobotany 4 s.h.
- 002:124 Animal Physiology 4 s.h.
- 002:143 Animal Behavior 3 s.h.
- 002:199 Introduction to Research (may be repeated) 2 s.h.
- 002:233 Seminar: Ecology 2-3 s.h.
- 004:111 Analytical Chemistry I 3 s.h.
- 004:112 Analytical Chemistry II 3 s.h.
- *06E:135 Environmental and Natural Resource Economics 3 s.h.
- 012:108 Introduction to Oceanography 2 s.h.
- 012:121 Principles of Paleontology 3 s.h.
- 012:173 Quaternary Environments 3 s.h.
- 22S:148 Intermediate Statistical Methods 3 s.h.
- 044:101 Climatology 3 s.h.
- *044:121 Natural Resources Policy 3 s.h.
- *044:122 Environmental Conservation in the United States 3 s.h.
- 044:123 Landscape Ecology 3 s.h.
- *044:125 Environmental Impact Analysis 3 s.h.
- 044:126 Wetlands: Function, Geography, and Management 3 s.h.

*Only one policy course may be included in the 6 semester hours.

Honors

Environmental sciences students who wish to graduate with honors must be members of the University Honors Program. Honors students must maintain a cumulative grade-point average of 3.20 or higher in order to remain in the program. Contact the University Honors Program for more information.

Honors requirements for the B.S. in environmental sciences include a research project that culminates in an honors thesis. Students should join the honors program early to ensure that they have adequate time to complete the research project.

Before beginning the research, students must find a faculty research sponsor from one of the environmental sciences’ four participating departments (biological sciences, chemistry, geography, and geoscience). Honors students usually spend two or more semesters working on the research under the guidance of their faculty research sponsor, with enrollment in 002:196, 004:162, 012:119, or 044:195. Then they write an honors thesis based on the research. The thesis must be submitted before classes end in the student’s last semester before graduation.

Students work with their faculty research sponsor to determine the format, length, and content of the honors thesis as well as the number of semester hours the student will earn for the honors research.

Students must notify the environmental sciences honors advisor of their intent to graduate with honors by the eighth week of the semester before they graduate.

Courses

159:000 Cooperative Education Internship 0 s.h.
Offered only R/W. Open only 2.50 grade-point average and consent of instructor required.

159:008 Introduction to Environmental Science 3 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. Same as 012:008.

159:010 Environmental Seminar I 1 s.h.
Role of science in environmental issues and problems; progression from observation through evaluation to design of better questions and experimentation. First in a four-course series. Open only to environmental science majors.

159:011 Environmental Seminar II 0 s.h.
Second in a four-course series. Open only to environmental science majors.

159:012 Environmental Seminar III 0 s.h.
Third in a four-course series. Open only to environmental science majors.

159:013 Environmental Seminar IV 0 s.h.
Fourth in a four-course series. Open only to environmental science majors.

159:120 Earth Surface Processes 3 s.h.
Basic geomorphic, environmental processes that shape the earth’s surface; emphasis on weathering, mass movement (creep, landslides, earth flow), erosion, transport, deposition by fluid agents (wind, water, ice); methods used to study these processes. Prerequisite: 012:005 or 012:008 or 044:003 or 159:008 or consent of instructor. Same as 012:120.

159:110 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 ultraviolet, visible, infrared, microwave radiation; remote sensing applied to geologic and environmental problems. Same as 012:110.

159:134 Ecology 4 s.h.
Adaptations of organisms to their physical, biological environments; organism-environment interactions; population biology; interactions between species; ecology of communities, ecosystems; human impact on ecosystems. Open only to environmental science majors. Prerequisites: 002:010 and 002:011, and 22M:001 or 22M:005. Same as 002:134.

159:153 Geocomputing 1-3 s.h.
Computer applications in geography; visualization, data management, interactive modeling, computer graphics. Same as 012:153.

EXERCISE SCIENCE

Chair: Jerry A. Maynard
Professors: Richard Brand (Orthopaedic Surgery), Carl V. Giolli, Jerry A. Maynard, Kenneth E. Mohily (Health, Leisure, and Sport Studies), Eugene Spaziani (Biology)

Professors emeriti: Gene M. Asgrey, Donald R. Casady, James G. Hay

Associate professors: Kelly J. Cole, Warren G. Darling, Kevin C. Kregel

Associate professors emeriti: Gary F. Hansen, N. Richard Horazepf, David K. Leslie

Assistant professor: Don D. Sheriff

Lecturer: Danny T. Foster

Undergraduate degree: B.S. in Exercise Science

Graduate degrees: M.S., Ph.D. in Exercise Science

The Department of Exercise Science offers the Bachelor of Science in Exercise Science. The graduate program includes the Master of Science without thesis, the Master of Science with thesis, and the Ph.D. Students may choose from five different areas of specialization for the M.S. with thesis and from four for the Ph.D.

Undergraduate Programs

Bachelor of Science in Exercise Science

The Bachelor of Science degree program provides preparation for continuing education at the graduate level in exercise science; the health professions, including medicine, dentistry, optometry, physician assistant, physical therapy, and podiatry; and athletic training. It also prepares students for careers in athletic training or exercise science.

The exercise science major includes study in anatomy, biomechanics, exercise physiology, motor control, and athletic training. The first four areas of study are designed primarily for students who intend to pursue advanced degrees in an exercise science specialization or to seek admittance to a professional program in the health sciences (e.g., medicine, dentistry, optometry, physical therapy, physician assistant, or podiatry).

Athletic training is a separate degree track in exercise science; it incorporates an extensive clinical component.

Qualifications for admission to exercise science include completion of the following courses, with a grade-point average of 3.00 or higher.

- 002:010 Principles of Biology I 4 s.h.
- 004:013 Principles of Chemistry I 3 s.h.
- 22M:016 Calculus for the Biological Sciences 4 s.h.
- 22M:021 Calculus and Modeling I 4 s.h.
- 22M:025 Calculus I 4 s.h.
- 22M:035 Engineering Calculus I (or a more advanced calculus course) 4 s.h.
- 010:001-002 Rhetoric I-II 8 s.h.
- 010:003 Accelerated Rhetoric 4 s.h.

Students also must have maintained a grade-point average of 2.75 or higher in all course work taken at The University of Iowa.

Criteria for admission to the athletic training program are described under that heading. Students denied admission to either program may reapply in a subsequent semester.

GENERAL EDUCATION COURSES

The department recommends that candidates for the B.S. degree in exercise science satisfy the College of Liberal Arts General Education Program requirement in natural sciences by taking 004:013-014 Principles of Chemistry I-II and 002:010 Principles of Biology I. It also recommends satisfaction of the General Education Program requirement in social sciences with 031:001 Elementary Psychology. Transfer credit for course work in the major requires the approval of the undergraduate academic advisor.
EXERCISE SCIENCE REQUIREMENTS

Students must earn at least 20 semester hours.

All of these:

- 027:141 Exercise Physiology 3 s.h.
- 027:142 Exercise Physiology Laboratory 2 s.h.
- 027:150 Gross Anatomy for Exercise Science 2 s.h.
- 027:151 Gross Anatomy Lab for Exercise Science 2 s.h.
- 027:160 Motor Control I: Neuropsychological Basis 3 s.h.
- 029:111-012 Exercise Physiology I-II 8 s.h.
- 029:117-018 Motor Control I 8 s.h.

At least 4 approved courses in biomechanics

At least two of these:
- 027:096 Special Projects 3 s.h.
- 027:107 Introduction to Biomechanics 3 s.h.
- 027:117 Human Growth and Motor Development 3 s.h.
- 027:145 Cardiovascular Physiology 3 s.h.
- 027:153 Embryology and Connective Tissue Anatomy 2 s.h.
- 027:155 Skeletal Muscle Biology 3 s.h.
- 027:157 The Qualitative Analysis of Human Motion 3 s.h.
- 027:196 Exercise Science Senior Seminar 3 s.h.
- 027:200 Problems arr.

REQUIREMENTS IN OTHER SUBJECTS (COGNATES)

Biology, chemistry, and mathematics listings include courses that are prerequisites.

**Biology**

Total of at least 12 semester hours

002:010-002:011 Principles of Biology I-II 8 s.h.

At least 4 semester hours chosen from these:

- 002:114 Cell Biology 3 s.h.
- 002:108 Vertebrate Zoology 4 s.h.
- 002:124 Animal Physiology 3 s.h.
- 002:128 Fundamental Genetics 4 s.h.
- 002:143 Animal Behavior 4 s.h.
- 002:150 Endocrinology 3 s.h.
- 002:152 Endocrinology Laboratory 2 s.h.
- 002:155 Cell Physiology 4 s.h.
- 002:180 Fundamental Neuroscience 4 s.h.
- 002:181 Neurophysiology 3 s.h.
- 061:157 General Microbiology 5 s.h.
- 099:110 Biochemistry 3 s.h.

**Chemistry**

All of these (8 semester hours):

004:013-014 Principles of Chemistry I-II 6 s.h.

004:016 Principles of Chemistry Lab 2 s.h.

These additional courses are highly recommended.

- 004:121 Organic Chemistry I 3 s.h.
- 004:122 Organic Chemistry II 3 s.h.
- 004:141 Organic Chemistry Laboratory 3 s.h.

**Computer Science**

At least 3 semester hours chosen from these:

- 06K:070 Computer Analysis 3 s.h.
- 22C:005 Problem Solving and Computing 3 s.h.
- 22C:010 Programming With C 3 s.h.
- 22C:016 Computer Science I 4 s.h.
- 057:017 Computers in Engineering 3 s.h.

**Mathematics**

At least 4 semester hours chosen from these:

- 22M:016 Calculus for the Biological Sciences 4 s.h.
- 22M:021 Calculus and Modeling I 4 s.h.
- 22M:025 Calculus I 4 s.h.
- 22M:035 Engineering Calculus I 4 s.h.

A more advanced calculus course

**Physics**

Either of these two-semester sequences:

- 029:011-012 College Physics I-II 8 s.h.
- 029:017-018 Introductory Physics I-II 8 s.h.

**Statistics**

At least 3 semester hours chosen from these:

- 07P:143 Introduction to Statistical Methods 3 s.h.
- 228:101 Biostatistics 3 s.h.
- 228:102 Introduction to Statistical Methods 3 s.h.
- 063:161 Introduction to Biostatistics 3 s.h.

**RECOMMENDED ELECTIVES**

It is recommended that students choose from the following electives in order to complete the 124 semester hours required for a B.S. degree in the College of Liberal Arts. Courses in biology and chemistry are also listed above under “Requirements in Other Subjects (Cognates).”

**Anthropology**

- 113:190 Human Osteology 3 s.h.

**Biochemistry**

- 099:110 Biochemistry 3 s.h.
- 099:120 Biochemistry and Molecular Biology I 3 s.h.
- 099:130 Biochemistry and Molecular Biology II 3 s.h.
- 099:140 Experimental Biochemistry 4 s.h.

**Biology**

- 002:108 Vertebrate Zoology 4 s.h.
- 002:114 Cell Biology 3 s.h.
- 002:124 Animal Physiology 3 s.h.
- 002:128 Fundamental Genetics 4 s.h.
- 002:143 Animal Behavior 4 s.h.
- 002:150 Endocrinology 3 s.h.
- 002:152 Endocrinology Laboratory 2 s.h.
- 002:155 Cell Physiology 4 s.h.
- 002:180 Fundamental Neuroscience 4 s.h.
- 002:181 Neurophysiology 3 s.h.

**Chemistry**

- 004:111 Analytical Chemistry I 3 s.h.
- 004:112 Analytical Chemistry II 3 s.h.
- 004:121 Organic Chemistry I 3 s.h.
- 004:122 Organic Chemistry II 3 s.h.
- 004:131 Physical Chemistry 3 s.h.
- 004:141 Organic Chemistry Laboratory 3 s.h.

**Classics**

- 020:050 Word Power: Building English Vocabulary 3 s.h.
- 020:103 Medical and Technical Terminology 2 s.h.

**Education**

- 101:105 Introduction to Substance Abuse 3 s.h.

**Engineering**

- 057:007 Statics 2 s.h.
- 057:010 Dynamics 3 s.h.
- 057:019 Mechanics of Deformable Bodies 3 s.h.

**English**

- 08N:015 Writing for Practical Purposes 2-3 s.h.
- 08N:050 Word Power: Building English Vocabulary 3 s.h.
- 08N:080 Nonfiction Writing 3 s.h.

**Health, Leisure, and Sport Studies**

- 028:138 Exercise Testing and Prescription 4 s.h.

**Microbiology**

- 061:157 General Microbiology 5 s.h.

**Pharmacology**

- 071:120 Drugs: Their Nature, Action, and Use 2 s.h.
- 071:130 Intermediate Pharmacology 3 s.h.

**Psychology**

- 031:120 Experimental Psychology I 3 s.h.
- 031:126 Behavioral Neuroscience 3 s.h.
- 031:128 Psychopharmacology 3 s.h.
- 031:129 Neurobiology of Learning and Memory 3 s.h.
- 031:152 Health Psychology 3 s.h.
- 031:163 Abnormal Psychology 3 s.h.
- 031:173 Substance Use and Misuse in America 3 s.h.

**Radiation Biology**

- 077:103 Introduction to Radiation Biology 4 s.h.

**Speech Pathology and Audiology**

- 003:116 Basic Neuroscience for Speech and Hearing 3 s.h.
- 003:140 Manual Communication 1 s.h.

**Athletic Training Program**

The athletic training program provides concentrated studies and clinical experiences leading to national certification in athletic training. Employment opportunities for graduates include serving as health care professionals for sports medicine clinics and hospitals. Additional education is usually required for employment with professional teams as well as university, college, and secondary school athletic teams. Teacher certification is recommended but not required.

Students who have not formally contacted the athletic training program director before enrolling at The University of Iowa should talk to an athletic training adviser or their college adviser upon entering the University. Early advising should be sought for course counseling. A prerequisite biology course and clinical
observation must be completed or in progress by the time admission decisions are made in spring semester.

College of Liberal Arts students may be admitted into the program and begin clinical experience as sophomores. To be considered for admission, students must begin the application process in the fall semester; complete, or be in the process of completing, prerequisite course work in biology during spring semester; complete a prospective student orientation program, usually in fall semester; and maintain a grade-point average of 2.50 or higher. All prerequisites and required courses must be completed with a grade of C or higher.

Program requirements include the following.
- 07C:178 Microcounseling 1 s.h.
- or Comparable course
- 027:107 Introduction to Biomechanics 3 s.h.
- 027:130 Human Physiology 3 s.h.
- 027:140 Exercise Physiology for Practitioners 3 s.h.
- or 027:141 Exercise Physiology 3 s.h.
- 027:160 Motor Control I: Neurophysiological Basis 3 s.h.
- 027:171 Administration of Athletic Training Programs 3 s.h.
- 027:172 Clinical Sciences I 2 s.h.
- 027:173 Clinical Sciences II 1 s.h.
- 027:182 Clinical Sciences III 3 s.h.
- 027:183 Clinical Sciences IV 3 s.h.
- 027:184 Seminar in Athletic Training 6 s.h.
- 027:185 Clinical Sciences V 2 s.h.
- 027:253 Advanced Human Anatomy 6 s.h.
- 028:130 Human Nutrition (or equivalent) 3 s.h.
- 071:120 Drugs: Their Nature, Action, and Use (or equivalent) 2 s.h.
- An advanced emergency care course or certification arr.

*Enrollment is limited to students formally admitted to the athletic training program.

**Exercise Science**

The program leading to the M.S. without thesis is a terminal unit of advanced study for athletic trainers.

**Athletic Training Program**

The nonthesis program in athletic training is designed primarily as an advanced area of study in clinical education and research for the certified athletic trainer. Emphasis is on developing and applying a research and education base to the knowledge and skills of the entry-level athletic trainer. The program focuses on a health care team approach to sports medicine, professional preparation, and sports epidemiology. The following undergraduate course work (total of 30 semester hours) is required background for the nonthesis M.S. program in athletic training. Students must maintain a grade-point average of 3.00 for the 30 semester hours.

**Graduate Programs**

**Master of Science without Thesis**

The program leading to the M.S. without thesis is a terminal unit of advanced study for athletic trainers.

**Athletic Training Program**

The nonthesis program in athletic training is designed primarily as an advanced area of study in clinical education and research for the certified athletic trainer. Emphasis is on developing and applying a research and education base to the knowledge and skills of the entry-level athletic trainer. The program focuses on a health care team approach to sports medicine, professional preparation, and sports epidemiology. The following undergraduate course work (total of 30 semester hours) is required background for the nonthesis M.S. program in athletic training. Students must maintain a grade-point average of 3.00 for the 30 semester hours.

Anatomy:
- Human anatomy (minimum requirement) 3 s.h.
- Human physiology 3 s.h.

Athletic training core:
- Prevention 3 s.h.
- Evaluation and recognition 3 s.h.
- Modalities and rehabilitation 3 s.h.
- Administration 2 s.h.
- Exercise science core:
  - Neural control 3 s.h.
  - Exercise physiology 3 s.h.
  - Biomechanics 3 s.h.
- Electives in related areas 3-4 s.h.

Current emergency certifications
- NATA certification or eligibility

**Exercise Science**

- Three of these: 027:141 Exercise Physiology 3 s.h.
- 027:153 Embryology and Connective Tissue Anatomy 2 s.h.
- 027:155 Skeletal Muscle Biology 3 s.h.
- 027:160 Motor Control I: Neurophysiological Basis 3 s.h.
- 027:197 Biomechanics of Human Motion 4 s.h.

**Clinical Research Tools**

- 07P:243 (22S:148) Intermediate Statistical Methods 3 s.h.
- An approved tools or special interest area course 2-4 s.h.

**Athletic Training**

- 027:184 Seminar in Athletic Training (two registrations) 4 s.h.
- 027:200 Problems (two registrations) 4 s.h.
- 027:202 Practicum in College Teaching 3 s.h.
- 027:301 Non-Thesis Seminar 2 s.h.

One of these:
- 07W:120 Introduction to Instructional Design 3 s.h.
- 063:158 Principles of Epidemiology 3 s.h.
- 069:133 Introduction to Human Pathology 3 s.h.

**Electives**

Maximum of 4 semester hours

**Master of Science with Thesis**

The thesis program leading to the M.S. in exercise science is designed primarily as a first step in graduate study leading to the Doctor of Philosophy. As such, it is a research-oriented program that introduces students to the nature and quality of research in exercise science and gives them an opportunity to specialize in an area of interest. The five areas of specialization leading to the M.S. degree with thesis are anatomy, athletic training, biomechanics, exercise physiology, and motor control.

Because the M.S. with thesis is regarded as the first step toward the Ph.D. degree in one of five areas of specialization, the undergraduate prerequisite courses required depend on the area in which the candidate intends to specialize for doctoral study. Specific courses in mathematics, chemistry, physics, biology, physiology, or psychology are required in some areas of specialization. These courses must be approved by the M.S. adviser and the professor in charge of the emphasis area selected by the candidate.
The following courses (total of 30 semester hours) are required for the M.S. with thesis.

Courses Outside Specialization Area

Two of these:

- 027:141 Exercise Physiology
- 027:142 Exercise Physiology Laboratory (not for students specializing in physiology) 5 s.h.
- 027:160 Motor Control I: Neurophysiological Basis (not for students specializing in motor control) 3 s.h.

An approved course in biomechanics or biomechanics (for students specializing in biomechanics)

- 027:153 Embryology and Connective Tissue Anatomy 2 s.h.
- 027:155 Skeletal Muscle Biology 3 s.h.
- 027:253 Advanced Human Anatomy 6 s.h.
- 225:102 Introduction to Statistical Methods 3 s.h.
- 063:161 Introduction to Biostatistics 3 s.h.

An approved graduate-level course in computer science 2.4 s.h.

Specialization Area Courses

- 027:404 Thesis: M.S. 4 s.h.
- Electives 5-6 s.h.

Doctor of Philosophy

Admission

Admission to the Ph.D. program is based on the applicant’s grade-point average on work completed for the M.A. or M.S. and on his or her score on the Graduate Record Examination (GRE) General Test. To be considered for admission, applicants must have earned a grade-point average of 3.00 or higher on all graduate work.

Deadlines for admission applications are October 15, March 15, and May 15; notification is made approximately two months after the respective application deadline.

Requirements

Ph.D. candidates should have a general knowledge of all areas in exercise science, a working knowledge of research techniques applicable to problems in the field, and an in-depth knowledge in at least one area of specialization in exercise science.

The specialization areas are anatomy, biomechanics, exercise physiology, and motor control.

The thesis program for the M.S., together with the Ph.D. core courses, provide the background required for the Ph.D. candidate’s specialization. Candidates must complete a minimum of 72 semester hours beyond the B.A. or B.S. This must include the completion of a dissertation in the area of specialization. It is expected that an appropriate manuscript of the dissertation will be submitted to an approved refereed professional journal for publication.

Many of the courses in the specialization areas are offered by departments other than exercise science. Professors from these departments frequently serve on comprehensive examination committees and on dissertation committees for the initial presentation of the candidate’s prospectus. They also participate in the final oral examination.

GENERAL REQUIREMENTS

Ph.D. candidates must fulfill the following requirements.

- Completion of the M.A. or M.S. with thesis, or equivalent
- At least 10 semester hours of independent research, exclusive of the thesis requirement
- At least 72 semester hours of graduate credit beyond the B.A. or B.S. (typically more than 90 semester hours)

CORE COURSE REQUIREMENTS

Two approved courses in statistics

- 027:201 Research (minimum requirement) 10 s.h.
- 027:202 Practicum in College Teaching (minimum requirement) - 2 s.h.
- 027:405 Thesis: Ph.D. 12 s.h.

SCIENTIFIC AREA COURSES

In order to ensure that exercise science doctoral candidates obtain a breadth of knowledge over the key scientific areas that constitute the basis of the major, each student must complete at least one course in each of the areas of specialization. This requirement may be met by transfer credit if approved by the student’s adviser. The areas of specialization are anatomy, biomechanics, exercise physiology, and motor control.

QUALIFYING AND COMPREHENSIVE EXAMINATIONS

All Ph.D. candidates must pass an initial qualifying examination, which assesses their general background knowledge, before the third semester of graduate study (or before the fifth semester if the candidate entered with only a bachelor’s degree). Ph.D. candidates also must pass a comprehensive examination, which should be taken following the completion of the fourth semester of graduate study (sixth for students entering with only the bachelor’s degree). Candidates specializing in exercise physiology who wish to minor in physiology may write a separate comprehensive examination prepared and evaluated by faculty members of the Department of Physiology and Biophysics in the College of Medicine.

Specializations

Candidates are expected to obtain a broad knowledge base within their area of specialization. This normally entails approximately 30 semester hours of course work. Recommended courses for each area of specialization are as follows.

ANATOMY

- 002:128 Fundamental Genetics 4 s.h.
- 002:150 Endocrinology 3 s.h.
- 002:152 Endocrinology Laboratory 2 s.h.
- 027:153 Embryology and Connective Tissue Anatomy 2 s.h.
- 027:155 Skeletal Muscle Biology 3 s.h.
- 027:253 Advanced Human Anatomy 6 s.h.
- 060:205 General Histology for Graduate Students or equivalent 4 s.h.
- 060:234 Medical Neuroscience 4 s.h.
- 077:103 Introduction to Radiation Biology 4 s.h.
- 077:224 Radioisotopes in Biological Research 2 s.h.
- 099:110 Biochemistry 3 s.h.
- 099:120 Biochemistry and Molecular Biology I 3 s.h.
- 099:130 Biochemistry and Molecular Biology II 3 s.h.
- 101:295 Applied Electromyography 3 s.h.
- 142:220 Cell Biology I 3 s.h.
- 142:225 Cell Biology II 3 s.h.
- 003:219 Fundamentals of Laboratory Instrumentation 3 s.h.
- 01:212 Biomedical Instrumentation 4 s.h.

BIOMECHANICS

- 027:253 Advanced Human Anatomy 6 s.h.
- 057:019 Mechanics of Deformable Bodies 3 s.h.
- 057:020 Mechanics of Fluids and Transfer Processes 4 s.h.
- 057:021 Principles of Design I 3 s.h.
- 058:155 Intermediate Dynamics 3 s.h.
- 063:162 Design and Analysis of Experiments in the Biomedical Sciences 3 s.h.
- 101:212 Biomedical Instrumentation 4 s.h.
- 101:295 Applied Electromyography 3 s.h.

EXERCISE PHYSIOLOGY

- 002:150 Endocrinology 3 s.h.
- 002:152 Endocrinology Laboratory 2 s.h.
- 027:141 Exercise Physiology 3 s.h.
- 027:142 Exercise Physiology Laboratory 2 s.h.
- 027:145 Cardiovascular Physiology 3 s.h.
- 027:253 Advanced Human Anatomy 6 s.h.
- 027:274 Advanced Exercise Physiology arr.
- 027:275 Advanced Exercise Physiology arr.
- 027:276 Advanced Exercise Physiology arr.
- 050:240 Human Organ Systems 8 s.h.
- 060:205 General Histology for Graduate Students 4 s.h.
- 071:130 Intermediate Pharmacology 3 s.h.
- 072:164 Human Physiology for Physician Assistants 4 s.h.
- 072:234 Medical Neuroscience 4 s.h.
- 077:103 Introduction to Radiation Biology 4 s.h.
- 077:222 Free Radicals in Biology and Medicine 4 s.h.
- 077:224 Radioisotopes in Biological Research 2 s.h.
- 099:110 Biochemistry 3 s.h.
- 099:120 Biochemistry and Molecular Biology I 3 s.h.
- 099:130 Biochemistry and Molecular Biology II 3 s.h.

MOTOR CONTROL

- 002:180 Fundamental Neuroscience 4 s.h.
Skeletal Muscle Biology 3 s.h.
Motor Control I 3 s.h.
Advanced Human Anatomy 6 s.h.
Seminar in Motor Control 2 s.h.
Medical Neuroscience 4 s.h.
Biomedical Instrumentation 4 s.h.
Applied Electromyography 3 s.h.

Three courses chosen from the following areas: computer science, neuroscience, biomechanics, anatomy, exercise physiology

Facilities

Classroom and research laboratories for anatomy, biomechanics, exercise physiology, and motor control 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 departments facilitate specialization by allowing exercise science students to use additional special facilities and research equipment in other departments on campus (e.g., biology, biochemistry, orthopaedic surgery, internal medicine, pharmacology, physiology and biophysics, and the College of Engineering).

Courses

Primarily for Undergraduates

Cooperative Education Internship 0 s.h.
Human Anatomy 3 s.h.
First Aid and CPR 2 s.h.
Basic Athletic Training 3 s.h.
Special Projects arr.
Human Growth and Motor Development 3 s.h.

For Undergraduate and Graduate Students

Introduction to Biomechanics 3 s.h.
Human Physiology 3 s.h.
Organ system approach to physiology, with focus on normal function of the human body; information on all levels of integration, from subcellular to whole organism, with emphasis on how the intact organism functions. GE: natural sciences.

Exercise Physiology for Practitioners 3 s.h.
Effects of acute and chronic exercise on different physiological systems (energy, respiratory, circulatory, endocrine); fitness evaluation, weight-control strategies, training programs; preparation for ACSM Fitness Instructor Certification. Offered spring semesters and summer sessions. Recommended: a course in human physiology.

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. Prerequisite: 027:130 or 027:150 or equivalent

Exercise Physiology Laboratory 2 s.h.
Supplements 027:141: principles of scientific investigation used to demonstrate acute and chronic effects of exercise. Consent of instructor required.

Cardiovascular Physiology 3 s.h.
Structure and function of cardiovascular System; heart, microcirculation, hemodynamics, regional circulation, reflex integration, regulation during physical stress. Prerequisite: 027:130 or equivalent. Recommended: calculus and physics.

Anatomy 2 s.h.
Structure, growth, and development of connective, muscular, nervous tissues from embryologic to adult stages; specific joints, their structure and movements. Offered spring semesters.

Skeletal Muscle Biology 3 s.h.
Skeletal muscle structure, contractile mechanisms, production of movement, biomechanical properties; adaptation to increased use, disuse, injury. Offered spring semester.

The Qualitative Analysis of Human Motion 3 s.h.
Application of basic concepts in biomechanics to qualitative analysis of motor skills; analyses based on development of a deterministic model: observation of performance, identification of faults; establishment of priority among faults; instruction of the performer.

Motor Control I 3 s.h.
Neuroanatomical and neurophysiological bases of human motor control; mechanisms for locomotion and posture, head-eye coordination, control of arm and hand movements, role of sensory information. Offered spring semesters. Prerequisite: a course in human anatomy.

Administration of Athletic Training Programs 2-3 s.h.
Health care supervision, professional athletic training responsibilities, philosophies in athletic health care. Prerequisite: 027:057. Offered fall semesters.

Clinical Sciences I 2 s.h.
Theoretical knowledge base in therapeutic modalities. Open only to athletic training majors. Offered spring semesters.

Clinical Sciences II 1 s.h.
Pathology and evaluation, theory of sports-induced trauma. Open only to athletic training majors. Offered summer sessions.

Clinical Sciences III 3 s.h.
Theoretical and practical skill development in the areas of musculoskeletal evaluation. Open only to athletic training majors. Offered fall semesters. Prerequisite: 027:172.

Clinical Sciences IV 3 s.h.
Continuation of musculoskeletal evaluation, completion of EINST, chest, abdomen, and dermatologic evaluation, plus rehabilitation programs. Offered spring semesters. Prerequisite: 027:182.

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. Open only to athletic training majors. Prerequisite: 027:172. Corequisite: 027:182.

Exercise Science Colloquium 0 s.h.

Exercise Science Seminar 2.3 s.h.
Independent library or laboratory research in one of four areas of specialization (anatomy, biomechanics, exercise physiology, or motor control); oral and written presentation of results. Open only to exercise science majors. Offered fall and spring semesters.

Biomechanics of Human Motion 4 s.h.
Application of the principles of mechanics to investigation of human motion in two dimensions; vector and coordinate 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.

Primarily for Graduate Students

Problems Consent of instructor required.
Research Consent of instructor required.
Practicum in College Teaching Consent of instructor required.

Advanced Human Anatomy 6 s.h.
Offered summer sessions.

Seminar: Current Developments in Biomechanics 0 s.h.

Advanced Exercise Physiology arr.

Advanced Exercise Physiology arr.

Non-Thesis Seminar 2 s.h.
For candidates for the M.S. without thesis. Offered spring semesters.

Seminar in Motor Control 2 s.h.
Offered spring semesters.

Thesis M.S. 0-4 s.h.

Thesis Ph.D. arr.

FRENCH AND ITALIAN

Chair: Downing A. Thomas
Professors: Janet G. Altman, Jacques A. Bourgeacq, Wendelin Guentner, Steven Ungar
Associate professors: Cinzia Blum, Deborah L. Contrada, L. Kathy Heilman, Geoffrey R. Hope, Michel Laronde, Rosemarie Scullion, Downing A. Thomas
Assistant professor: Roland Racevskis
Undergraduate degrees: B.A. in French, Italian
Undergraduate nongrade programs: minor in French, Italian
Graduate degrees: M.A., Ph.D. in French
Web site: http://www.uiowa.edu/~frenchnit

Undergraduate Programs

The department introduces students to the cultures of France and Italy, provides an understanding of those countries’ historical and contemporary importance, and facilitates development of proficiency in the French and Italian languages. It also fosters critical appreciation of French, Francophone, and Italian literature and civilization.

Students choose from a variety of programs for majors in French and Italian and electives for nonmajors with prerequisite linguistic skills. They are afforded flexible means to meet the liberal arts General Education Program requirement in foreign language and to satisfy Individual needs and interests.

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 a foreign language is essential.

Bachelor of Arts in French

The undergraduate major in French may be completed with an emphasis on literature, culture and civilization, teaching, language, or interdisciplinary studies.

All majors must complete the following courses (total of 10 semester hours).

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>009:111 Introduction to Reading and Writing Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>009:112 Third-Year French Grammar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>009:126 French Conversation: Third Level</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>009:136 French Conversation: Fourth Level</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

Students must maintain a grade-point average of at least 2.00 in all major course work, including all University of Iowa course work in the major. Majors must maintain portfolios documenting their progress toward attaining the objectives of the French major. On the basis of materials in his or her portfolio, a student may petition the department to count a literature course toward the culture and civilization distribution requirement, or vice-versa.

Transfer course work is acceptable 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. All transfer work for application to the major is evaluated on an individual basis.

Upon declaring the major (or later, but before the senior year), students should choose an emphasis in one of the following five tracks.

Culture and Civilization Track

The culture and civilization track is designed for students interested in French history, politics, and culture. It is recommended for students who wish to combine studies in French with a major in another area, such as history, political science, pre-law, communications, or journalism.

Requirements for the culture and civilization track include the following courses in addition to the 10 semester hours of foundation course work in French. Only one of the courses may be taught in English under the French department prefix, such as 009:140, 009:141, 009:143, 009:144, 009:147, or 009:148.

- One or two courses in culture/civilization or language
- At least two of these courses must be numbered above 009: 150.

Teaching Track

French majors interested in obtaining licensure to teach in elementary and/or secondary schools must successfully complete the requirements for a major in French in the teaching track and must be admitted to the College of Education’s foreign language teacher education program (TEP). Several courses in the College of Education are required, as is one semester of student teaching. Contact the College of Education, Division of Curriculum and Instruction, for more information.

Requirements for the teaching track include the following courses in addition to the 10 semester hours of foundation course work in French. Only one of the courses may be taught in English under the French department prefix, such as 009:140, 009:141, 009:143, 009:144, 009:147, or 009:148. Two courses must be numbered above 009:150.

- Two courses in culture/civilization
- Two courses in literature
- Three courses from these areas:
  - culture/civilization, literature, pedagogy, or language

Students who plan to use a French minor to teach at the elementary and/or secondary level must contact the College of Education concerning requirements. See the College of Education section of the Catalog.

Interdisciplinary Track

The French interdisciplinary studies (FIS) track is designed for students with interests in French culture and in French historical, social, and cultural studies. It includes areas of French studies from a variety of fields, such as art history, comparative literature and film, francophone studies, history, linguistics, philosophy, music, and women’s studies.

Requirements for the FIS track include the following courses in addition to the 10 semester hours of foundation course work in French.

- Two courses in French culture/civilization, literature, or language taught in French 6 s.h.
- Five courses taught in French or English representing a coherent interdisciplinary focus in French studies (selection must be approved by student's adviser) 15 s.h.

Students are expected to write a paper on their particular interdisciplinary focus in one of their upper-level classes, for inclusion in their portfolio.

The following courses, offered by other departments, may be taken for the FIS track. Students may petition the department to count courses other than those listed toward fulfilling the major in this track.

Art and Art History

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>01H:162 Rodin and the Art of His Time</td>
<td>3 s.h.</td>
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</tbody>
</table>

History

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>16E:126 The French Revolutions and Human Rights</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16E:127 European History in Text and Film</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>16E:144 Modern France</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16E:146 France from 1815 to the Present</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16E:148 Society and Gender in Europe 1750-Present</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16E:161 Politics and Culture in Twentieth-Century Europe</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16W:121 African History since 1880</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Linguistics

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<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>103:110 Articulatory and Acoustic Phonetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>103: 111 Syntactic Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>103:112 Phonological Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>103: 153 Sociolinguistics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Philosophy

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>026: 158 Descartes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>026: 174 Sartre</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Political Science

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>030:176 French Politics and Society</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Bachelor of Arts in Italian

Requirements for the major in Italian total 31 semester hours, as follows.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>018:011-012 Intermediate Italian</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>018:111-112 Advanced Composition and Conversation</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>018:105 Modern Italian Fiction</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Teaching Licensure in Italian

Italian majors interested in licensure to teach in elementary and/or secondary schools must successfully complete the requirements for a major in Italian, including an additional 100-level course taught in Italian.

Elementary and Secondary Teaching Licensure in Italian

An additional 100-level course taught in Italian is required for students majoring in Italian who are interested in licensure to teach in elementary and/or secondary schools. Contact the College of Education's foreign language teacher education program for more information.

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. in French

Before the third semester begins: competence in first-year French and at least one-quarter of the semester hours required for graduation.

Before the fifth semester begins: second-year French (009:012) and at least one-half of the semester hours required for graduation.

Before the seventh semester begins: two semesters of third-year French (009:111-009:112), second-level French conversation (009:036), one or two other courses in the major, and at least three-quarters of the semester hours required for graduation.

Before the eighth semester begins: third-level French conversation (009:126), and three more courses in the major; for students in the French language track, 009:115 and 009:197.

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. in Italian

Before the third semester begins: competence in first-year Italian and at least one-quarter of the semester hours required for graduation.

Before the fifth semester begins: competence in second-year Italian (018:012) and at least one-half of the semester hours required for graduation.

Before the seventh semester begins: four courses numbered above 018:103 in the major and at least three-quarters of the semester hours required for graduation.

Before the eighth semester begins: a total of at least five courses numbered above 018:103 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

The department participates in the University Honors Program. To gain admission to honors in French or Italian, a student must have an overall grade-point average of at least 3.20 and a departmental grade-point average of at least 3.56, and must be enrolled in the University Honors Program. Students register for 009:198 (in French)/018:198 (in Italian) Honors Research and Thesis, and one course numbered above 009:160 in French or 018:103 in Italian and designated as an honors course. Students must complete an honors thesis or equivalent (for example, translation, comparative stylistics, cultural studies, or research paper) in French or Italian and must present their work to a faculty committee.

Minor in French

The requirements for a minor in French are 15 semester hours with a grade-point average of at least 2.00, with 12 semester hours taken at The University of Iowa in courses numbered 009:105 or above. Courses numbered in the 140S, 150-152, 158, and other courses taught in English do not count toward the minor in French.

Minor in Italian

The requirements for a minor in Italian are 15 semester hours with a grade-point average of at least 2.00, with 12 semester hours taken at The University of Iowa in courses numbered 018:105 or above.

Summer Program in France

The department cosponsors the Iowa Regents Summer Program in France for students enrolled in the three Board of Regents, State of Iowa, universities. Eligibility for the program requires a good basic knowledge of French (two years of college-level preparation is recommended), but students need not be French majors.

Centered in Lyon, the eight-week program combines formal class work in language skills, courses in the culture and civilization of France, and visits to points of cultural and historical interest. Students may earn 8 or 9 semester hours in the program.

Summer Program in Quebec

The department participates in the Committee on Institutional Cooperation (CIC) Summer French Program in Quebec at the Universite de Laval. The CIC is a nonprofit organization whose purpose is to foster cooperative educational opportunities among the Big Ten universities and the University of Chicago. Affiliated with the Cours d’ete pour non-francophones of the Universite de Laval, the program is designed to offer qualified students the opportunity to increase their command of French in a French-speaking environment and to introduce them to the heritage and cultural traditions of a unique and vital segment of North American culture. The minimum prerequisite is two semesters of French.

Foreign Language House

The French and Italian department maintains close connections with the Maison Francaise in the International Crossroads Community at Hillcrest Residence Hall. Residents initiate cultural and educational programs with the participation of the faculty and other students, providing a unique opportunity to combine living with language learning.

Language for Nonmajors

Nonmajors who wish to study French and who have a background in the language should take the French Foreign Language Placement Test, offered during summer orientation programs and monthly by Evaluation and Examination Service. The test helps determine the level at which a student should begin French language study at The University of Iowa.

Students without a background in French should begin with 009:001 Elementary French I.

Students who wish to satisfy the General Education Program’s foreign language requirement with French can choose from a number of course sequences. The following sequences satisfy the requirement:

009:001, 002, 011, 012
009:010, 011, 012

Nonmajors who wish to study Italian and who have a background in the language should consult with the department before the beginning of classes to determine the level at which they should begin Italian language study at The University of Iowa.

Students without a background in Italian should begin with 018:001.

Students who wish to satisfy the General Education Program’s foreign language requirement with Italian should complete the following course sequence: 018:001, 018:002, 018:011, and 018:012. Students with strong language-learning abilities or background in another romance language also could use the sequence 018:103, 018:011, and 018:012.
Graduate Programs

The department offers courses leading to the Master of Arts and the Doctor of Philosophy in French.

The faculty’s expertise allows for 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.

Emphasis on language proficiency, composition, and stylistics remains integral to the M.A. program. Along with the literature-centered M.A., the department offers an M.A. in French education.

For more detailed information on graduate degrees in French, consult the department’s web site. The department also publishes a Graduate Guide.

Master of Arts in French without Thesis

Candidates must earn a minimum of 30 semester hours of graduate credit and pass a written and oral examination. The program must include the following:

009:209 Advanced Grammar and Lexicology 3 s.h.
009:210 Comparative Stylistics 3 s.h.
At least four graduate-level literature or culture courses numbered 200 and above

With permission of the director of graduate studies and the department chair, candidates may take up to 6 of the required 30 semester hours outside the department or transfer up to 6 semester hours of course work taken at another institution.

Master of Arts in French with Thesis

Candidates must earn a minimum of 30 semester hours of graduate credit and take a written and oral examination on their areas of study. They also must defend the thesis at the time of the comprehensive examination. The program must include the following:

009:209 Advanced Grammar and Lexicology 3 s.h.
009:210 Comparative Stylistics 3 s.h.
At least four graduate-level literature or culture courses numbered 200 and above

Candidates may earn up to 6 of the required 30 semester hours for thesis work.

A thesis prospectus must be accepted one year before the thesis is defended.

Master of Arts in French Education

This program is intended primarily for prospective secondary school and junior college teachers. It is administered through the College of Education. Requirements include a total of 38 semester hours of graduate credit in French. The program must include the following:

009:209 Advanced Grammar and Lexicology 3 s.h.
009:210 Comparative Stylistics 3 s.h.
009:234 Principles of Teaching and Learning Foreign Languages 3 s.h.
Courses in French literature numbered 200 and above (minimum requirement) 9 s.h.

Candidates must pass a final written and oral examination.

Doctor of Philosophy in French

The Ph.D. program is designed to prepare students for research, teaching, and professional service normally required of college and university faculty members.

To fulfill requirements for the Ph.D. degree in French, candidates must complete at least three years of graduate study, of which at least one must be spent in residence at The University of Iowa, and must earn a minimum of 72 semester hours of graduate credit, including credit earned for the M.A. They must pass a comprehensive examination and make a successful oral defense of their dissertation.

Specific requirements include the following:

Fifth semester (or equivalent proficiency) in a foreign language other than French.
Three graduate courses in a related field, such as another literature, history, or philosophy (minimum requirement) 8 s.h.
009:251 Introduction to Old French Grammar 3 s.h.
009:260 Critical Theory and Practice 3 s.h.
009:277 Thesis (minimum requirement) 6 s.h.

Students working toward the doctorate are required to spend at least one year teaching as graduate assistants in the department.

Admission

To be considered for admission to an M.A. program in French, applicants must have completed the equivalent of The University of Iowa undergraduate major in French. The M.A. in French is prerequisite to admission to the Ph.D. program in French. Successful completion of the M.A. program, however, does not necessarily qualify a student for doctoral studies.

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 Aid

Teaching and research assistantships are offered through the department, and University fellowships and scholarships are available through the Graduate College. For information, contact the French and Italian department office.

Teaching assistants in the department must take 009:234 Principles of Teaching and Learning Foreign Languages.

Exchange assistantship agreements with the University of Haute Bretagne (Rennes), the University of Picardie (Amiens), and the University of Poitiers provide one year of residence in France for a limited number of graduate students.

Courses

A detailed description of courses offered each semester is available in the department office. 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.

Courses numbered 009:150-199 are intended primarily for advanced undergraduates; graduate students should consult with their adviser before registering for these courses.

Courses numbered 009:140-149 are conducted in English. With the exception of the interdisciplinary track, only one such course may be used to fulfill requirements for the major; consultation with the adviser is recommended prior to registration.

Students who have had significant experience with French through study or foreign residence are advised to consult with the department before enrolling in any French course.

French-Primarily for Undergraduates

009:000 Cooperative Education Internship 0 s.h.
009:001 Elementary French I 4 s.h.
For students who have no knowledge of French. Offered fall semesters. GE: foreign language.
009:002 Elementary French II 4 s.h.
Offered spring semesters. GE: foreign language. Prerequisite: 009:001 or equivalent.
009:010 First-Year French Review 5 s.h.
A year in one semester. GE: foreign language.
009:011 Intermediate French I 4 s.h.
GE: foreign language. Prerequisite: 009:002 or 009:010 or equivalent.
009:012 Intermediate French II 4 s.h.
Continuation of 009:008. GE: foreign language. Prerequisite: 009:011 or equivalent.
009:026 French Conversation: First Level 2 s.h.
Prerequisite: 009:002 or 009:010 or equivalent.
French and Italian  ●  College of liberal Arts  159

French - Primarily for Graduate Students

009:200 First-Year French Review 3 s.h.
009:201 Intermediate French I 2 s.h.
009:202 Intermediate French II 2 s.h.
009:205 French for Reading/Research 2-3 s.h.
009:206 French for Reading/Research 2-3 s.h.
009:208 Introduction to Graduate Study in French 3 s.h.
009:209 Advanced Grammar and Lexicology 3 s.h.
009:210 Comparative Stylistics 3 s.h.
009:211 Romanticism 3 s.h.
009:212 Realism and Naturalism 3 s.h.
009:213 Eighteenth-Century Fiction 3 s.h.
009:214 Studies In the Enlightenment 3 s.h.
009:215 The Renaissance in France 3 s.h.
009:220 Topics in French Studies 3 s.h.
009:221 Literature of the Twentieth Century 3 s.h.
009:222 French and Italian Cultural Studies 3 s.h.
009:223 Women Writers in France 3 s.h.
009:224 Modern French Novel 3 s.h.
009:225 Literature of Immigration in France 3 s.h.
009:226 Principles of Teaching and Learning Foreign Languages 3 s.h.
009:227 Studies In the Seventeenth Century 3 s.h.
009:228 Principles of Teaching and Learning Foreign Languages 3 s.h.
009:230 Introduction to Second Language Acquisition Research 3 s.h.
009:231 Introduction to Second Language Acquisition Research 3 s.h.
009:232 Second Language Acquisition 3 s.h.
009:233 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.
009:234 Principles of Teaching and Learning Foreign Languages 3 s.h.
009:235 Introduction to Second Language Acquisition Research 3 s.h.
009:236 Second Language Acquisition 3 s.h.
009:237 Second Language Acquisition Research and Theory I 3 s.h.
009:240 Studies In African Francophone Literature 3 s.h.
009:241 Introduction to Old French Grammar 3 s.h.
009:242 French Literature to 1180 3 s.h.
009:243 Critical Theory and Practice 3 s.h.
009:245 Narrative Modes 3 s.h.

French - for Undergraduate and Graduate Students

009:105 Third-Year French 3 s.h.
009:106 Third-Year French 3 s.h.
009:107 Introduction to French Literature: Medieval and Renaissance 3 s.h.
009:108 Introduction to French Literature: Seventeenth and Eighteenth Centuries 3 s.h.
009:109 Introduction to French Literature: Nineteenth Century 3 s.h.
009:110 Introduction to French Literature: Twentieth Century 3 s.h.
009:111 Introduction to Reading and Writing in Literature 3 s.h.
009:113 French Civilization 3 s.h.
009:114 French Civilization 3 s.h.
009:115 Business French 3 s.h.
009:116 Cinema, Society, and Culture in Twentieth-Century France 3 s.h.
009:118 Topics in French Studies I 3 s.h.
009:119 Regents Summer Program in France 8-9 s.h.
009:126 French Conversation: Third Level 2 s.h.
009:133 French Conversation: Third Level 2 s.h.
009:136 French Conversation: Fourth Level 2 s.h.
009:141 Literature and Society 3 s.h.
009:142 Special Work 3 s.h.
009:143 Studies in French Theatre 3 s.h.
009:144 Tales of Love in French Literature 3 s.h.
009:145 French Cinema 3 s.h.
009:146 Gender and Sexuality in French Cinema 3 s.h.
009:147 Foreign civilization and culture. Prerequisite: 009:012 or equivalent. Same as 36F:105, 048:105.
009:148 Gender and Sexuality in French Cinema 3 s.h.
009:150 French Classical Literature 3 s.h.
009:151 Issues and Materials in Foreign Language Education 3 s.h.
009:152 Literary Analysis 3 s.h.
009:153 Pastiche and Parody 3 s.h.
009:154 Topics in Foreign Language Instructional Technology 2 s.h.
009:155 French Civilization 3 s.h.
009:156 Francophone Literature of the African Diaspora 3 s.h.
009:157 Gender and Sexuality in French Cinema 3 s.h.
009:158 Gender and Sexuality in French Cinema 3 s.h.
009:159 Gender and Sexuality in French Cinema 3 s.h.
009:160 Gender and Sexuality in French Cinema 3 s.h.
009:161 Gender and Sexuality in French Cinema 3 s.h.
009:162 Gender and Sexuality in French Cinema 3 s.h.
009:163 Gender and Sexuality in French Cinema 3 s.h.
009:164 Gender and Sexuality in French Cinema 3 s.h.
009:165 Gender and Sexuality in French Cinema 3 s.h.
009:166 Gender and Sexuality in French Cinema 3 s.h.
009:167 Gender and Sexuality in French Cinema 3 s.h.
009:168 Gender and Sexuality in French Cinema 3 s.h.
009:169 Gender and Sexuality in French Cinema 3 s.h.
009:170 Gender and Sexuality in French Cinema 3 s.h.
009:171 Gender and Sexuality in French Cinema 3 s.h.
009:172 Gender and Sexuality in French Cinema 3 s.h.
009:173 Gender and Sexuality in French Cinema 3 s.h.
009:174 Gender and Sexuality in French Cinema 3 s.h.
009:175 Gender and Sexuality in French Cinema 3 s.h.
009:176 Gender and Sexuality in French Cinema 3 s.h.
009:177 Gender and Sexuality in French Cinema 3 s.h.
009:178 Gender and Sexuality in French Cinema 3 s.h.
009:179 Gender and Sexuality in French Cinema 3 s.h.
009:180 Gender and Sexuality in French Cinema 3 s.h.
009:181 Gender and Sexuality in French Cinema 3 s.h.
009:182 Gender and Sexuality in French Cinema 3 s.h.
009:183 Gender and Sexuality in French Cinema 3 s.h.
009:184 Gender and Sexuality in French Cinema 3 s.h.
009:185 Gender and Sexuality in French Cinema 3 s.h.
009:186 Gender and Sexuality in French Cinema 3 s.h.
009:187 Gender and Sexuality in French Cinema 3 s.h.
009:188 Gender and Sexuality in French Cinema 3 s.h.
009:189 Gender and Sexuality in French Cinema 3 s.h.
009:190 Gender and Sexuality in French Cinema 3 s.h.
009:191 Gender and Sexuality in French Cinema 3 s.h.
009:192 Gender and Sexuality in French Cinema 3 s.h.
009:193 Gender and Sexuality in French Cinema 3 s.h.
009:194 Gender and Sexuality in French Cinema 3 s.h.
009:195 Gender and Sexuality in French Cinema 3 s.h.
009:196 Gender and Sexuality in French Cinema 3 s.h.
009:197 Gender and Sexuality in French Cinema 3 s.h.
Italian - Primarily for Undergraduates

018:001 Elementary Italian 4 s.h.
For students who have no knowledge of Italian. Offered fall semesters GE: foreign language.

018:002 Elementary Italian II 4 s.h.
Offered spring semesters. GE: foreign language. Prerequisite: 018:001 or equivalent.

018:011 Intermediate Italian 4 s.h.
Offered fall semesters. GE: foreign language. Prerequisite: 018:002 or equivalent.

018:012 Intermediate Italian II 4 s.h.
Offered spring semesters GE: foreign language. Prerequisite: 018:011 or equivalent.

018:013 Conversational Italian 2 s.h.
Offered fall semesters. Prerequisite: 018:002 or 018:105.

018:014 Conversational Italian II 2 s.h.
Offered spring semesters. Prerequisite: 018:011 or equivalent.

018:029 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. Open only to first- and second-semester students.

018:053 Special Work arr.

Italian -for Undergraduate and Graduate Students

018:102 Intensive Elementary Italian 6 s.h.
Offered spring semesters. GE: foreign language. Prerequisite: two years of another foreign language.

018:105 Modern Italian Fiction 3 s.h.
Prerequisite: 018:012.

018:106 Modern Italian Poetry and Drama 3 s.h.
Continuation of 018:105, but may be taken as independent unit. Prerequisite: 018:012 or equivalent.

018:111 Advanced Composition and Conversation 3.4 s.h.
Offered fall semesters. Prerequisite: 018:012 or equivalent.

018:112 Advanced Composition and Conversation 3.4 s.h.
Offered spring semesters. Prerequisite: 018:111.

018:114 Studies in Italian Language 3 s.h.
Prerequisite: 018:111 or equivalent.

018:119 Medieval Italian Literature 3 s.h.
Prerequisite: 018:012.

018:120 Medieval and Renaissance Italian Literature 3 s.h.
Continuation of 018:119, which is not prerequisite. Prerequisite: 018:012.

018:142 Topics In Italian Literature 3 s.h.
Topics chosen by genre, gender, artistic and literary movement, or regional and cultural diversity. Prerequisite: 018:111 or equivalent.

018:153 Special Work arr.

018:162 Topics in Italian Culture and Civilization 3 s.h.
Prerequisite: 018:111 or equivalent.

018:198 Honors Research and Thesis 3 s.h.

Italian -Primarily for Graduate Students

018:203 Intensive Elementary Italian 4 s.h.
Fundamentals-pronunciation, reading, writing, comprehension, speaking; content of 018:001-002 in one semester. Prerequisite: two years of another foreign language.

018:217 Studies in Italian Literature 3 s.h.

GENETICS

Faculty members and students in the College of Liberal Arts participate in the Genetics Program. For information about the program, see the Graduate College section of the Catalog.

GEOGRAPHY

Chair:

Geography is concerned with place and environment and the ongoing processes of change within and between social and physical systems. Geography’s importance to scholarly inquiry is rooted in the complexity of the social and environmental problems with which it deals. Its analytical power comes from its ability to understand and work with emerging properties of complex systems and with problems that require synthesis and integration. The three concepts at the core of the discipline—space, place, and scale—provide theoretical constructs and methodological tools for a science of the complex character of social and environmental phenomena.

Nowhere is this more apparent than when investigating the dynamic interrelationships between nature and society. Social problems often include environmental components, and environmental problems must be understood as a complex web of natural and social causes and consequences. Geographers deal with issues such as distribution and consumption of natural resources, air and water quality, processes and management of physical systems, climate changes and ecosystem dynamics, growth and development of urban areas, population dynamics, transportation problems, social conflict, social justice, and gender. These cannot be adequately understood through grounding in one of the physical or social sciences alone, nor can work in only one of these lead directly to appropriate solutions to environmental problems.

Geographers view society and nature as a physical/social/cultural system. They apply uniquely geographical perspectives and tools, as well as specialized knowledge from the individual social and scientific disciplines, to analyze the emergent properties of these systems.

Career opportunities for majors in geography exist in many branches of government, nongovernmental organizations, and business. In demand are persons capable of dealing with resource management, urban and regional development, site selection and market area analysis, and problems in distribution and complex interrelationships between physical, ecological, social, and political systems.

Courses in geography are commonly required of students preparing to teach at the elementary and secondary school levels and 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.

Undergraduate Programs

The geography faculty has developed an undergraduate instructional program that serves students majoring or minoring in geography as well as those in other disciplines who are interested in taking geography courses as part of a liberal education. The department also participates in a number of University interdisciplinary programs that have global, area studies, urban, or environmental components.

Bachelor’s Degrees

Requirements for the B.A. and B.S. in geography have changed. Students who enter the major on or after the first day of fall semester 2000 must complete the new requirements. Students who enter the major before the first day of fall 2000 may choose to complete either the old requirements (see the 1998-2000 General Catalog) or the new requirements. Students who choose the old requirements must complete the major and graduate by August 2004.

Each student majoring in geography selects one of three programs of study: geography and social change, environmental studies, or geographic information science. The course offerings in these programs include some overlapping of requirements.

Majors may work toward either a Bachelor of Science or a Bachelor of Arts. Either degree is appropriate for those who plan to pursue advanced training or careers in geography, environmental studies, or geographic information science. Students with interests in quantitative analysis and model building should choose the B.S. degree and should master an appropriate computer programming language.

Transfer students must earn at least 15 semester hours of geography course work in residence at The University of Iowa.

GIS laboratory

The University has established a Geographic Information System Instructional Laboratory (GISIL). Housed in the Department of Geography, the facility consists of a networked system of student workstations. Students in the environmental studies or geography and social change programs who wish to gain additional experience in the theory and application of geographic information systems (GIS) should
take 044:113 Principles of Geographic Information Systems and at least 6 more semester hours in GIS-based courses in the Department of Geography.

**General Requirements**

All geography majors must complete the following courses.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>044:005</td>
<td>Foundations of GIS</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:150</td>
<td>Senior Project Seminar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:151</td>
<td>Senior Thesis</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

All majors must complete one 3-semester-hour course offered by the Department of Statistics and Actuarial Science and numbered 22S:025 or above. The following are recommended.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>22S:025</td>
<td>Elementary Statistics and Inference</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>22S:102</td>
<td>Introduction to Statistical Methods</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Bachelor of Arts students must satisfy a mathematics requirement consisting of any college-level mathematics course of 3 semester hours or more, except 22M:001, 22M:002, or 22M:003.

Bachelor of Science students must satisfy a mathematics requirement consisting of one of the following sequences.

- 22M:015-016 Mathematics for the Biological Sciences/Calculus for the Biological Sciences a s.h.
- 22M:021-022 Calculus and Modeling IId a s.h.
- 22M:025-026 Calculus I-II a s.h.
- 22M:035-036 Engineering Calculus I-II a s.h.
- 22M:045-046 Accelerated Calculus with Applications I-II a s.h.

All majors are encouraged to complete the General Education Program natural science component with 029:005 Chemistry and Physics of the Environment or a more advanced course in chemistry or physics.

All geography majors must complete one of the three programs of study described under “Geography and Social Change,” “Environmental Studies,” or “Geographic Information Science.” Students should pay close attention to prerequisites for the intermediate and advanced courses in each sequence so that they can develop and complete their programs in a timely fashion. They also should choose electives from the “Related Course Work” cognate clusters to avoid exceeding the College of Liberal Arts 50-semester-hour limit on the amount of credit earned in the major department that can be counted toward the bachelor’s degree.

**Geography and Social Change**

The undergraduate program in geography and social change is designed for students preparing for positions in government, nongovernmental organizations, international development agencies, and business. It also provides preparation for graduate programs in geography or planning, or for professional programs such as law, business, or policy analysis. The program provides an understanding of the increasing globalization of the modern world, including processes of urban and regional development or underdevelopment; the roles of elites, classes, institutions, social movements, and the natural environment in affecting social change in different parts of the world; and the processes through which policy decisions are reached. Courses cover social and economic theories of location and regional formation, methods of spatial analysis and geographic modeling, global and regional political economy, and theories of community conflict and social change.

Students develop requisite skills in quantitative analysis and the development, management, and application of geographic information systems and computer methods. They have opportunities to work on applied problems, such as assessing sites for their growth potential, identifying the best locations for service facilities, evaluating the impact of major projects, and forecasting the populations of small areas. This concentration also gives students interested in international development the opportunity to examine and evaluate competing theories intended to explain international and regional inequalities on a global scale.

In addition to taking the courses required of all geography majors, students in geography and social change must complete the following.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>044:111</td>
<td>Introductory geography courses (see list)</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>044:112</td>
<td>GIS: Urban, Social, and Economic Applications</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:113</td>
<td>Population Geography</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:115</td>
<td>Introduction to Political Geography</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:030</td>
<td>The Global Economy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:094</td>
<td>International Development</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**METHODS COURSE**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>044:112</td>
<td>GIS: Urban, Social, and Economic Applications</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**INTERMEDIATE COURSES**

At least one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>044:114</td>
<td>Mexico! Environment. Politics. and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:132</td>
<td>Geography of Contemporary Europe</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:133</td>
<td>Introduction to Economics of Transportation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:135</td>
<td>Urban Geography</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:162</td>
<td>Work, Gender, and Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:170</td>
<td>Geography of Justice</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:172</td>
<td>Development Planning and Policy</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**ADVANCED COURSES**

At least one of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>044:101</td>
<td>Climatology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:103</td>
<td>Biogeography</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:104</td>
<td>Environment and Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:121</td>
<td>Natural Resources Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:122</td>
<td>Environmental Conservation in the U.S.</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**RELATED COURSE WORK**

Under the direction of an adviser, students choose at least 12 semester hours of courses from one of the following cognate clusters. Other relevant courses may be substituted for the courses listed here, with the adviser’s consent. Students also may satisfy this requirement by earning a second major or a minor in another department or by completing the requirements for a certificate in an interdisciplinary program.

**Social Theory, Cultural Perspectives**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>008:100</td>
<td>Introduction to Criticism and Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>008:138</td>
<td>Post-Colonial Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16A:107</td>
<td>American Cultural History, 1820-1920</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16A:142</td>
<td>American Labor in the Twentieth Century</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16E:148</td>
<td>Society and Gender in Europe, 1750-Present</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16W:119</td>
<td>African and African American Interactions</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>026:132</td>
<td>Introduction to Political Philosophy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:133</td>
<td>Postmodern Political Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:138</td>
<td>Current Political Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>034:150</td>
<td>Political Sociology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>034:160</td>
<td>American Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>034:166</td>
<td>Social Inequality</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>36C:085</td>
<td>Communication and Conflict</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>36M:025</td>
<td>Media and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>113:144</td>
<td>Culture and Consumption</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>113:153</td>
<td>Cultural Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:101</td>
<td>Introduction to Women’s Studies</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>131:151</td>
<td>Feminist Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:155</td>
<td>Gender and Ethnography</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Urban and Regional Change**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>06E:001</td>
<td>Principles of Microeconomics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>06E:100</td>
<td>Economics for Business Decision Making</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:104</td>
<td>Microeconomic Theory</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
044:131 Medical Geography 3 s.h.
034:155 Sociology of Race and Ethnicity 3 s.h.
06J:048 Introduction to Management 3 s.h.
06E:176 Public Sector Economics 3 s.h.
06E:135 Regional and Urban Economics 3 s.h.
030:155 Social Movements and Collective Action 3 s.h.
030:120 Public Administration and Bureaucratic Politics 3 s.h.
030:137 Introduction to Political Economy 3 s.h.
030:155 Social Movements and Collective Action 3 s.h.
030:138 Current Political Theory 3 s.h.
033:153 Hard Cases: Science Policy and Values 3 s.h.
033:155 Risk Technology and the Public 2-4 s.h.
091:291 International Environmental Law 3 s.h.
113:143 Environment and Culture 3 s.h.
113:144 Culture and Consumption 3 s.h.
131:101 Introduction to Women’s Studies 4 s.h.
131:151 Feminist Theory 3 s.h.

Geographic Information Analysis
06K:070 Computer Analysis 3 s.h.
06K:176 Managerial Decision Models 3 s.h.
06K:182 Applications of Database Management Systems 3 s.h.
012:178 Geostatistics Seminar 3 s.h.
22C:005 Problem Solving and Computing 3 s.h.
22C:016 Computer Science I 4 s.h.
22C:020 Computer Science II 4 s.h.
22C:030 Computer Science III 3 s.h.
044:080 GIS for Environmental Studies: Introduction 3 s.h.
044:105 Introduction to Environmental Remote Sensing 3 s.h.
044:107 Theoretical Cartography 3 s.h.
044:109 Analytical Cartography 3 s.h.
044:113 Principles of Geographic Information Systems 3 s.h.
044:128 GIS for Environmental Studies: Applications 3 s.h.
044:139 Locational Models and Spatial Decision Support Systems 3 s.h.

Environmental Studies
The undergraduate program in environmental studies is designed for students interested in the environment from physical and sociocultural perspectives. These students may have career expectations or personal interests in resource management, physical geography, climatology, environmental policy or law, global environmental change, sustainable development, or other complex environmental issues. Career goals may involve one of the environmental professions, such as landscape ecology or climatology; environmental planning and regulation; or environmental law, policy, and politics. The program stresses the interrelationships among social and natural processes that affect the environment.

Training in field observation, remote sensing, geographical information systems, quantitative analysis/computing, and cartographic representation are included in this concentration. The program also provides a sound foundation for graduate or professional-level studies in either the natural or social aspects of the environment.

In addition to taking the courses required of all geography majors, students in environmental studies must complete the following. Those who have taken high school chemistry or physics should substitute a more advanced course for 029:005.

029:005 Chemistry and Physics of the Environment (or a more advanced chemistry or physics course) 3 s.h.
An introductory geography course (see list) 3 s.h.
One methods course (see list) 3 s.h.

Five courses chosen from the following lists of intermediate and advanced courses (at least two from each list) 15 s.h.
Electives (see "Related Course Work") 12 s.h.

INTRODUCTORY GEOGRAPHY COURSES
At least one of these:
044:011 Population Geography 3 s.h.
044:015 Introduction to Political Geography 3 s.h.
044:030 The Global Economy 3 s.h.
044:094 International Development 3 s.h.

METHODS COURSES
One of these:
044:080 GIS for Environmental Studies: Introduction 3 s.h.
044:105 Introduction to Environmental Remote Sensing 3 s.h.
044:128 GIS for Environmental Studies: Applications 3 s.h.
044:180 Field Methods 2-4 s.h.

INTERMEDIATE COURSES
At least two of these:
044:080 GIS for Environmental Studies: Introduction 3 s.h.
044:101 Climatology 3 s.h.
044:103 Biogeography 3 s.h.
044:104 Environment and Development 3 s.h.
044:114 Mexico! Environment, Politics, and Society 3 s.h.
044:121 Natural Resources Policy 3 s.h.
044:122 Environmental Conservation in the U.S. 3 s.h.

ADVANCED COURSES
At least two of these:
044:123 Landscape Ecology 3 s.h.
044:124 Gender and the Environment 3 s.h.
044:125 Environmental Impact Analysis 4 s.h.
044:126 Wetlands: Function, Geography, and Management 3 s.h.
044:127 Environmental Quality: Science, Technology, and Policy 3 s.h.
044:128 GIS for Environmental Studies: Applications 3 s.h.
044:129 Water Resources Management 3 s.h.
044:131 Medical Geography 2-3 s.h.
044:178 Consequences of Global Environmental Change 3 s.h.
044:180 Field Methods 2-4 s.h.

*Only one of these (044:080, 044:105, 044:128, 044:180) can be counted toward the 15-semester-hours requirement in intermediate and advanced courses.

A course chosen to fulfill one requirement cannot be used to fulfill a second.

RELATED COURSE WORK
Under the direction of an adviser, students should choose at least 12 semester hours of courses from one of the following cognate clusters. Other relevant courses may be substituted for the courses listed here, with the adviser’s consent. Students also may satisfy this requirement by earning a second major or a minor in another department or by completing the requirements for a certificate in an interdisciplinary program.
### Biophysical Systems

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>002:100</td>
<td>Plant Diversity and Evolution</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>002:116</td>
<td>Field Ecology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>002:119</td>
<td>Plant-Animal Interactions</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>002:134</td>
<td>Ecology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>012:108</td>
<td>Introduction to Oceanography</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>012:128</td>
<td>Quaternary Palynology and Paleobotany</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>012:138</td>
<td>Fluvial Geomorphology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>012:140</td>
<td>Geological Hazards</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>012:154</td>
<td>Advanced Geocomputing</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>012:166</td>
<td>Hydrogeology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>012:172</td>
<td>Glacial and Pleistocene Geology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>012:173</td>
<td>Quaternary Environments</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>012:179</td>
<td>Engineering Geology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>159:102</td>
<td>Earth Surface Processes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Summer courses offered through Iowa Lakeside Laboratory</td>
<td>arr.</td>
</tr>
</tbody>
</table>

### Environmental Management

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>06E:001</td>
<td>Principles of Microeconomics</td>
<td>3-4 s.h.</td>
</tr>
<tr>
<td>06E:100</td>
<td>Economics for Business</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:104</td>
<td>Microeconomic Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:105</td>
<td>Macroeconomics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:119</td>
<td>Economics of the Government Sector</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:133</td>
<td>Environmental and Natural Resource Economics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:140</td>
<td>Introduction to Law</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:148</td>
<td>Introduction to Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>012:139</td>
<td>Integrated Watershed Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:117</td>
<td>Law-and Social Change</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>033:153</td>
<td>Hard Cases: Science Policy and Values</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>033:155</td>
<td>Risk Technology and the Public</td>
<td>2-4 s.h.</td>
</tr>
<tr>
<td>044:133</td>
<td>Introduction to Economics of Transportation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>091:291</td>
<td>International Environmental Law</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>102:101</td>
<td>Introduction to Planning and Policy Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>102:123</td>
<td>Introduction to Environmental Policy and Planning</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Environment and Development

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>06E:105</td>
<td>Macroeconomics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:129</td>
<td>Economic Growth and Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:146</td>
<td>International Business Environment</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:147</td>
<td>Ethnicity, Nationalism, and States in Transition</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:148</td>
<td>The Politics of Southern Africa</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:150</td>
<td>The Politics of Emerging Market Economies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:161</td>
<td>International Organization and World Order</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:133</td>
<td>Introduction to Economics of Transportation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:157</td>
<td>Third World Development Support</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:161</td>
<td>African Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:162</td>
<td>Work, Gender, and Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:163</td>
<td>Geography of the Newly Industrializing Countries</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:172</td>
<td>Development Planning and Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>044:194</td>
<td>Geographic Perspectives on Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>113:104</td>
<td>Inside/Outside the Middle East</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Geographic Information Science

#### Biophysical Systems

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>113:131</td>
<td>Latin American Economy and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>113:145</td>
<td>Economic Anthropology of the Third World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>113:151</td>
<td>Sociology of the Third World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>113:175</td>
<td>Gender and Development Studies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:101</td>
<td>Introduction to Women's Studies</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>131:155</td>
<td>Gender and Ethnicity</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

#### Nature and Society

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>01H:165</td>
<td>Landscape in American Art</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:001</td>
<td>Principles of Microeconomics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:133</td>
<td>Environmental and Natural Resource Economics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>008:100</td>
<td>Introduction to Criticism and Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>008:143</td>
<td>American Landscape</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16A:134</td>
<td>Great Plains</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16A:135</td>
<td>American West in the Twentieth Century</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>026:102</td>
<td>Introduction to Ethics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>026:104</td>
<td>Introduction to Philosophy of Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>026:132</td>
<td>Introduction to Political Philosophy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:133</td>
<td>Postmodern Political Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:138</td>
<td>Current Political Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>033:153</td>
<td>Hard Cases: Science Policy and Values</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>033:155</td>
<td>Risk Technology and the Public</td>
<td>2-4 s.h.</td>
</tr>
<tr>
<td>091:291</td>
<td>International Environmental Law</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>113:143</td>
<td>Environment and Culture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>113:144</td>
<td>Culture and Consumption</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:101</td>
<td>Introduction to Women's Studies</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>131:151</td>
<td>Feminist Theory</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Geographic Information Analysis

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>06K:070</td>
<td>Computer Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06K:176</td>
<td>Managerial Decision Models</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06K:182</td>
<td>Applications of Database Management Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>012:178</td>
<td>Geostatistics Seminar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>22C:005</td>
<td>Problem Solving and Computing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>22C:016</td>
<td>Computer Science I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>22C:020</td>
<td>Computer Science II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>22C:030</td>
<td>Computer Science III</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>044:080</strong></td>
<td>GIS for Environmental Studies: Introduction</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>044:105</strong></td>
<td>Introduction to Environmental Remote Sensing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>044:112</strong></td>
<td>GIS: Urban Social and Economic Applications '</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>044:113</strong></td>
<td>Principles of Geographic Information Systems</td>
<td>3 s.h.</td>
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#### Geographic Information Science

The undergraduate program in geographic information science is designed for students who are preparing for positions in government agencies, nongovernmental organizations, international development agencies, and business. It also provides preparation for graduate work in geography, planning, and other disciplines. Students in this program develop an understanding of the design, implementation, and use of geographic information systems. Courses address how geographic data are acquired, stored, accessed, displayed, managed, and analyzed.

Geographic information science students learn to address problems such as modeling environmental systems, identifying the best locations for service facilities, assessing environmental impacts, and forecasting the populations of small areas. The Geographic Information Systems Instructional Laboratory (GISIL) is used extensively in courses to enable students to develop their expertise in the use of GIS software.

Core geographic information science courses cover methods of spatial analysis and geographical modeling and include database management and computer programming. Students supplement their work in GIS core courses through 12 semester hours of additional geography course work. Those who choose to focus on GIS for environmental analyses select supplementary geography courses from the department’s environmental studies program, while those whose main interests are in socioeconomic analyses select supplementary course work from the department’s geography and social change program.

In addition to the courses required of all geographic majors, students in the geographic information science program must complete the following.

- **044:080 GIS for Environmental Studies: Introduction**  3 s.h.
- **044:105 Introduction to Environmental Remote Sensing**  3 s.h.
- **044:112 GIS: Urban Social. and Economic Applications ’**  3 s.h.
- **044:113 Principles of Geographic Information Systems**  3 s.h.

One of these:

- **044:107 Thematic Cartography**  3 s.h.
- **044:109 Analytical Cartography**  3 s.h.
- **044:128 GIS for Environmental Studies: Applications**  3 s.h.
- **044:131 Medical Geography**  2-3 s.h.
- **044:139 Locational Models and Spatial Decision Support Systems**  3 s.h.

All of these:

- **06K:070 Computer Analysis**  3 s.h.
- **06K:176 Managerial Decision Models**  3 s.h.
- **22C:016 Computer Science I**  4 s.h.

Geography courses chosen from the intermediate and advanced courses listed for the appropriate GIS emphasis (geography and social change, or environmental studies) 12 s.h.

Courses from the department’s programs in geography and social change, or...
environmental studies, chosen in consultation with the adviser.

**GIS Emphasis on Geography and Social Change**

Students who elect to concentrate additional geography course work in the geography and social change program choose courses from the following three lists.

**Introductory Geography Courses**

At least one of these:
- 044:011 Population Geography
- 044:015 Introduction to Political Geography
- 044:030 The Global Economy
- 044:094 International Development

**Intermediate Geography Courses**

At least one of these:
- 044:114 Mexico!: Environment, Politics, and Society
- 044:132 Geography of Contemporary Europe
- 044:133 Introduction to Economics of Transportation
- 044:135 Urban Geography
- 044:162 Work, Gender, and Development
- 044:170 Geography of Justice
- 044:172 Development Planning and Policy

**Advanced Geography Courses**

At least one of these:
- 044:124 Gender and the Environment
- 044:170 Geography of Justice
- 044:178 Consequences of Global Environmental Change
- 044:194 Geographic Perspectives on Development
- 044:199 Water Resources Management
- 044:173 Location Theory
- 044:163 Geography of the Newly Industrializing Countries
- 044:176 Social Consequences of Global Change

**GIS Emphasis on Environmental Studies**

Students who elect to concentrate additional geography course work in the environmental studies program should choose courses from the following two lists.

**Intermediate Geography Courses**

At least one of these:
- 044:101 Climatology
- 044:105 Biogeography
- 044:104 Environment and Development
- 044:121 Natural Resources Policy
- 044:122 Environmental Conservation in the U.S.

**Advanced Geography Courses**

At least two of these:
- 044:123 Landscape Ecology
- 044:124 Gender and the Environment
- 044:125 Environmental Impact Analysis
- 044:126 Wetlands: Function, Geography, and Management
- 044:127 Environmental Quality: Science, Technology, and Policy
- 044:129 Water Resources Management

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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. (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**

(The B.A. degree requires 19 courses.)

Before the third semester begins: one of the introductory courses in the major and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: six courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: 13 courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: 16 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**

(The B.S. degree requires 20 courses.)

Before the third semester begins: two of the introductory courses in the major and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: eight courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: 14 courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: 17 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**

The honors major is for students of superior ability who want to pursue studies beyond the typical undergraduate level. To graduate with honors in geography, students must be admitted to both the University Honors Program and the honors program in geography by the first semester of the senior year. They must maintain a grade-point average of at least 3.20 in all University work and at least 3.40 in geography.

They also must prepare and present an honors thesis, which consists of original research under the direction of a faculty member. The thesis is reviewed by a three-member faculty committee.

Students complete the thesis through a year-long tutorial in 044:198 Honors Tutorial and 044:199 Honors Thesis. The senior course 044:150 Senior Project Seminar may be substituted for 044:199 Honors Thesis, provided the student continues work on the thesis under the direction of a faculty member.

**Minor**

To minor in geography, a student must complete at least 15 semester hours in geography courses with a grade-point average of at least 2.00. Twelve of the 15 semester hours must be taken at The University of Iowa in 0001-level courses. Minors are encouraged to choose one of the department’s areas of concentration—geography and social change, environmental studies, or geographic information science—and to take courses listed in that concentration. Minors who wish further assistance in selecting courses may contact the department secretary to request assignment of a minor advisor.

**Cooperative Education Program**

The Department of Geography is a participant in the University’s Cooperative Education Program, which provides opportunities for both undergraduate and graduate students to participate in cooperative training assignments related to their academic programs.

**Courses for Nonmajors**

Students in the College of Liberal Arts as well as other areas of the University may find geography courses meaningful to their own programs of study. The beginning-level courses 044:001 Introduction to Human Geography, 044:011 Population Geography, 044:019 Contemporary Environmental Issues, and 044:030 The Global Economy are approved by the College of Liberal Arts for General Education in social sciences; 044:157 Third World Development Support is approved for General Education in foreign civilization and culture; 044:161 African Development is approved for General Education in social sciences and foreign civilization and culture; and 044:003 Introduction to Earth Systems Science is approved for General Education in natural sciences. These courses serve as part of a liberal education.

Other courses may be attractive as individual electives. These include 044:015 Introduction to Political Geography, 044:124 Gender and the Environment, 044:126 Wetlands: Function, Geography, and Management, and 044:132 Geography of Contemporary Europe.

**Graduate Programs**

The department’s graduate 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.

Programs of Study
Faculty members in the Department of Geography specialize in three broad areas of geographic inquiry: social-spatial theory, environmental systems, and geographic information science. By choosing appropriately from these three areas, students can develop programs in areas such as economic geography, political geography, biogeography and climatology, environment and society, regional development, and GIS and spatial analysis. For the M.A. and Ph.D. degrees, students are required to attain and demonstrate competence in a specific area of geography, across the breadth of geography, and in geographical methods.

Competence in a specific area of geography is achieved by appropriate coursework chosen in consultation with an adviser and committee. Work may include courses in cognate fields; students coming to the program with degrees in disciplines other than geography already may have cognate strength. Students achieve competence across the breadth of geography through appropriate coursework in areas outside their specific area. Students must enroll in 044:210 Philosophy and Epistemology in Geography at some time during their course of study, and they must enroll in 044:350 Geographic Colloquium every semester that they are in residence.

Competence in methods is achieved by appropriate coursework in an area relevant to the student’s specialty. This competence must be developed in an area broader than that needed to complete a research paper or dissertation alone; it must be broad enough to provide a base for understanding the literature in the area now and in the future.

The B.A. or B.S. degree in geography is not a prerequisite for entry into the program, but students are expected to have an undergraduate background relevant to pursuing graduate work in geography. A strong background in any of the social or environmental sciences and an interest in exploring the regional and spatial perspectives characterizing modern geography are more important than the particular disciplinary orientation of the student’s baccalaureate degree. Depending on the strength and suitability of their prior training, however, students may be required to take courses that are prerequisites for courses in their elected areas. Credit received for such courses cannot be applied to the requirements for a degree.

Master of Arts
The M.A. is designed to be completed in four semesters. It requires a minimum of 30 semester hours of graduate work, of which 15 semester hours must be earned in courses numbered 200 and above (including thesis, research, and readings hours, but not more than 2 semester hours of 044:350). At least 3 semester hours for the M.A. must be chosen from geography courses numbered 200 or above that are conducted as seminars. Most students accumulate 40-48 semester hours of graduate credit in completing the M.A. Students are advised to use these additional hours to increase their breadth of knowledge in geography and to tailor their programs of study to their individual interests. A maximum of 6 semester hours may be earned in thesis work. Graduate students demonstrate competence by completing appropriate coursework; and completing an M.A. exam, or completing and defending an M.A. thesis, or completing the comprehensive exams for the Ph.D.

Doctor of Philosophy
The Doctor of Philosophy program is designed to prepare students for positions in college and university teaching and in advanced research. It provides programs of study leading to broad knowledge of a field of geography and its literature and special expertise in a specific subfield. The former usually represents the general area in which the Ph.D. holder seeks employment, whereas the latter represents his or her area of most active research involvement. The Ph.D. is a four- to five-year postbaccalaureate program. Students can enter the program directly from the B.A. or B.S. or with advanced standing corresponding to their previous graduate education. Students must fulfill all departmental requirements for the M.A. except for the M.A. examination or thesis. Students must earn at least 18 semester hours in geography courses numbered 200 or above, conducted as seminars, and taught by two different faculty members. In addition, Ph.D. students demonstrate competence in a specific area of geography, across the breadth of geography, and in geographical methods by completing an original research paper, writing an area review paper, passing comprehensive examinations, and completing and defending a dissertation.

Before students can be admitted formally to candidacy for the Ph.D., they must submit an original research paper to a faculty committee for approval. Students who complete the M.A. with thesis can submit the M.A. thesis to fulfill this requirement. Students entering the program with an M.A. from another institution can submit theses or research papers completed elsewhere to fulfill this requirement. Before taking the comprehensive examination, which consists of both oral components, each student must submit an area review paper to his or her Ph.D. committee. This paper, which must be approved by the student’s Ph.D. adviser, consists of a critical review of research in the student’s area of concentration. The comprehensive examination covers both the student’s area of concentration and his or her more general field in the discipline. After obtaining the approval of a dissertation supervisor, the student must submit a dissertation proposal to his or her dissertation committee for its critical comments and approval. The student then must complete and defend the dissertation.

Doctor of Philosophy

Financial Support
A number of graduate appointments as teaching or research assistants are available. In addition, there are several fellowships for outstanding applicants and underrepresented minorities. Awards are based on merit. In making awards, the department pays particular attention to grade-point average, GRE score, letters of recommendation, and how well the student’s objectives fit with departmental specializations. Applications for graduate appointments must be received by January 1. Applicants for fellowships should submit their applications by January 15.

Facilities
The department houses three geographic information computational laboratories. These specialized laboratories support a variety of GIS software packages, including ARCGIS, ARCMEM, MGE, Idrisi, MAPINFO, Transcad, and Mapwindow. The Geographic Information Systems Instructional Laboratory (GISIL) is equipped with 20 networked NT workstations, instructional support technology (e.g., CRT projection), and a suite of peripherals. The GISIL also contains high-end visualization equipment in the form of an ImmersaDesk, which provides users with access to full 3-D immersion for work in virtual environments.

GIS research laboratories contain Wintel machines. An environmental modeling and GIS lab includes a heterogeneous collection of UNIX workstations. Digitizers, scanners, plotters, and printers are also available in the department. The department also participates in an advanced GIS and modeling facility in the Center for Global and Regional Environmental Research. The University of Iowa is a charter member of Internet2, and a high-performance network link to the Department of Geography was established recently. A cluster of PCs and Macs is available for graduate student word processing and internet connection.

For studies in water resources and physical geography, the department has a laboratory for analysis of vegetation, sediment, soil, and water quality; a digital tree-ring bench; and a variety of field equipment.

The map collection in the University’s Main Library contains more than 115,500 maps, a total of 3,000 atlases and reference works, and about 100,000 aerial photographs, primarily of Iowa. The library is a depository for maps of the
Primarily for Undergraduates

044:000 Cooperative Education Training Assignment 0 s.h.

044:001 Introduction to Human Geography 4 s.h. Application of geographic principles to contemporary social, economic, and political problems; urban growth; problems of the ghetto; diffusion of innovations; territoriality and perception. GE: social sciences.

044:003 Introduction to Earth Systems Science 4 s.h. Elementary principles of physical geography: physics of weather and climate, hydrological systems, geomorphological and geological forces; pedological processes, and ecological processes and patterns; geographical explanation of physical environment, with principles applied to the human use system; environmental pollution and natural hazards. GE: natural sciences.

044:005 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.

044:010 The Contemporary Global System 4 s.h. Problems of the global system and ways to address them; global economy and environment, state and security, social justice and human rights. GE: foreign civilization and culture or social sciences. Same as 047:010.

044:011 Population Geography 3 s.h. Spatial considerations of population growth and distribution; minorities within a population; poverty; housing; social organization and disorganization; social systems, including education, religion, recreation, medical and social services; diffusion of ideas and traits over space. GE: social sciences.

044:015 Introduction to Political Geography 3 s.h. Emphasis on application of geographical and economic theory in understanding historical development and restructuring of political economies at global, national, and local levels; development of nation states, nationalism, imperialism, geopolitics, economic restructuring, electoral geography.

044:019 Contemporary Environmental Issues 3 s.h. Political, economic, cultural, technological, ecological, and ethical issues associated with natural resource and environmental problems, including population, global climate change, food production, tropical deforestation, soil erosion, waste management. GE: social sciences.

044:029 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). Open only to first- and second-semester students.

044:030 The Global Economy 3 s.h. Location and spatial organization of the world’s major types of economies; agriculture, energy and minerals, manufacturing, transportation; trade and service centers. GE: social sciences.

044:035 World Cities 3 s.h. Urbanization as a process: specific concepts and theories of urbanization through global patterns, regional urban systems, individual metropolitan areas. Offered spring semesters. Same as 047:035.

044:080 GIS for Environmental Studies: Introduction 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.

044:085 Introduction to Economic and Social Statistics 3 s.h. Statistical methods applied to problems in economics, other social sciences; graphical methods, descriptive statistics, sampling and inference, regression analysis, simple forecasting methods. Same as 044:085.

044:094 International Development 3 s.h. Theories of international development, political economy, development policy and planning; empirical analysis of conditions, policies, experiences of selected Third World countries. Prerequisite: social science GE.

044:100 Readings for Undergraduates 3 s.h. Supervised readings in geography. Consent of instructor required.

For Undergraduate and Graduate Students

044:101 Climatology 3 s.h. Boundary layer processes that drive atmospheric dynamics; exchanges of energy and water at simple and complex surfaces; global climate change; nanoscale to macroscale; feedbacks of climate on society. Prerequisite: 044:003 or consent of instructor. Same as 012:104.

044:103 Biogeography 2.3 s.h. Distribution and abundance of plants and animals, spatial patterns and processes, and temporal dynamics of successions, response to climate change, and evolution; methods applied to the study of vegetation and plant community patterns. Prerequisite: 044:003 or 022:001 or consent of instructor. Same as 002:103.

044:104 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.

044:105 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.

044:107 Thematic Cartography 3 s.h. Selection of map projections, cartographic design, point-symbol maps, network representations, choropleth maps and data classification, multivariate maps, map animation, multimedia. Prerequisite: 044:005 or consent of instructor.

044:108 Introduction to Geographical Computing 3 s.h. Computer use for spatial problem solving; representation of geographical data; information visualization; overview of GIS and its use in human and physical geography. Prerequisite: 044:005 or consent of instructor.

044:109 Analytical Cartography 3 s.h. Design and implementation of computer algorithms for processing digital geographical data; map projections and conversion, affine transformations, data capture programs, cartographic data structures, generalization, faceting, interpolation. Prerequisite: 044:005 or 044:080 or consent of instructor.

044:112 GIS: Urban, Social, and Economic Applications 3 s.h. Concepts in the analysis of geo-referenced data sources, digital data structures, data organization; introduction to analyses of spatial data, including geodemographic and network analysis. Prerequisite: 044:005 or consent of instructor.

044:113 Principles of Geographic Information Systems 3 s.h. Issues in establishment of geographic information systems: spatial data encoding, raster-vector options, spatial and attribute resolution, cartographic data models, linkages to spatial analysis procedures, display techniques for decision support, institutional setting. Prerequisite: 044:085 or 044:080 or consent of instructor.

044:114 Mexico: Environment, Politics, and Society 3 s.h. Contemporary trends and issues in Mexico, including environmental change, gender and indigenous peoples’ politics, social movements, democracy, industrialization and urbanization, social and economic impacts of NAFTA and economic restructuring.

044:115 Cultural Geographies of North America 3 s.h. Historical and contemporary perspectives on the contested cultural geographies of North America; processes underlying the social construction and reproduction of place, region, and place-based identities. Prerequisite: 044:051 or consent of instructor.

044:121 Natural Resources Policy 3 s.h. Geographic, cultural, political, economic, and ethical dimensions of natural resources policy; substantive and theoretical insights from the natural sciences, social sciences, and humanities as parts of a conceptual framework for analyzing current resource problems from a geographic perspective; US natural resource problems and policy questions.

044:122 Environmental Conservation in the U.S. 3 s.h. Varied natural environments of the United States; problems arising from conflicting land uses; consideration of public land use policy, environmental impacts of different land uses, problems of habitat preservation and endangered species. Prerequisite 044:003 or 044:019 or consent of instructor.

044:123 Landscape Ecology 3 s.h. Effects of spatial pattern on spatial processes in ecology; characteristics of matrix, path, corridor; fragmentation, deforestation, habitat loss; spatial flows of energy, matter, genetic information; relationship to human impact, global climate change. Prerequisites: 044:103 or a 100-level course in ecology, and 044:085.

044:124 Gender and the Environment 3 s.h. Relationships between gendered human activities and environmental problems in developed and less-developed regional contexts; women’s work, environment, development, role of women’s activism in environmental movements; science, gender, knowledge of the environment; ecofeminist perspectives. Prerequisite: an introductory environmental studies or women’s studies course. Same as 131:124.

044:125 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: 044:019, and 029:005 or equivalent.

044:126 Wetlands: Function, Geography, and Management 3 s.h. Biotic aspects of water resources production; geographical basis of biophysical processes in drainage basins; spatial aspects of stream ecology; regional characterization of wetland structure and process. Prerequisite: 044:101 or 044:103. Same as 012:126.

044:127 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. Prerequisite: 044:085 or equivalent or consent of instructor.

044:128 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. Prerequisite: 044:080 or 044:108 or consent of Instructor.

044:129 Water Resources Management 3 s.h. Application of hydrological information in water resources management; aspects of water quantity and quality, groundwater availability, water use and treatment, resource development, political and administrative issues; basin management problems-forestry, agriculture, urbanization, floods, droughts. Prerequisite: 044:121 or 044:122 or equivalent.

044:131 Medical Geography 1-3 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 152:131.

044:132 Geography of Contemporary Europe 3 s.h. Physical demographic, and ethnic/cultural landscapes of contemporary Europe; national economies and economic and social integration; transformation of Eastern Europe; comparison of European and U.S. economic development and social policies.
044:133 Introduction to Economics of Transportation 3 s.h.
Geographical transportation markets (intercity, rural, urban) and transportation modes (railways, highways, air carriage, waterways); regulation, finance, physical distribution issues. Same as 06E:145, 102:133.

044:135 Urban Geography 3 s.h.
Central ideas of modern urban geography, their links to social theory; focus on interaction between social change, urban environment; evolution of urban systems, emergence of the capitalist city, urban social and residential differentials, political relations of uneven development. Prerequisite: 044:001 or 044:010 or 044:015.

044:137 Location Theory 3 s.h.
Behavior-based location theories for social and economic activities traced from their classical origins to the contemporary literature where both descriptive (e.g., central place theory) and prescriptive (e.g., location-allocation) models of multiple location decisions exist: relationship between location-allocation models and competition location theory. Prerequisite: 06E:001 or 044:030.

044:139 Locational Models and Spatial Decision Support Systems 3 s.h.
Application of location models within GIS environments to support decision making: small area demographic forecasting, location-allocation regionalization problems, shortest path models, other spatial analysis methods used to support spatial decisions. Prerequisite: 044:005.

044:150 Senior Project Seminar 3 s.h.
Development of a research project and preparation of a research report. Offered spring semester. Open only to seniors.

044:151 Senior Thesis 3 s.h.
Original research. Open only to seniors. Consent of instructor required.

044:157 Third World Development Support 3 s.h.
Critical analysis of theories, policies, programs, practices of Third World development; nature of the social scientific support needed to understand and accelerate the process; analysis of historical trends in the administration of organized development and since its inception in 1945: GE: foreign civilization and culture. Same as 019:157.

044:161 African Development 3 s.h.
Problems of economic, political, social integration in Africa; patterns and processes of economic development and nation building. GE: foreign civilization and culture or social sciences. Prerequisite: 044:094. Same as 030:146, 141:146.

044:162 Work, Gender, and Development 3 s.h.
Gender and class considered through political economy, gender-development theory, and institutional economics; global processes of First/Third World development analyzed; focus on class, gender, and collective action in cooperative enterprises, factory workplaces, and social movements. Prerequisite: 044:094 or graduate standing.

044:163 Geography of the Newly Industrializing Countries 3 s.h.
Newly industrializing countries (NICs) in geographic and historical perspective; U.S. manufacturing base as a backbone in NICs industrialization: off-shore industrial production, women in development, corporate industrialization (CIS), export-led industrialization, theories of industrial location, light-technology industries; the international division of labor; regional profiles taken from the Pacific Rim, Chile, Brazil, Mexico. Prerequisite: 044:094 or another introductory geography and social change requirement.

044:170 Geography of Justice 3 s.h.
Geographical analysis of social and environmental justice; justice from a wide variety of cultural perspectives; cultural struggles over human rights.

044:171 Regions and Regionalism in North America 3 s.h.
Historical and contemporary perspectives on place, regions, and regionalism in North American society. Prerequisites: 044:015 or 044:135 or senior standing or consent of instructor.

044:172 Development Planning and Policy 3 s.h.
Explicit and implicit strategies for economic and social development; goals, formulation, execution, results; policy analysis methods. Prerequisites: 044:085 and 044:094.

044:176 Social Consequences of Global Change 3 s.h.
Social consequences of economic, political transformation; urbanization, technological change, and penetration of global capital; their impacts on gender relations, ethnic identity and significance, other social structures.

044:178 Consequences of Global Environmental Change 3 s.h.
Physical components of global change, their relationship to environmental policy concerns; consequences manifested on local, regional, international scales. Prerequisites: 044:005, 044:105, and 159:008, or consent of instructor.

044:180 Field Methods 2-4 s.h.

044:183 Quaternary Environments 3 s.h.
Same as 012:173.

044:186 Soil Genesis and Geomorphology 3 s.h.
Same as 012:136.

044:188 Geostatistics Seminar 3 s.h.
Same as 012:178.

044:190 Geographies of Popular Music and cultural Politics 3 s.h.
The changing geographies of various genres of American popular music; cultural politics of their social origins, transformation, production, and reproduction. Prerequisite: 044:001 or 044:010 or consent Of instructor

044:194 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. Prerequisite: satisfaction of introductory geography and social change requirements.

044:195 Undergraduate Research arr.
Supervised research in geography. Consent of instructor required.

044:197 Special Topics arr.
Contemporary issues of social, political, and economic development: impacts of rural-urban migration; gender identity as the products and consequences of systems transformation. Prerequisite: 07D:300, 034:274, 042:274.

044:275 Development Policy and Planning in the Third World 3 s.h.
Development policies and planning in Third World countries; important development problems and alternative perspectives on problems and proposed solutions; interdisciplinary seminar. Same as 07F:275, 034:275, 042:275, 102:275, 113:275.

044:276 Special Topics in Political Geography 3 s.h.
Current topics in political geography or geopolitics; intensive readings.

044:281 Medical Geography 3 s.h.
Geographical information systems for health surveillance; spatial patterns of morbidity, mortality; ways of evaluating geographical accessibility problems of special populations. Same as 152:281.

044:285 Crossing Borders Seminar 3-4 s.h.

044:286 Crossing Borders Seminar 3-4 s.h.

044:293 Advanced Landscape Ecology 3 s.h.
Current topics of regional/African development, biophysical systems, GIS. Theoretical bases for understanding the relationship between human society and the natural environment; social construction of nature-ecological models, eco Marxism, culture theory, ecocentrism, poststructural/postmodernist theories, political ecology, environmental history. Prerequisite: 044:121 or consent of instructor.

044:294 Environmental Social Movements 2-3 s.h.
Processes of mobilization and resolution in environmental conflicts, from perspectives of public choice, liberal, radical, post-structuralist theory; relationships to new social movements; applications to environmental movements in First and Third Worlds.

044:299 Geography of the Newly Industrializing Countries 3 s.h.
Newly industrializing countries (NICs) in geographic and historical perspective; U.S. manufacturing base as a backbone in NICs industrialization: off-shore industrial production, women in development, corporate industrialization (CIS), export-led industrialization, theories of industrial location, light-technology industries; the international division of labor; regional profiles taken from the Pacific Rim, Chile, Brazil, Mexico. Prerequisite: 044:094 or another introductory geography and social change requirement.

044:327 Research Seminar: Environment and 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.

044:329 Research Seminar: Water Resources 3 s.h.
Current questions of effects of spatial structure on ecological processes; ecotones and boundaries, population patterns, pattern metrics.

044:362 Political Economy of Regional Development 3 s.h.
The “unequal” relationship between Third World countries and the industrial world; contemporary development problems of Third World societies; form and function of the Third World industrial world relationship, in both external and internal dimensions. Consent of instructor required.

044:363 Agrarian Transitions in the Third World 3 s.h.
Indigenous people, peasant and rural development; gender development theory, agriculture/industrial links, state policy and rural politics, cooperative rural development, rural social movements, (bio) technological change and environmental degradation.

044:365 Transportation Regulation and Finance 3 s.h.
Public policy options for improving passenger and commodity movements within and between cities; air, water, land-based transportation modes. Same as 102:285.

Social consequences of economic and political transformations: impacts of rural-urban migration; gender and ethnicity as the products and consequences of systems transformation. Same as 07D:300, 034:274, 042:274.

044:375 Third World Development and Planning in the Third World 3 s.h.
Development policies and planning in Third World countries; important development problems and alternative perspectives on problems and proposed solutions; interdisciplinary seminar. Same as 07F:275, 034:275, 042:275, 102:275, 113:275.

044:376 Special Topics in Political Geography 3 s.h.
Current topics in political geography or geopolitics; intensive readings.

044:427 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.

044:429 Research Seminar: Water Resources 3 s.h.
Current questions of effects of spatial structure on ecological processes; ecotones and boundaries, population patterns, pattern metrics.
The doctoral degree is required for college and university teaching positions. However, an undergraduate degree is fully satisfactory in certain teaching, government, and industrial situations.

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 is good preparation for all of these.

Each year more than 800 students enroll in 012:003 Earth History and Resources, 012:004 Evolution and History of Life, 012:005 Introduction to Geology, 012:008 Introduction to Environmental Science, and 012:114 Energy and the Environment, all courses approved by the College of Liberal Arts for General Education in natural sciences.

For nonmajors, the department offers a lecture sequence featuring a general survey of geoscience and several intermediate courses with few prerequisites-paleontology, oceanography, remote sensing, earth surface processes (geomorphology), and energy and the environment. Undergraduate Programs

Geoscience majors receive at least an academic year’s work in three allied scientific areas-physics, chemistry, and mathematics-and a semester of biological sciences in addition to a course in each major area of geology.

Students majoring in geoscience must complete the General Education Program of the College of Liberal Arts. It is recommended that they satisfy the foreign language requirement with French, German, Spanish, or Russian, and the social sciences requirement with an approved course in economics, geography, or anthropology. The department offers the Bachelor of Science and the Bachelor of Arts.

Transfer students must complete a minimum of 15 semester hours of course work in the Department of Geoscience for either the B.S. or the B.A. degree.

Bachelor of Science

The Bachelor of Science professional program in geoscience is designed to prepare students for immediate employment after graduation or for entering a graduate program in geology. The B.S. requires a minimum of 38 semester hours of departmental work, including the following course work.

One of these:
012:003 Earth History and Resources 4 s.h.
012:005 Introduction to Geology (preferred) 4 s.h.

All of these:
012:004 Evolution and the History of Life 4 s.h.
012:041 Mineralogy 4 s.h.
012:052 Petrology 4 s.h.

012:092 Structural Geology 4 s.h.
012:093 Geologic Field Methods 2 s.h.
012:113 Summer Field Course 6 s.h.
At least two geoscience electives 6-7 s.h.

One of these:
012:121 Principles of Paleontology 3 s.h.
012:124 Invertebrate Paleontology 4 s.h.

At least 10 semester hours of college-level mathematics, including one of these:
22M:022 Calculus and Modeling II 4 s.h.
22M:026 Calculus II 4 s.h.
22M:036 Engineering Calculus II 4 s.h.
22M:046 Accelerated Calculus with Applications II 4 s.h.

Courses in mathematics, computer science, and statistics can be used to satisfy the mathematics requirement.

B.S. students must complete the following course work in chemistry, physics, and biological sciences (these are minimum requirements).

At least 8 semester hours of college-level chemistry including the following, or equivalents, or more advanced courses; chemistry courses numbered below 004:013 cannot be used to satisfy the chemistry requirement for the B.S. in geoscience.

004:013-014 Principles of Chemistry I-II 6 s.h.
004:016 Principles of Chemistry Laboratory 2 s.h.
or
012:141 Analytical Methods Seminar 2 s.h.

At least 8 semester hours of college-level physics, as follows; physics courses numbered below 029:011 cannot be used to satisfy the physics requirement for the B.S. in geoscience.

029:011-012 College Physics 8 s.h.
or
029:017-018 Introductory Physics I-II 8 s.h.

At least one biological science course that includes a laboratory 4 s.h.

RECOMMENDED OPTIONS

All B.S. candidates should take elective courses from the following groups in order to broaden their undergraduate experiences 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

012:102 Earth Surface Processes 3 s.h.
012:110 Introduction to Applied Remote Sensing 4 s.h.
012:130 Sedimentary Geology 3 s.h.
012:136 Soil Genesis and Geomorphology 3 s.h.
012:138 Fluvial Geomorphology 3 s.h.
012:149 Elements of Geochemistry 3 s.h.
012:153 Geocomputing 1-3 s.h.
012:172 Glacial and Pleistocene Geology 3 s.h.
012:173 Quaternary Environments 3 s.h.
Environmental Geology
012:110 Introduction to Applied Remote Sensing 4 s.h.
012:139 Integrated Watershed Analysis 3 s.h.
012:150 Natural Water Geochemistry 3 s.h.
012:153 Geocomputing 1-3 s.h.
012:166 Hydrogeology 3 s.h.
012:178 Geostatistics Seminar 3 s.h.
012:190 Engineering Geology 3 s.h.
012:180 Principles of Geophysics 3 s.h.
012:184 Groundwater Modeling 3 s.h.

Geochemistry
012:141 Analytical Methods Seminar 2 s.h.
012:149 Elements of Geochemistry 3 s.h.
012:150 Natural Water Geochemistry 3 s.h.
012:152 Isotope Geochemistry 3 s.h.
012:153 Geocomputing 1-3 s.h.
012:155 Igneous and Metamorphic Petrology 3 s.h.
012:166 Hydrogeology 3 s.h.
012:178 Geostatistics Seminar 3 s.h.

Tectonic/Petrology
012:141 Analytical Methods Seminar 2 s.h.
012:149 Elements of Geochemistry 3 s.h.
012:152 Isotope Geochemistry 3 s.h.
012:153 Geocomputing 1-3 s.h.
012:155 Igneous and Metamorphic Petrology 3 s.h.
012:180 Principles of Geophysics 3 s.h.
012:181 Exploration Geophysics 3 s.h.
012:191 Geotectonics 3 s.h.

Sedimentary Geology
012:108 Introduction to Oceanography 2 s.h.
012:130 Sedimentary Geology 3 s.h.
012:149 Elements of Geochemistry 3 s.h.
012:152 Isotope Geochemistry 3 s.h.
012:153 Geocomputing 1-3 s.h.
012:161 Advanced Stratigraphy 3 s.h.
012:181 Exploration Geophysics 3 s.h.
012:191 Geotectonics 3 s.h.

Paleobiology
012:108 Introduction to Oceanography 2 s.h.
012:121 Principles of Paleontology 3 s.h.
012:122 Evolution of the Vertebrates 2 s.h.
012:124 Invertebrate Paleontology 4 s.h.
012:130 Sedimentary Geology 3 s.h.
012:149 Elements of Geochemistry 3 s.h.
012:153 Geocomputing 1-3 s.h.
012:178 Geostatistics Seminar 3 s.h.
012:191 Geotectonics 3 s.h.

Bachelor of Arts

The B.A. degree in geoscience is designed to provide students with a varied background in geology and a broader choice of electives than is practical in the B.S. program. The B.A. is intended for students who are interested in the fundamentals of geology or earth science teaching [see the College of Education section of the Catalog]. Completing the minimum requirements for this degree may not adequately prepare a student for an entry-level professional job in geology. The B.A. requires a minimum of 35 semester hours of departmental work, including the following required course work.

*One of these:
012:003 Earth History and Resources 4 s.h.
012:005 Introduction to Geology 4 s.h.
012:008 Introduction to Environmental Science 4 s.h.

*Students may not earn credit for both 012:003 and 012:005, but they may earn credit for 012:008 in addition to either 012:003 or 012:005. Students planning careers in the environmental sciences should take 012:008 (see Environmental Science degree program).

Both of these:
012:041 Mineralogy 4 s.h.
012:052 Petrology 4 s.h.

One, two, or all of these:
012:004 Evolution and the History of Life 4 s.h.
012:009 Historical Geology 3 s.h.
012:121 Principles of Paleontology 3 s.h.

One to four of these:
012:092 Structural Geology 4 s.h.
012:130 Sedimentary Geology 3 s.h.
012:136 Soil Genesis and Geomorphology 3 s.h.
012:166 Hydrogeology 3 s.h.

B.A. students must complete the following course work in mathematics and chemistry (these are minimum requirements):

College-level mathematics (may include computer science and statistics) 10 s.h.

At least 8 semester hours of college-level chemistry (either Group 1 or Group 2); chemistry courses numbered below 004:007 cannot be used to satisfy the chemistry requirement for the B.A. in geoscience.

Group 1:
004:007-008 General Chemistry I-II 6 s.h.
012:141 Analytical Methods Seminar 2 s.h.

Group 2:
004:013-014 Principles of Chemistry I-II 6 s.h.
004:016 Principles of Chemistry Laboratory 2 s.h.
or
012:141 Analytical Methods Seminar 2 s.h.

FIELD REQUIREMENT
Students may take two semesters of 012:016 or 012:018 or 012:116, or they may take one semester each of two of these courses (total of 4 semester hours). Or they may take one semester of either 012:093 or 012:113, or the Lakeside session.

012:016 Field Trip 2, 4 s.h.
012:018 Geology Field Trip: Selected National Parks 2, 4 s.h.
012:116 Field Trip 2, 4 s.h.
012:093 Geologic Field Methods 2 s.h.
012:113 Summer Field Course 6 s.h.
One natural science session at Iowa Lakeside Laboratory

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 B.A. degree requires 17-18 courses, and the B.S. requires 18.

Geoscience degrees require field trip experiences, many of which take place during vacation periods or during between semesters, or during the summer session. This listing does not show the field trip requirements.

Before the third semester begins: competence in math through trigonometry, first required chemistry course, and at least one-quarter of the semester hours required for graduation

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) and at least one-half of the semester hours required for graduation

Before the seventh semester begins: seven to eleven courses in the major and at least three-quarters of the semester hours required for graduation

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
Qualified students may earn a degree with honors in geoscience. Honors program students must elect a senior thesis and maintain a cumulative grade-point average of at least 3.20 in order to graduate with honors.

National Honor Society

The department sponsors a chapter of Sigma Gamma Epsilon National Earth Science Honor Society. Students with an overall grade-point average 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 semester hours of course work in geoscience. Consult the departmental honors adviser for more information.

Minor

A minor requires at least 15 semester hours of geoscience courses with a grade-point average of 2.00 or higher. At least 12 of the 15 semester hours must be earned in advanced geoscience courses taken at The University of Iowa. All geoscience courses numbered 100 and above, except 012:103 Physical Geology, may be taken as advanced courses. In addition, 012:041 Mineralogy, 012:052 Petrology, and 012:092 Structural Geology are considered advanced courses for the minor.

College-level courses in mathematics, physics, chemistry, and biological sciences usually are required as collateral work for geology 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.

012:041 Mineralogy 4 s.h.
012:052 Petrology 4 s.h.
012:092 Structural Geology 4 s.h.
012:121 Principles of Paleontology 3 s.h.
012:130 Sedimentary Geology 3 s.h.
012:136 Soil Genesis and Geomorphology 3 s.h.
012:180 Principles of Geophysics 3 s.h.

Joint Programs

Joint programs can be arranged, usually with chemistry, physics, biological sciences, environmental engineering, environmental science, and anthropology.

Independent Research

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 or may initiate a small-scale project involving a combination of field, laboratory, and library investigation. Independent study is encouraged and may result in honors or senior theses that subsequently are published.

Graduate Programs

The Department of Geoscience offers the M.S. in geoscience, with or without thesis, and the Ph.D. in geoscience.

All geoscience graduate students are responsible for meeting requirements and deadlines. They should acquaint themselves with the Manual of Rules and Regulations of the Graduate College—particularly sections IX, X, and XII (see the Graduate College section of the Catalogue and with the University calendar for deadline dates and so forth).

New graduate students receive a handout that provides detailed information about graduate degree requirements. The information also is available on the department’s web site.

Entering graduate students are required to enroll in 012:207 Geologic Orientation. By the first month of their second semester in residence, they must select an adviser. Also during their second semester in residence, they consult with faculty members to arrange for an advisory committee, which will help them plan their degree program.

Throughout their graduate study, all M.S. and Ph.D. students must maintain a grade-point average of at least 3.00 on all course work required for their degree and on 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 program is designed primarily to prepare students for professional careers in geoscience, or for more advanced studies. It requires a minimum of 30 semester hours of graduate credit. No more than 8 of the 30 semester hours can be earned in research. At least 24 semester hours must be completed in residence at The University of Iowa.

Master’s degree 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 before the end of the second semester of full-time study.

Master’s students are required to deliver a half-hour public presentation of the thesis, followed by an oral defense, supporting research, and related topics. They also must take a final examination, for which members of their advisory committee act as examiners.

Nonthesis Option

The Master of Science without thesis is designed for students with extensive geological background and experience. Individuals interested in pursuing the nonthesis option must obtain permission from the department chair.

Requirements for the nonthesis option are similar to those for the M.S. with thesis, except that in lieu of the thesis the student must submit a manuscript that his or her thesis committee deems acceptable for submission for publication. The student may choose to submit a previously published manuscript. Nonthesis students also must take a final examination that covers course work and the work done in lieu of the thesis.

Doctor of Philosophy

The Ph.D. program is designed primarily to train students to be independent researchers and/or teachers, and to bring students to the forefront of a specialized area of geoscience. It requires a minimum of 72 semester hours of graduate-level credit. At least two semesters beyond the first 24 semester hours earned in graduate work must be spent in full-time study (9 semester hours per semester) in residence at The University of Iowa.

Ph.D. students usually enter the program with established fields of interest and a research adviser already selected. Under exceptional circumstances, a student may be admitted to the Ph.D. program without an established field of interest.

During the first semester of study, students consult with faculty members and their adviser to select course work and to choose a faculty committee for the comprehensive examination. Students should complete most of their course work before taking the comprehensive examination, which consists of both written and oral portions and which must be passed before the end of the second year of doctoral study.

Once candidates have passed the comprehensive examination, they are required to register each semester until they receive the Ph.D. degree. Candidates who have completed their plan of study may register for 000:000 Ph.D. Postcomprehensive Registration and pay a minimum registration fee.

Doctoral candidates, in consultation with their adviser and other faculty members, prepare a formal dissertation proposal, which must be submitted to the chair of the geoscience department by the beginning of the fifth semester of the candidate’s full-time doctoral study and before the bulk of the research is completed. The proposal must receive unanimous approval from the dissertation committee. The written dissertation must be available to the committee at least two weeks before the final examination. All Ph.D. candidates must deliver a one-hour public presentation associated with the dissertation defense.

Admission

To be considered for admission to a graduate program in geoscience, applicants must: hold a bachelor’s degree from a college or university accredited by a regional accrediting association, and have a grade-point average of at least 3.00 (for M.S. applicants) or at least 3.20 (for Ph.D. applicants), or score 1600 or higher on the combined verbal, quantitative, and analytical portions of the Graduate Record Exam. Students may be admitted on conditional status with a grade-point average of at least 2.30 (for M.S. applicants) or at least 2.70 (for Ph.D. applicants). Graduate students admitted on conditional status must enroll in at least 8 semester hours of graduate-level course work during each session and must attain regular status at the end of the second session of registration.

The department also admits students who are not candidates for a degree. Such students, called professional improvement students, must meet the same standards as applicants to the master’s program.

International applicants whose first language is not English must score 550 or higher on the TOEFL paper-based test or 213 or higher on the computer-based test.

Financial Support

The Department of Geoscience offers merit-based graduate assistantships. All admitted graduate students are eligible for assistantships.

Master’s students may hold an assistantship for two academic years and Ph.D. students for up to five, depending on whether and where they earned an M.S. degree. In order to retain their appointments from semester to semester, students must perform satisfactorily in the assistantship and must continue to make satisfactory progress toward completion of their
degree. Students who begin graduate study without an assistantship may become eligible for one as appointments become available.

Students must demonstrate proficiency in English before they can be considered for a teaching assistantship. Teaching assistants are evaluated each semester for teaching proficiency and communication skills, through student evaluations and observation by a supervising instructor. Research assistantships are typically funded by individual faculty grants and vary depending on the nature of the funded project. Duties often involve activities such as sample collection and preparation; collection, analysis, and interpretation of analytical or measurement data; preparation of maps and diagrams; and assistance with fieldwork.

Outstanding students who are entering their first year of graduate school and are enrolled in the Department of Geoscience include the following.

### Cooperative Activities

The department does collaborative work with the Iowa Geological Survey Bureau, which has a subsurface-core repository and GIS lab, is located in the same building as the department.

### Facilities

Resources and equipment available for research in the Department of Geoscience include the following.

- Computer facilities: four networked PC teaching classrooms; a high-end SGI-UNIX teaching classroom with GIS, GMS, remote sensing, image analysis, and computational software packages; a number of multiprocessor SUN and SGI workstations; IBM RISC-6000 workstations; high-end SGI servers
- Environmental and Hydrogeology Laboratory: permeameters and tensionometers; pumping and slug/ball 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); field instrumentation design and construction facilities
- Geomorphic Computing Laboratory: high-end SGI visualization systems (SGI onyx reality engine); high-end digitizing remote sensing and GIS systems; high-end SGI and SUN multiprocessors workstations
- Morphometric laboratories: a reflex microscope for capturing 3-D data; high-resolution digital cameras and microscopes for 2-D image analysis; labs 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, more than 90 percent Paleozoic invertebrates; fifth-largest university collection in North America (CONARIP 1971); editorial office of the Journal of Paleontology

Petrology laboratories: computer-assisted XRD; alpha-spectrometry laboratory; wet-chemistry facilities; rock preparation and mineral separation

Sedimentary geology laboratories: water ion chromatograph; Rock-Eval; Image analysis; Sedigraph X-ray particle-size analyzer; soil/sediment characterization laboratory

Stable Isotope Laboratory: a Finnigan MAT 252 IRMS; Kel II carbonate reaction device; H/device; Gashench II; IsoCarp automated micro-sampling device

Thin-section and rock preparation laboratory

The department also houses the geology departmental library, with more than 30,000 volumes, and journals and 70,000 maps. The Iowa Geological Survey Bureau, which has a subsurface-core repository and GIS lab, is located in the same building as the department.

Field trips are integral parts of several courses in geoscience, with frequent weekend general-interest events. The geology of the Iowa City region is characterized by a layer of glacial drift on a largely Paleozoic sedimentary section a few hundred meters thick, overlain by 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, pedology, and fossil biotas from both glacial and interglacial deposits.

Spring break provides time for longer trips, which are open to all geoscience students. In recent years, students have traveled to Hawaii, Puerto Rico, Death Valley, the Florida Keys, the southern Appalachians, Arizona, New Mexico, Texas, and the Ozarks. Advanced classes have visited Colorado, Kansas, Oklahoma, Wisconsin, California, and Ontario, Canada.

### Courses

Not all courses are offered every year.

#### Primarily for Undergraduates

012:000 Cooperative Internship in Geology 0 s.h.

- Practical experience. Consent of instructor required.
- Prerequisites: grade of C or higher in 012:052 and 3.00 grade-point average in geology.

012:001 Lectures in Earth History and Resources 2 s.h.

- Major types of rocks; processes by which they formed; use and misuse of earth's resources. Same as 012:003 without lab.

012:002 Lectures in Introduction to Environmental Science 2 s.h.

- Same as 012:006 without lab.

012:003 Earth History and Resources 4 s.h.

- Relationship of volcanoes and igneous, metamorphic rocks; absolute versus relative time; landscape evolution; mountain building; continental drift; relationship of resources to expanding human populations. Offered fall semesters. GE: natural sciences.

012:004 Evolution and the History of Life 4 s.h.

- Fossils over past 3.5 billion years; methods used to interpret their succession, evolutionary relationships. Offered spring semesters. GE: natural sciences.

012:005 Introduction to Geology 4 s.h.

- Rocks and minerals, surface processes (rivers, glaciers, etc.), major earth processes (mountain building, plate tectonics). GE: natural sciences.

012:006 Lectures in Evolution and the History of Life 3 s.h.

- Survey of fossils over the past 3.5 billion years; methods used to interpret succession and evolutionary relationships. GE: natural sciences. Same as 012:004 without lab.

012:008 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. Same as 159:008.

012:009 Historical Geology 3 s.h.

- Geologic principles through geology of eastern Iowa. Prerequisite: course in earth science or geology.

012:010 Honors Thesis in Geoscience arr.

- Independent research resulting in an honors thesis. Open only to honors students.

012:011 Senior Thesis in Geoscience arr.

- Independent research resulting in a senior thesis. Open only to seniors.

012:016 Field Trip 2 s.h.

012:017 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. Prerequisite: introductory geology course or consent of instructor.

012:018 Geology Field Trip: Selected National Parks 2 s.h.

- Observation, interpretation of salient geologic geographic, biological features; semester-end visits to different parks each year. May be repeated. Offered spring semesters. Consent of instructor required.

012:019 Directed Study arr.

- Special topics, independent research. May be repeated. Consent of instructor required.

012:020 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). Open only to first- and second-semester students.
For Undergraduate and Graduate Students

01:100 Geologic Teaching Assignment 1-3 s.h.
Practical experience. Consent of instructor required.
Prerequisites: grade of C or higher in 01:252 and 3.00 grade-point average in general education.

01:102 Earth Surface Processes 3 s.h.
Basic geomorphic, environmental processes that shape the earth's surface; emphasis on weathering-mass movement (e.g., landslides, earth flow), erosion, weathering, deposition by fluid agents (wind, water, ice); methods used to study these processes. Prerequisites: 01:025 or 01:032 or 044:003 or 159:008 or consent of instructor Same as 159:102.

01:103 Physical Geology 2-3 s.h.
Processes that have generated and continue to alter our physical environment; composition and inhomogeneity of the earth from atomic to planetary level, relative to resource requirements; weathering, erosion, rock deformation, volcanism, mountain building, earthquakes; geomagnetism, continental drift.

01:104 Climatology 1 s.h.
Same as 044:101.

01:108 Introduction to Oceanography 2 s.h.
Descriptive, chemical, physical, biological, geological aspects of oceanic environments. Offered spring semesters. Recommended knowledge of basic chemistry, biology, physics, earth science.

01:110 Introduction to Applied Remote Sensing 1 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. Prerequisite: college physics or physical geology or equivalent. Same as 159:110.

01:113 Summer Field Course 6 s.h.
Description, mapping of rock units, geologic structure in Waucaht and Uinta Mountains, Park City, Utah. Offered summer sessions. Prerequisites: 01:041, 01:052, 01:092, and 01:093.

01:114 Energy and the Environment 3 s.h.
Geologic processes and environments responsible for formation of petroleum, coal, uranium; development of alternative fuels; environmental impact of exploration, production, use of fossil and alternative fuels. GE: natural sciences. Prerequisite: college-level earth science course or graduate standing or consent of instructor.

01:116 Field Trip 2 s.h.
Area of geologic interest, such as carbonate area of Florida, Rio Grande Rift (New Mexico), Death Valley (California, Nevada). Appalachian Mountains (Virginia). May be repeated. Offered spring break. Consent of instructor required.

01:119 Directed Study arr.
Special topics, independent research. May be repeated. Consent of instructor required.

01:120 Collection Care and Management arr.
Same as 024:120.

02:100 Geomorphology 3 s.h.
Principles of soil classification, soil profile description; influence of geologic materials, climate, biota, geomorphic processes on soil development; labs, field project. Prerequisites: college-level earth science and chemistry. Same as 044:186.

02:115 Principles of Palaeontology 1 s.h.
Patterns of evolution in fossil record; systematic, biostatigraphic, morphometrics, analysis of evolutionary relationships; paleoecology, paleoenvironmental interpretation; large-scale biotic and climatic change.

02:122 Evolution of the Vertebrates 1 s.h.
Vertebrate evolutionary record in geologic record; taxonomic, stratigraphic, paleoecological concepts of selected taxa, especially dinosaurs. Junior standing required. Prerequisite: introductory anthropolgy, zoology, or paleontology.

02:124 Geologic Field Methods 2 s.h.
Principles and techniques of basic geologic mapping in the Black Hills of South Dakota and Bighorn Mountains of Wyoming. Offered in first two weeks of June. Prerequisite: 01:052.

02:125 Geocomputing 1.5 s.h.
Computer applications in geoscience; visualization, data management, interactive modeling, computer graphics. Same as 159:153.

02:126 Field Geology 1 s.h.
Nature, origin of igneous and metamorphic rocks. Offered spring semesters. Prerequisite: 02:052 or consent of instructor.

02:156 Scanning Electron Microscopy and X-ray Microanalysis 1 s.h.
Theory, operation, applications of scanning electron microscopy and X-ray microanalysis for advanced students, staff, investigators. Same as 052: 156, 608: 156.

02:161 Advanced Stratigraphy 1 s.h.
Genesis of sedimentary rocks, geologic time, stratigraphic nomenclature, biostatigraphic and physical correlation methods, mass extinctions, sequence stratigraphy, basin analysis and modeling, stratigraphic field methods. Offered fall semesters. Prerequisite: 02:052 or consent of instructor.

02:165 Transmission Electron Microscopy and X-ray Microanalysis 1 s.h.
Theory, operation, applications of STEM, TEM, thin film X-ray analysis techniques; specimen preparation techniques including metals, glass, ceramics, minerals. Consent of instructor required. Same as 052:157.

02:166 Hydrogeology 1 s.h.
Groundwater geology; regional aquifer systems, groundwater contamination and remediation, principles of groundwater flow and contaminant transport, slug/ball and pumping test and analysis. Senior or graduate standing required.

02:172 Glacial and Pleistocene Geology 1 s.h.
Interactions among glaciers, oceans, and climate; glacier dynamics; evolution of periglacial material and landscapes; Pleistocene stratigraphy. Prerequisites: physical geology, physical geography, or anthropology.

02:173 Quaternary Environments 1 s.h.
Archaeological, botanical, zoological, physical, chemical means of reconstructing ice-age environments; techniques, results; interdisciplinary approach; seminar format emphasis on speaking, writing. Consent of instructor required. Same as 044:185.

02:174 Quaternary Seminar 1 s.h.
Paleocology, paleoecology, archaeology, geomorphology, glacial geology, other fields that deal with environments of the past 2.5 million years. Same as 113:177.

02:175 Paleocology of Quaternary Mammals 1 s.h.
Identification, biogeography, taphonomy, paleoecology of Pleistocene, Holocene small mammals recovered from paleontological and archaeological sites. Prerequisite: 02:122 or consent of instructor.

02:178 Geostatistics Seminar 3 s.h.
Applications of variograms and kriging to geology, geography, hydrology, GIS, GEO-EAS, and GEOPACK computer programs used to analyze spatially-varied data collected in participants' specialties Prerequisite: 225:120 or equivalent or consent of instructor. Same as 044:188.

02:179 Engineering Geology 1 s.h.
Geologic principles applied to environmental problems for geologists, civil engineers, and environmentalists, including dam failure, avalanches, erosion control, tunneling, strip-mine reclamation, landfill, septic systems, river management, floods, coastal management. Senior standing in science or engineering required.

02:180 Principles of Geophysics 1 s.h.
Earth's physical nature, and consequences for our environment and its geologic development; internal structure, earthquakes and their prediction, seismic and gravimetric field and paleomagnetism, heat flow, radioactivity and age dating, physical methods to monitor the terrestrial environment. Prerequisites: introductory geology and physics.

02:181 Exploration Geophysics 1 s.h.
Techniques used in exploration for oil and gas, minerals, groundwater and subsurface structure: gravity, magnetic, seismic, electrical, and electromagnetic methods. Offered spring semesters. Prerequisite: 02:180; or college geology, physics, and mathematics; or consent of instructor.
Courses

012:183 Geophysical Subsurface Analysis 2 s.h.
Analysis, interpretation, and visualization of three-dimensional geophysical and geologic data (seismic, electric, petrologic, core fluid); implementation of current industry software; applications to petroleum and mineral resource exploration.

012:184 Groundwater Modeling 3 s.h.
Principles and equations of groundwater flow and contaminant transport in aquifers; numerical methods; applications of groundwater modeling software; GMS (MODFLOW, MODPATH, and MT3D). Prerequisites: 012:166, and 22M:026 or 22M:036. Same as 031:104.

012:188 Environmental Seminar 1 s.h.
Emphasis on current research; hydrogeology, erosion control, land restoration, public health effects of water supplies.

012:191 Geotectonics 3 s.h.
Dynamic processes responsible for crustal genesis, plate tectonics, land restoration, public health effects of water supplies.

012:188 Environmental Seminar 1 s.h.
Presentation, discussion of undergraduate research projects. Consent of department chair required.

012:191 Geotectonics 3 s.h.
Dynamic processes responsible for crustal genesis, plate movements, mountain building; evidence for continental drift, mid-ocean spreading, plate tectonic theory; sedimentologic, structural, petrologic; geophysical characteristics of major tectonic settings; multidisciplinary approach. Prerequisite: 012:092.

012:192 Scientific Writing and Presentation 3 s.h.
Hands-on instruction to all aspects of writing and editing scientific manuscripts and preparing oral and poster presentations; use of PC for word processing, data manipulation and plotting, drafting, photography, and transfer to output devices.

012:195 Field Methods: Environmental Processes 2-4 s.h.
Problem definition and research design in a field setting; sampling theory and procedures; collection of primary data using different sensor and recording methods; data analysis and interpretation of processes in geologic, climatic, and environmental research. Prerequisite: 12 semester hours of geology, or equivalent, or consent of instructor. Same as 031:180.

012:197 Environmental Field Sampling I 1 s.h.

012:198 Environmental Field Sampling II 1 s.h.
Field laboratory methods for collection and description of water and gas samples; sample preservation, chain of custody procedures.

012:199 Hydrogeologic Methods 1 s.h.
Basic field techniques in hydrogeology; well installation, pumping and slug tests, water level management.

Primarily for Graduate Students

012:207 Geologic Orientation 1 s.h.
Degree requirements, programs; field survey of local geology; gshare- and skills, specialized facilities. Graduate standing or consent of instructor required.

012:225 Paleontology Seminar 1-3 s.h.
Current controversial issues in paleontology may be repeated. Recommended: 012:121.

012:233 Sedimentary Petrology 4 s.h.
Identification of constituents and interpretation of provenance/geologic, structures, environments of formation, patterns and processes of diagenesis in sandstones and limestones; laboratory-based. Familiarity with optical microscope and principles of sedimentation, and graduate standing or consent of instructor required.

012:234 Sedimentary Petrology Seminar 1-3 s.h.
May be repeated.

012:235 Depositional Environments 3.4 s.h.
Modern patterns of sedimentation; emphasis on interpreting depositional environments of ancient sedimentary rocks and deciphering resulting stratigraphic patterns. Prerequisites: knowledge of basic sedimentary geology and paleontology.

Hydrologic principles, stream channel processes, and fluvial geomorphology within drainage basin system; spatial and temporal variations in water distribution, analysis of hydrological data, flow mechanisms, sediment transport, forecasting procedures, hydrograph construction, modeling.

012:239 Advanced Watershed Analysis Seminar. arr.
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.

012:251 Igneous Petrology 3 s.h.
Phase equilibria, isotopic and trace element geochemistry; solid solutions, chemical potential diagrams, ionics activities in mixed aqueous electrolytes, silicate melts, retrieval of thermodynamic data, evaluation of thermodynamic databases, nucleation, reaction rates, calculation of thermodynamic properties of minerals, melts and fluids in natural geologic systems. Prerequisite: 012:149 or consent of instructor.

012:255 Metamorphic Petrology 3 s.h.
Nature, origin of metamorphic rocks using thermodynamics, experimental data, geologic observations. Prerequisite: 012:052, or 012:141 or 012:155, or consent of instructor.

012:257 Tectonics and Petrology Seminar 1-2 s.h.
Tectonics, structural geology, petrology. Consent of instructor required.

012:267 Applied Hydrogeology Seminar 2 s.h.
Environmental hydrogeological problem-solving, using upper Midwest as framework and team research as learning mechanism. Prerequisite: 012:166 or engineering equivalent.

012:272 Advanced Scanning Electron Microscopy 3 s.h.
Theoretical and practical aspects of high-resolution scanning electron microscopy, advanced electron beam specimen interaction, image analysis, signal processing techniques in a wide variety of applications using state-of-the-art equipment. Consent of instructor required. Prerequisite: 012:156. Same as 031:272.

012:277 Wetlands 3 s.h.
Wetland hydrology, constructed wetlands; a midwestern perspective: seminar with field trips. Graduate standing required. Prerequisite: 012:166 or equivalent.

012:278 Reclamation and Restoration Seminar 3 s.h.
Reclamation and restoration of damaged landscapes; streams, wetlands, upland components; focus on ecosystem enhancement. Prerequisite: 012:179 or equivalent. Recommended: a college-level ecology course.

012:280 Seminar Geophysics 1-2 s.h.
High-pressure geophysics, exploration geophysics, physical properties of rocks, computer processing of data.

012:281 Gravity and Magnetic Exploration 3 s.h.
Basics, techniques, applications of seismic methods of geophysical prospecting; lab work in data acquisition, interpretation. Prerequisite: 012:181.

012:282 Seismic Exploration 3 s.h.
Basics, techniques, applications of seismic methods of geophysical prospecting; data acquisition, analysis and processing, interpretation. Prerequisite: 012:181.

012:293 Advanced Structural Geology 3 s.h.
Kinematic and dynamic analyses of deformed rocks; microstructural analysis; strain analysis, field investigations of highly deformed rocks. Prerequisites: 012:092 and one year of calculus.

012:300 Research: Summer Field and Laboratory arr.
May be repeated.

012:301 Research: General Geology arr.
May be repeated.

012:315 Research: Ground Water arr.
May be repeated.

012:320 Research: Palaeontology arr.
May be repeated.

May be repeated.

012:350 Research: Petrology arr.
May be repeated.

012:360 Research: Stratigraphy arr.
May be repeated.

012:370 Research: Geomorphology and Pleistocene Geology arr.
May be repeated.

012:375 Research Environmental Geology arr.
May be repeated.

012:385 Research: Geophysics arr.
May be repeated.

012:390 Research: Structural Geology arr.
May be repeated.

Undergraduate Program

The following course sequences, or their equivalents, are required for students who begin a major in German with no previous experience in the German language.

Basic Program

013:011 Elementary German I 4 s.h.
013:012 Elementary German II 4 s.h.
013:021 Intermediate German I 4 s.h.
013:022 Intermediate German II 4 s.h.

The basic program also may be satisfied by various combinations of 013:013, 013:014, and 013:025. See the German department undergraduate adviser for details.

Students majoring in German choose one of two major tracks: the humanities track or the applied German track. Students who plan to complete the undergraduate teaching major in German in conjunction with the College of Education (see the College of Education section of the Catalog) may choose either the humanities track or the applied German track. At least five upper-level German courses must be taken at The University of Iowa. Students who have upper-level course work from other institutions should consult with the German Department undergraduate major adviser to determine how much work remains for completion of the major.
HUMANITIES TRACK

The humanities track enables students to concentrate on German language, literature, and culture, both past and present. It is recommended for students who want to explore the world of German ideas and their influence through the ages.

*013:101 Introduction to German Literature 3 s.h.
*013:103-104 Composition and Conversation I-II 6 s.h.
013:105 German Cultural History 3 s.h.
013:110 Eighteenth-Century German Literature 3 s.h.
013:111 Nineteenth-Century German Literature 3 s.h.
013:112 Twentieth-Century German Literature 3 s.h.
013:116 Advanced Composition and Conversation 3 s.h.
013:198 Undergraduate Special Topics 3 s.h.

An elective from the 100-level courses offered by the department, excluding courses in which works in German are taught in English translation 3 s.h.

*013:101 is prerequisite for all other literature courses.

APPLIED GERMAN TRACK

The applied track gives students practical skills and proficiency in German for business and government. It is especially useful when combined with a business-oriented curriculum.

The College of Liberal Arts and the College of Business Administration offer a joint program leading to an International Business Certificate. For details, see “International Business” in this section of the Catalog.

013:103-104 Composition and Conversation I-II 6 s.h.
013:107 Introduction to German Linguistics 3 s.h.
013:108 The German Media 3 s.h.
013:114 Business German 3 s.h.
013:115 Contemporary German Civilization 3 s.h.
013:116 Advanced Composition and Conversation 3 s.h.
013:198 Undergraduate Special Topics 3 s.h.
013:014. 025
013:013, 025

An elective from the 100-level courses offered by the department, excluding courses in which works in German are taught in English translation 3 s.h.

German majors, both graduate and undergraduate, are urged to supplement their degree programs with relevant courses in areas such as German history, philosophy, and business.

Teaching Licensure in German

German majors interested in licensure to teach in elementary and/or secondary schools must successfully complete the requirements for a major in German and must be admitted to the University of Iowa. All courses numbered 100 and above count toward the minor except 013:123 and courses in which works in German are taught in English translation.

language for Nonmajors

The department offers a number of opportunities for students who wish to study German. Students who have had experience with the language should take the German Foreign Language Placement Test, offered during summer orientation programs and monthly by Evaluation and Examination Service. The test 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 013:011 Elementary German I. Students with experience in language learning may prefer to enroll in 013:013 Intensive Elementary German, an accelerated introduction that offers the equivalent of a full year of study in one semester.

Students who wish to use German to satisfy the foreign language requirement of the General Education Program can choose from a number of course sequences. All of the following satisfy the requirement. Students are encouraged to talk with departmental advisers about the various sequences.

013:011, 012, 021, 022
013:013, 021, 022
013:014, 021, 022
013:011, 012, 025
013:013, 025
013:014, 025

Graduate Programs

Master of Arts

The department offers the Master of Arts both with and without thesis. The M.A. without thesis is considered a terminal degree.

Students must complete a minimum of 33 semester hours of qualifying course work to complete the M.A. degree.

M.A. students may elect a concentration in either Germanic linguistics (including second language acquisition) or German literature. Those who have not completed major courses or their equivalents in the department’s undergraduate program must take those courses along with the courses required for the M.A. Some candidates may qualify for graduate credit for such work.

With the graduate adviser’s approval, students may take some of the required 33 semester hours outside the department in related subjects, such as philosophy, history, linguistics, or other languages.

Students who elect to pursue the M.A. with thesis must submit a prospectus within a month after the M.A. examination, and they must complete the thesis no later than eight months after they take the M.A. examination.

Usually students may receive 2 semester hours of credit for satisfactory completion of the
thesis. The semester hours are in addition to the 33 semester hours required for the M.A. The thesis topic may be either linguistic or literary and is subject to approval by the faculty.

Candidates must present an oral defense of the thesis. If the thesis is deemed acceptable, the faculty considers the candidate’s application for formal admission to the Ph.D. program.

**Doctor of Philosophy**

The Ph.D. is awarded upon satisfactory completion of a minimum of 72 semester hours of graduate credit and fulfillment of other requirements of the Department of German and the Graduate College (see the Graduate College section of the Catalog). Students may elect a concentration in either Germanic linguistics (including second language acquisition) or German literature.

Credit received toward the M.A. usually is applied to the Ph.D. Students may earn up to 12 of the required 72 semester hours for satisfactory completion of the Ph.D. dissertation.

Graduate courses in related subjects outside the department may be counted toward the degree with the approval of the graduate adviser.

**Graduate Degree Language Tools**

**Master of Arts**

Before taking the M.A. exam, candidates must demonstrate a 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.

Competence may be demonstrated either by submitting proof of having taken the required course work with a grade-point average of 3.00 or higher or by passing an exam at the fourth-semester college level as determined by the appropriate language department.

**Doctor of Philosophy**

Candidates must demonstrate a reading knowledge of two languages determined by the adviser to be pertinent to the candidate’s research interests.

Competence may be demonstrated by the methods described under “Master of Arts.”

**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.

**Study Abroad**

**Summer Program in Austria**

The Department of German participates in the Summer Program in Austria. Sponsored by The University of Iowa and Iowa State University, this program is open to students in all disciplines.

A three-week session is conducted at St. Radegund, near Graz, Austria. Instruction in both language and culture is provided at appropriate levels. A second four-week session is held in Vienna, where faculty of the International University at the University of Vienna conduct morning classes daily, again at several levels. An independent travel period is scheduled during the program.

To participate, students must be admitted to The University of Iowa or Iowa State University for the summer session. Applicants should have a good basic knowledge of German—usually two years of college-level German or the equivalent. Students with less than two years may be accepted with the approval of the campus coordinator.

The study abroad program is intended primarily for undergraduates, but graduate students also may apply. All students are expected to speak only German while participating in the program. Grants are available for qualified applicants.

Students register for 013:109 Regents Program Abroad in Austria. Contact the Department of German for more information.

**Academic Year in Freiburg**

The Department of German participates in an academic year abroad program for undergraduates at the Albert-Ludwigs-Universitat in Freiburg, Germany. The Freiburg program is offered by a consortium made up of Michigan State University, The University of Iowa, 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. Following this, students take a blend of special program classes and regular German university courses. Organized field trips are designed to give students a broader perspective of German culture. Vacation periods permit extensive travel throughout Europe, and students are encouraged to use weekends for shorter trips in the region.

To be eligible for application to this program, students must have achieved at least junior standing by the beginning of the program, have completed at least the first four semesters of college German or the equivalent, and be a student in good academic standing at a United States college or university.

Students earn resident credit in all courses successfully completed in the program. Credit is applicable towards requirements for a German major or minor. Students in other majors should consult with their adviser or the undergraduate director in their department.

Contact the Department of German or the Office for Study Abroad for more information.

**Special Facilities**

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 computer-assisted instruction program.

An extensive collection of works and periodicals in the University Libraries facilitates research in all major areas of German literature and Germanic linguistics and at all levels of study.

The International Crossroads Community is an on-campus housing option for undergraduate and graduate students.

**Courses**

**Primarily for Undergraduates**

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<td>013:025</td>
<td>Intensive Intermediate German</td>
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<td>013:029</td>
<td>First-Year Seminar</td>
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<td>013:101</td>
<td>Introduction to German Literature</td>
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013:107 Introduction to German Linguistics 3 s.h.
Phonology, morphology, syntax, semantics, historical development. Taught in German. Prerequisite: 013:022 or equivalent.

013:108 The German Media 3 s.h.
Reading and listening skills: comprehension, reading speed, passive vocabulary building, scanning and skimming, parsing complex constructions through media accounts of current events. Taught in German. Offered fall semesters of odd years. Prerequisite: 013:025 or equivalent.

013:109 Regents Program Abroad in Austria arr.
See “Study Abroad” in this section of the Catalog.

013:110 Eighteenth-Century German Literature 3 s.h.
Representative works from various genres in their literary, historical, social background. Taught in German. Prerequisite: 013:101.

013:111 Nineteenth-Century German Literature 3 s.h.
Representative works from various genres in their literary, historical, social background. Taught in German. Prerequisite: 013:101 or equivalent.

013:112 Twentieth-Century German Literature 3 s.h.
Representative works from various genres in their literary, historical, social background. Taught in German. Prerequisite: 013:101 or equivalent.

013:114 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. Offered fall semesters of even years. Prerequisite: two years of college-level German or equivalent.

013:115 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. GE: foreign civilization and culture. Prerequisites: 013:022 or 013:025 or equivalent.

013:116 Advanced Composition and Conversation 3 s.h.
Speaking and writing. Taught in German. Undergraduate standing in German or consent of instructor required. Prerequisites: 013:103 and 013:104, or equivalents.

013:118 The Third Reich and Literature 3 s.h.
Nazi literature, literature of the Holocaust and the Opposition, exile literature, in English translation. GE: foreign civilization and culture or humanities.

013:119 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 GDR and FRG. Taught in English.

013:123 Topics in Foreign Language Instructional Technology 2 s.h.
development of technology-based materials for foreign language instruction: computer authoring, languages, interactive media, language laboratory methods and management. Same as 009:158, 035:117.

013:130 Internship Abroad arr.
Work experience related to student’s major field of study; must require significant use of German language in a German-speaking country; must be arranged in collaboration with University of Iowa Office of Cooperative Education. Credit varies.

013:190 Honors Program in German 3 s.h.
Individual work in literature, linguistics, and culture. Prerequisites: three years of college-level German or equivalent, and at least a 3.50 grade-point average in German.

013:191 Honors Research and Thesis 3 s.h.
Open only to honors students. Consent of instructor required. Prerequisite: 013:190.

013:198 Undergraduate Special Topics 3 s.h.
Taught in German. Open only to advanced undergraduates. May be repeated. Consent of instructor required.

**Language Courses for Graduate Nonmajors**

013:113 Intensive Elementary German 4 s.h.
Open only to graduate students.

013:125 Intensive Intermediate German 4 s.h.
Open only to graduate students. Prerequisite: 013:113 or equivalent.

013:128 German Reading for Graduate Students 4 s.h.
Grammar review, vocabulary building, extensive reading of sophisticated texts. Open only to graduate students outside German. Offered spring semesters. Prerequisite: 013:014 or 013:113 or equivalent.

**For Graduate Students**

013:200 Advanced Studies arr.
Special problems in German literature and linguistics. Graduate standing in German required.

013:220 The German Novel May be repeated. 3 s.h.

013:221 Principles of Teaching and Learning Foreign Languages 3 s.h.
Theoretical foundations of teaching and learning a foreign language; emphasis on practical applications of theories to a language classroom. Same as 009:234, 039:234, 041:234.

013:223 German Poetry May be repeated. 3 s.h.

013:224 The German Drama May be repeated. 3 s.h.

013:227 German Novelle 3 s.h.

013:241 History of the German Language Same as 103:251. 3 s.h.

013:243 Middle High German Emphasis on linguistics. Same as 103:252. 3 s.h.

013:244 Middle High German Literature 3 s.h.

013:254 Topics in Second Language Acquisition Representative topics: acquisition, discourse competence, morphology and syntax, listening comprehension, phonology, vocabulary. May be repeated. 3 s.h.

013:255 Semantics 3 s.h.
Meaning in natural language, with focus on German; lexical semantics (sense relations, semantic fields, componential analysis), modality, temporal and spatial deixis, aspect

013:256 Modern German Syntax Analysis of syntax within a generative framework. 3 s.h.

013:257 Morphology 3 s.h.
Word structure and formation in Modern German; inflection, derivation, compounding.

013:258 Modern German Phonetics and Phonology The sounds and sound system of Modern Standard German. 3 s.h.

013:271 German Literature of the Baroque 3 s.h.

013:283 The Age of Goethe Storm and Stress (Goethe, Schiller, Klinger, Lenz) and the Weimar classicism (1794-1805) of Goethe and Schiller; interdependence of movements and their theoretical basis (Herder, Winkelman) vis-a-vis representative works. 3 s.h.

013:285 Goethe 3 s.h.

013:291 German Romanticism Theoretical basis (Schlegel, Fichte, Schleiermacher, Schelling); representative works by Novalis, Tieck, C. B. Brentano, L.v. Arnim, B.v. Arnim, Grimm, Eichendorf, Wackenroder, other authors; interrelation with painting, music. 3 s.h.

013:295 German Literature from Naturalism to Expressionism 3 s.h.

013:298 Special Topics in German Literature Graduate standing in German required. May be repeated. 3 s.h.

013:300 Master’s Thesis arr.

013:350 Pre-Comprehensive Registration 0 s.h.

013:371 Seminar in Early German Literature May be repeated. 3 s.h.

013:391 Seminar in German Literature of the Nineteenth Century 3 s.h.

013:396 Seminar in German Literature of the Twentieth Century 3 s.h.

**Global Health Studies**

**GLOBAL HEALTH STUDIES**

Director: Maureen McCue
Affiliated faculty: Thomas Cook (Occupational and Environmental Health), Melanie Dreher (Nursing), Laurence Fuortes (Occupational and Environmental Health), Paul Greenough (History), Peter Hilsenrath (Health Management and Policy), Leslie Marshall (Nursing), Robert Olich (Family Medicine), Paul Porreto (Community and Behavioral Health), Christopher Squier (Dentistry), Jael Silliman (Women’s Studies)

Undergraduate nondegree program: certificate in global health studies
Graduate nondegree program: certificate in global health studies

Web site: http://creh.public-health.uiowa.edu/ghs

The Global Health Studies Program focuses on clinical health services as well as the underlying themes, processes, and institutions that influence health and disease. Among these are technology, politics, culture, legal structure, history, and economy. As a field, global health studies assumes that health is subject everywhere to dynamic processes of change that have impact worldwide.

The certificate program in global health studies provides students with a base of knowledge about the global health transition in and across various nations and societies, including the United States. The program emphasizes and vocational aspects of global health work in the expectation that some students will pursue international health careers.

The program provides:

- an understanding of related phenomena, such as infections and chronic diseases, fitness and longevity, climate change and natural disasters, environmental hazards, use of illicit and proprietary drugs, interventions against violence, war and injuries, new biomedical technologies, reproductive health and family planning, links between health and human rights, and non-Western health cultures and alternative therapies;
- an institutional focus that enables students and faculty members from different departments, colleges, and disciplines at the University-wide to meet on the common ground of their shared interests in global health issues;
- an introduction to professional knowledge and preliminary field experience necessary for success in the competitive international job market.

The Global Health Studies Program attracts students from a wide range of disciplines: public health, health and pre-health sciences, health economics, nursing, social sciences, environmental engineering, law, business, journalism, social work, and education.
Certificate
The certificate program in global health studies requires the completion of 25 semester hours of work in core courses, electives, and health or environmental health-related research, usually in a foreign country. Students may be granted credit toward the certificate retroactively for course work they completed up to two years before beginning the program.

To enter the program, students must already be enrolled at The University of Iowa. They must maintain a grade-point average of 3.00 in the 25 semester hours of work for the certificate.

Certificate requirements are as follows.

**Core Courses**
Students complete 7 semester hours from the following.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>152:111 (173:111, 175:111)</td>
<td>International Health</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>152:150 Global Health Seminar (may be repeated for elective credit)</td>
<td>2 s.h.</td>
<td></td>
</tr>
<tr>
<td>152:151 Prosem inar in Global Health</td>
<td>1 s.h.</td>
<td></td>
</tr>
<tr>
<td>152:152 Global Health Conference (may be repeated for elective credit)</td>
<td>1 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

**Electives**
Students complete 18 semester hours from the list of approved electives and may apply 3-6 semester hours earned for study abroad to the 18-semester-hour requirement. Students may petition to take courses not on the approved list, providing that these courses can be shown to include global-health-related material. For more information, consult the program office.

Foreign Language or Research
Students must complete a foreign study or research project of at least six to eight weeks duration, typically in a foreign setting but under some circumstances in the United States. They may develop and conduct a research project, participate in a health-related study-abroad program, or complete an internship on a global/environmental health issue.

Projects require approval by the Global Health Studies Program steering committee and must be supervised by a faculty member. Academic credit for research or internship experiences may be applied toward the 18-semester-hour elective requirement.

Financial support may be available for some programs. Consult the program office.

Foreign Language Study
Students should complete four semesters of modern language study or course work that satisfies the College of Liberal Arts General Education Program foreign language requirement. This certificate requirement can be waived for students whose first language is not English.

The Global Health Studies Program steering committee may require additional language study to prepare a student for a research or internship program. Graduate students interested in learning an infrequently taught language to facilitate their participation in a foreign experience should investigate the Foreign Language and Area Studies Graduate Fellowships.

Public Presentation
During the semester following the foreign experience, students present their foreign research project results to a special session of 152:150 Global Health Seminar or to an equivalent public forum, such as a departmental seminar. Students also must submit a two- to three-page project report summarizing their research experiences.

Special Opportunities
The Global Health Studies Program organizes both on-campus and overseas activities and research opportunities for students and faculty members, enabling them to become acquainted with major global health issues. Several academic fellowships, international fellowships, and research and study abroad programs that supplement the global health studies certificate program are available. These are sponsored by the University and/or a variety of agencies. Consult the program office for more information.

Study Abroad Programs
The Global Health Studies Program participates in the following study-abroad programs.

Latin American Health, Nutrition, and Environmental Issues: study abroad in the Dominican Republic (summer and fall semesters)

Environmental studies in Slovenia: three-week intensive courses taught in summer and focusing on global environmental health policy development, atmospheric pollution sources and control, and environmental epidemiology

Reproductive health and sexuality: De La Salle University, Manila, the Philippines

Center for Health Policy Studies, Mahidol University, Thailand

International Fellowships, Internship
Stanley Fellowships for Graduate and Undergraduate Student Research Abroad: Fellowships are primarily for M.A. and MS students proposing to conduct thesis research, but proposals also are welcome from Ph.D. or professional students who would benefit from a period of preliminary research abroad.

CIREH International Health Research Fellowships: The Center for International Rural and Environmental Health provides support to graduate students conducting research projects in health and environmental health that require international travel to developing countries and newly democratized countries in central and eastern Europe.

CIREH International Internship Program: The Center for International Rural and Environmental Health supports participation in a summer internship program designed to enable students who are midway through a graduate degree program to participate in a summer internship that provides them with international experiences related to public, environmental, and occupational health issues in central and eastern Europe.

Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>152:107</td>
<td>Transcultural Mental Health</td>
<td>3 s.h. Same as 096:174.</td>
</tr>
<tr>
<td>152:108</td>
<td>Health and Cultural Diversity</td>
<td>3 s.h. Same as 096:172, 113:108.</td>
</tr>
<tr>
<td>152:111</td>
<td>International Health</td>
<td>3 s.h. Same as 175:111, 175:111.</td>
</tr>
<tr>
<td>152:112</td>
<td>Global Environmental Health Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>152:120</td>
<td>Global Health and Human Rights</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Health status of selected populations in relation to global understanding and refinement of basic political, economic, social, and cultural human rights. Junior or senior standing or consent of instructor required.

152:131 Medical Geography | 1-3 s.h. Same as 044:131. |
152:136 History of Medicine In Western Society | 3 s.h. Same as 016:138. |
152:137 History of Public Health | 3 s.h. Same as 106:137. |
152:138 History of International Health | 3 s.h. Same as 160:138. |
152:150 Global Health Seminar | 2 s.h. Local and global dimensions of health and disease. May be repeated. Offered fall and spring semesters. |
152:151 Proseminar in Global Health | 1 s.h. Important health problems and issues of a global and interrelated nature that affect the developed and developing world. |
152:152 Global Health Conference | 1 s. h. Spring research conference on major global health issues. Conference registration required. May be repeated. |
152:155 U.S. Health Care System Global Perspective | 3 s. h. Exceptionalism of the American health care system from historical, institutional, economic, clinical, and ethical perspectives. Same as 16W:139, 174:155. Offered summer sessions. |
152:158 Promoting Health Globally | 2 s. h. Selected major global health threats in the United States and abroad; the impact of culture, history, and economics on health disparities; approaches, programs, and policies to remedy them. Open only to juniors and certificate students. Same as 026:147. |
152:160 Environmental Engineering: Natural Systems | 3-4 s. h. Same as 053:150. |
152:162 Environmental Engineering: Engineered Systems | 3 s. h. Same as 053:155. |
152:170 Comparative Health Systems: Russia, Eastern Europe, and Eurasia | 3 s. h. Same as 174:170, 415:170. |
152:171 Global Health Informatics Workshop | 2 s. h. Assessment of digital communication resources in studying and responding to significant global health problems in Third World nations. Open only to juniors and certificate students. |
152:175 Issues in International Nursing and Health Care | 3 s. h. Same as 096:175. |
152:185 Medical Anthropology | 3 s. h. Same as 113:185. |
152:190 Medications in International Perspective | 2 s. h. Same as 046:190. |
152:199 Special Projects in Global Health | 3-4 s. h. Consent of instructor required. |
GLOBAL STUDIES

Director: Rex Honey (Geography)
Affiliated faculty: Stephen Arium (International Programs), Joel Barkan (Political Science), Enrique Carrasco (Law), Michaeline Crichtow (African American World Studies), Gregory Hamot (Education), Vicki Hesli (Political Science), William Klink (Physics), James McCot (Religion), Scott McNabb (Education), Tad Mutenshaugh (Geography), Judy Polumbaum (Journalism and Mass Communication), Burns Weston (Law)
Undergraduate degree: B.A. in Global Studies
Undergraduate nondegree programs: minor, certificate in Global Studies

The Global Studies Program offers undergraduate students an opportunity for interdisciplinary and integrated study of the global system. The program explores key challenges in four vital areas: war, peace, and security; development, health, and human rights; the environment and natural resources; and human rights and social justice. Students may major in global studies, or they may complement their work in another field by pursuing a global studies certificate.

The program provides a suitable background for a variety of careers. Graduates of the program have found positions with international business and consulting firms, in government, with the World Bank, and with Washington, D.C.-based advocacy organizations. Others have gone into international law, domestic law, secondary education, and work with refugee organizations. Many have gone on for advanced degrees in a variety of fields, among them economics, Russian studies, Latin American studies, environmental engineering, public policy planning, social work, and geography.

Programs

Students majoring in global studies may pursue either of two tracks: honors or non-honors. Those who choose the honors track must maintain a grade-point average of at least 3.20 and must be registered with the University Honors Program. In addition, they must take two additional courses, study abroad, and complete an honors project. The Global Studies Program maintains a list of courses that fulfill the requirements of the bachelor’s degree.

Bachelor of Arts

The B.A. in global studies requires a minimum of 43 semester hours. The curriculum is as follows:

- **All of these:**
  - 047:005 Making of the Modern Global System 3 s.h.
  - 047:010 The Contemporary Global System 3 s.h.
  - 047:180 Global Studies Seminar 3 s.h.
  - Two courses on the global system from a disciplinary perspective 6 s.h.
  - One basic course in three of these topics: development, environment, war and peace, human rights 9 s.h.
  - Three additional courses in one of the four topics 9 s.h.
  - Three courses on a region of substantial importance to the global system (but not the student’s home region) 9 s.h.

Students also must be able to demonstrate usable skills in a language of their chosen region, either through coursework or in other ways. The adviser certifies that the requirement has been met.

**Certificate Program**

The Certificate Program in Global Studies is designed to provide global orientation for students in a variety of majors. Students in diverse fields such as engineering, business, anthropology, biology, foreign languages, journalism, history, economics, and political science have completed the certificate program.

Courses applied toward the global studies certificate also can be used to complete the General Education Program and requirements for a major. Students who complete the requirements are awarded a certificate in global studies when they receive their bachelor’s degrees, and completion of the program is noted on their transcript. Holders of Iowa baccalaureate degrees may return to complete the requirements for a certificate.

Students interested in pursuing the certificate in global studies should contact the program chair as early as possible to be sure that they are properly advised.

The curriculum for the global studies certificate is as follows:

- **All of these:**
  - 047:005 Making of the Modern Global System 3 s.h.
  - 047:010 The Contemporary Global System 3 s.h.
  - 047:180 Global Studies Seminar 3 s.h.

Three courses on a region of substantial importance to the global system (but not the student’s home region) 9 s.h.

Senior honors project 3 s.h.

Students also must be able to demonstrate usable skills in a language of their chosen region, either through coursework or in other ways. The adviser certifies that the requirement has been met.

**Study Abroad**

Study abroad is required for the honors major. Students and their advisers identify an appropriate study-abroad experience to complement the plan of study.

**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: at least one-quarter of the semester hours required for graduation

Before the fourth semester begins: a plan of study approved by the Global Studies adviser

Before the fifth semester begins: four to six courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: 10–12 courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: for all students, all but two of the courses required for the major; for honors degree students, the senior project substantially complete.

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

**Minor**

The requirements for the global studies minor are the same as those for the certificate, except that courses taken to satisfy the student’s major cannot be counted toward the minor.

**Study Abroad**

While only the Global Studies honors major requires a period of study abroad, all other majors and certificate students are strongly
encouraged to study abroad. The University’s study abroad office can help students find programs that fit their needs and can advise them on the availability of financial aid.

Courses

047:000 Cooperative Education Internship 0 s.h.
047:001 Global Interdependence and Human Survival 3 s.h.
Introductory analysis of the global system and its major problems; basic information, methods of investigation, interconnectedness of problems, identification and evaluation of proposed solutions. GE: social sciences.

047:005 Making of the Modern Global System 3 s.h.
Formation of the modern global system; capitalism, science and technology, representative-government and nationalism, colonialism and decolonization; rise of these in the West, response and adaptation in a nonwestern society.

047:010 The Contemporary Global System 4 s.h.
Problems of the global system and alternative ways to address them: global economy, global environment, state and security, social justice and human rights. GE: foreign civilization and culture or social sciences. Same as 044:010.

047:035 World Cities 3 s.h.
Urbanization as a process; specific concepts and theories of urbanization through global patterns, regional urban systems, individual metropolitan areas. Same as 044:035.

047:090 Global Studies News Colloquium 2 s.h.
Examination of coverage accorded global issues by U.S. print media; comparison with media coverage in other parts of the world available through the Internet.

047:100 Problems in Global Studies arr.
Independent study of a topic of global significance. May be repeated.

047:105 Individual Projects in Global Studies arr.
Research on a topic of global significance. May be repeated.

047:111 Methods of Field Study for Undergraduates Doing Fieldwork/Research Abroad 1-3 s.h.
Theoretical frameworks; elementary instruction and practice in techniques of ethnography, oral history, interviewing, archival research.

047:150 Internetworks in International Development 3 s.h.
The Internet and on-line development resources; technical background, accessibility impact; advanced skill development in Internet communication and authoring techniques; no previous knowledge required.

047:180 Global Studies Seminar 3 s.h.
In-depth exploration of a global problem or geographic area; interdisciplinary approach; guest speakers. May be repeated.

047:193 Human Rights in the World Community: Problems of Law and Policy 3 s.h.
Human rights, their moral and legal basis, their promotion and protection through governments and international organizations; comparative and international analysis of equality, nondiscrimination. Junior, senior, or graduate standing required. Same as 030:173, 091:193.

GREEK

See “Classics.”

HEALTH, LEISURE, AND SPORT STUDIES

Chair: Susan Birrell
Professors: Susan Birrell, Benjamin K. Hunnicutt, Richard D. MacNeil, Kenneth E. Mahly, Michael L. Teague

047:150 Internetworks in International Development 3 s.h.
The Internet and on-line development resources; technical background, accessibility impact; advanced skill development in Internet communication and authoring techniques; no previous knowledge required.

047:180 Global Studies Seminar 3 s.h.
In-depth exploration of a global problem or geographic area; interdisciplinary approach; guest speakers. May be repeated.

047:193 Human Rights in the World Community: Problems of Law and Policy 3 s.h.
Human rights, their moral and legal basis, their promotion and protection through governments and international organizations; comparative and international analysis of equality, nondiscrimination. Junior, senior, or graduate standing required. Same as 030:173, 091:193.

028:070 Perspectives on Leisure and Play 3 s.h.
028:072 Leisure and the Liberal Arts 3 s.h.

028:130 Human Nutrition 3 s.h.
028:140 Health for Living 3 s.h.

028:074 Inequality in Sport 3 s.h.
028:076 Psychological Dimensions of Sport 3 s.h.

028:177 Western World Sport: Greeks to Present 3 s.h.

Correspondence study or transfer courses may not be used to fulfill HLSS integrative core requirements after a student has declared an HLSS major. Students who transfer to The University of Iowa and wish to substitute courses they have completed at other institutions prior to declaring an HLSS major for any of the integrative core requirements must complete a Request For Substitution of Courses form, available from the HLSS undergraduate office. Substitutions are granted only on the basis of course content duplication. At least half of all credit in the major must be earned in residence at The University of Iowa.

Health Promotion

Health promotion is the integration of health education and related interventions designed to facilitate changes conducive to high-level health. The HLSS health promotion emphasis provides theoretical and applied course work in exercise prescription, nutrition, stress management, and health behavior. Lifestyle interventions, public health strategies, and environmental health supports are central tenets of this program.

Employment opportunities include positions with hospital-based wellness programs, commercial fitness enterprises, YMCA and YWCA, and federal and state health promotion agencies. The U.S. Department of Labor Bureau of Statistics projects employment increases throughout the year 2005 for the following positions: physical fitness trainers, health technicians and paraprofessionals, health and fitness recreation workers, health assessment and treatment professionals, and health service workers. All of these are appropriate career choices for health promotion students.

To be admitted to the health promotion emphasis, students must complete a minimum of 24 semester hours at The University of Iowa including 004:007 General Chemistry I, 004:008 General Chemistry II, 002:002 Introductory Animal Biology, and 228:002 Statistics and Society, or equivalent courses, or higher-level courses addressing the same content areas (it is recommended that students take the chemistry courses before enrolling in the biology course). Students must have a grade-point average of at least 2.70 in all University of Iowa course work and a cumulative grade-point average of at least 2.70.

Transfer students must meet the same requirements (including the same chemistry, biology, and statistics courses), except that they must have completed a minimum of 12 semester hours at The University of Iowa.
Therapeutic Recreation

Therapeutic recreation service (TRS) is a rapidly growing, health-oriented field among the recreation and leisure services professions. It involves the use of recreation services to improve or maintain the physical, mental, emotional, and/or social functioning of persons with disabilities and/or special needs. TRS also helps individuals pursue meaningful leisure lifestyles. Graduates are eligible to sit for the national certification examination in therapeutic recreation. Typically, graduates find employment in clinical or community settings.

Comprehensive therapeutic recreation services involve a continuum of care, including:
- treatment that uses activities to remediate or rehabilitate functional abilities and to assist in diagnosis;
- leisure education that uses activities to help individuals acquire skills, knowledge, and attitudes that facilitate an independent lifestyle and avocational competence; and
- recreation that uses activities to enhance health, growth, development, and independence through intrinsically rewarding leisure behavior.

Populations most commonly served by certified therapeutic recreation specialists include the physically, mentally, or emotionally disabled; mentally delayed; incarcerated; chemically dependent; or socially disadvantaged older adults. Therapeutic recreation professionals are commonly employed in settings such as long-term health care facilities, community recreation centers, state and community mental health institutions, general medical hospitals, physical rehabilitation centers, special recreation districts, correctional facilities, senior citizens' community-based programs, facilities for the mentally delayed, facilities for the emotionally disturbed, and substance-abuse programs.

The U.S. Department of Labor's Bureau of Labor Statistics recently projected that employment in the field of therapeutic recreation is expected to grow faster than average through 2005. This growth is caused by the expansion in long-term care physical and psychiatric rehabilitation and services in nursing homes, retirement communities, and adult day care programs.

To be admitted to the therapeutic recreation emphasis, students must complete a minimum of 24 semester hours at The University of Iowa, including the following:

07P:025 Elementary Statistics and
Inference (or 07P:143, 22M:015, 22M:016, 223:102, or 034:010) 3 s.h.
027:053 Human Anatomy 3 s.h.
031:001 Elementary Psychology (or an equivalent or higher-level course addressing the same content areas) 3-4 s.h.
034:001 Introduction to Sociology: Principles 3-4 s.h.
054: 120 Principles of Social Psychology 3 s.h.

Students must complete 15 semester hours of electives chosen from these.

301:163 Abnormal Psychology 3 s.h.
One course in life-span human growth and development 3 s.h.
Courses in human services (i.e., aging studies, psychology, sociology, social work, education) 9 s.h.

Internship

Students must complete both of the following courses (13 semester hours).

028:190 Preinternship Seminar 1 s.h.
028:191 Internship I 12 s.h.

Sport Studies

This program is for students with a general interest in sport and leisure. Its purpose is to increase knowledge and understanding of the place and significance of sport and leisure in culture.

The program provides students with skills in cultural analysis and opportunities to think critically about sport and leisure. It requires them to understand sport and leisure in the broader context of culture and in individual lives, and encourages them to develop their own scholarly ambitions in that direction.
Many students use their experience in this program to prepare for graduate school. For others, the required second area of concentration or minor serves as an introduction to careers in a number of fields that have sport and/or leisure as their focus.

Students enrolled in the sport studies emphasis must complete the 9-semester-hour HLSS integrative core and the following course work.

**Sport Studies Foundation**

The following courses are required (18 semester hours).

- **028:074 Inequality in Sport** (also may count toward integrative core) 3 s.h.
- **028:076 Psychological Dimensions of Sport** (also may count toward integrative core) 3 s.h.
- **028:175 Sport and the Media** 3 s.h.
- **028:176 Women, Sport, and Culture** 3 s.h.
- **028:177 Western World Sport: Greeks to Present** (also may count toward integrative core) 3 s.h.
- **028:178 History of Sport in the United States** 3 s.h.

**Sport Studies Electives**

Students must complete two of these (6 semester hours).

- **028:070 Perspectives on Leisure and Society** (if not used to fulfill integrative core requirement) 3 s.h.
- **028:079 Introduction to Careers** (if not used to fulfill integrative core requirement) 3 s.h.
- **028:072 Leisure and the Liberal Arts** (if not used to fulfill integrative core requirement) 3 s.h.
- **028:128 Environmental Issues in Recreation** 3 s.h.
- **028:168 Aging and Leisure** 3 s.h.
- **028:173 Work and Leisure in American Culture** 3 s.h.
- **028:179 The American Vacation** 3 s.h.
- **028:193 Independent Study** arr.
- **028:194 Honors Readings** 3 s.h.
- **028:195 Honors Problems** arr.

**Concentration or Minor**

Sport studies students also must complete a concentration (15 semester hours) or minor in an area program or department outside HLSS-for example, American studies, business administration, journalism, women’s studies. They must choose the area in consultation with their adviser.

**Four-Year Graduation Plan**

The four-year graduation plan is not available in the Department of Health, Leisure, and Sport Studies.

**Honors**

The honors program is designed to serve the interests of superior students. It gives participants some research experience and a perspective on some aspects of graduate study. To be eligible for honors study in the Department of Health, Leisure, and Sport Studies, students must have declared a major in the department and must have a grade-point average of at least 3.20. Application forms for the honors program are available at the HLSS undergraduate office.

To qualify for the honors degree, students must successfully complete 028: 194 Honors Readings and 028: 195 Honors Problems, for which they must complete a reading or research project under the supervision of a departmental faculty member and write a paper summarizing the project’s results. Honor students also must maintain a grade-point average of at least 3.20 throughout the rest of their degree work.

**Minor**

Students who wish to minor in health, leisure, and sport studies must complete at least 15 semester hours in the department curriculum with a grade-point average of 2.00. Twelve of the 15 must be taken in advanced (100-level) courses at The University of Iowa. Students choose courses according to their interests and the recommendations of the undergraduate director.

No courses accepted toward the minor may be taken pass/nonpass.

**Coaching Endorsement**

Any student in a teaching licensure program may receive a coaching endorsement on his or her license by completing the following courses and applying through the College of Education’s Office of Student Services.

- **027:117 Human Growth and Motor Development** 3 s.h.
- **027:053 Human Anatomy** 3 s.h.
- **027:057 Basic Athletic Training** 3 s.h.
- **028:180 Theory of Coaching** 3 s.h.

The following courses are highly recommended, but not required.

- **027:107 Introduction to Biomechanics** 3 s.h.
- **027:140 Exercise Physiology for Practitioner** 3 s.h.
- **028:032 First Aid and CPR** 2 s.h.

**Coaching Authorization**

Any student in a nonteaching program may receive coaching authorization by completing the following courses and applying directly to the Iowa Department of Public Instruction. Application forms for the coaching authorization are available at the HSLS undergraduate office.

- **027:053 Human Anatomy** 3 s.h.
- **027:057 Basic Athletic Training** 3 s.h.
- **027:117 Human Growth and Motor Development** 3 s.h.
- **028:180 Theory of Coaching** 3 s.h.

*Students should take 027:053 and obtain first aid certification before taking 027:057.

In addition, it is highly recommended that students obtain practical coaching experience. Such experience may be available through local public and private schools, recreation departments, and independent groups such as The Iowa City Kickers. Students eligible for coaching endorsement (students who plan to be licensed as teachers) may obtain credit by registering for 07S:198 Coaching Practicum.

**Graduate Programs**

The department offers the Master of Arts with four specialization areas and the Doctor of Philosophy with three specializations.

Undergraduate preparation in physical education or leisure studies is not required for successful completion of the graduate programs; indeed, students from diverse backgrounds are encouraged to apply. However, students may need to fulfill prerequisites specific to their specialization areas.

**Master of Arts**

Specialization areas for the M.A. are health promotion, therapeutic recreation, cultural studies in sport and leisure, and sport and leisure policy and administration.

The degree is awarded on completion of at least 33 semester hours of graduate course work including thesis, or 36 semester hours without thesis. All master’s students must complete a group of core courses supplemented with work in their specialization areas.

**Core Requirements**

All master’s students must take the following courses.

- **028:202 Critical Perspectives** 3 s.h.
- **028:204 Research Methodologies** 3 s.h.
- **028:300 Research Colloquium** 0 s.h.

A course in statistics or cultural analysis 3 s.h.

**Specialization Areas**

**Health Promotion**

Health promotion is the integration of health education and related organizational, political, and economic interventions designed to facilitate behavioral and environmental changes that are conducive to health. The curriculum is multidisciplinary, providing students with the opportunity to develop skills in exercise prescription and assessment, dietary assessment and planning, stress management, smoking cessation, substance abuse counseling, and facility-based management. Internships are available in a variety of organizational settings, both nationally and internationally.

**Therapeutic Recreation**

Therapeutic recreation relates to development and administration of programs that serve persons with mental or physical disabilities, the emotionally disturbed, and aged persons in both institutional and community settings. The program, directed toward understanding recreation’s role in a comprehensive rehabilitation process, prepares students to work with a broad range of disability areas in either clinical or community settings. Students may develop specialization areas by taking related area courses. Emphasis is on applying research techniques and skills to solve problems in practical settings.

Therapeutic recreation students must complete a practicum in order to sit for the National
Certification Examination. In addition to therapeutic recreation content courses, students complete 6-9 semester hours in one of four cognate areas: counseling and group process; disabilities; aging; and management.

CULTURAL STUDIES IN SPORT AND LEISURE
Cultural studies in sport and leisure is an interdisciplinary program drawing on the insights of sociology, history, philosophy, and psychology to produce analyses of health, leisure, and sport activity. Graduates often go on to doctoral study in sport and leisure studies or a related cultural field. Students take courses offered by the department and by other departments, such as American studies, communication studies, women’s studies, history, psychology, and sociology.

SPORT AND LEISURE POLICY AND ADMINISTRATION
Sport and leisure policy and administration prepares students for entry level positions in public and private recreation and athletic administration. Internships in The University of Iowa’s women’s and men’s athletic programs sometimes are available. The master’s degree also is excellent preparation for undertaking study toward the Ph.D. in administration and management.

Internships
Internships, available in several areas, are strongly recommended for students specializing in administration, therapeutic recreation, and health promotion.

Certification Examination
Master’s students specializing in therapeutic recreation and in sport and leisure policy and administration are eligible to take professional certification examinations. They should consult a graduate adviser for guidance toward professional certification.

Assistantships
A limited number of teaching assistantships are available; applications should be made directly to the department chair. Teaching assistants generally teach physical education skills courses, supervise practicum students, or support general education courses offered by the department.

Doctor of Philosophy
The Ph.D. is offered with three specialization areas: athletic administration, cultural studies in sport and leisure, and psychology of sport. Most students enter the doctoral program after completing a master’s degree. The Ph.D. entails 60 semester hours of course work beyond the master’s All doctoral students must complete a total of at least 72 semester hours of graduate work, including general requirements for the master’s degree and credit for the dissertation. They also must satisfy the residency requirement by completing at least two semesters (minimum of 9 semester hours each) in residence at The University of Iowa.

REQUIRED COURSES
Doctoral students must take the following courses if equivalent courses have not been part of their master’s course work.
028:202 Critical Perspectives 3 s.h.
028:204 Research Methodologies 3 s.h.
028:300 Research Colloquium 0 s.h.

In addition, all doctoral students must complete a dissertation and take at least 3 semester hours of advanced research methodologies.

Specialization Areas

ATHLETIC ADMINISTRATION
Students in the athletic administration specialization prepare for administrative work at all levels within collegiate sport, including Division I. Many students have the opportunity to work in the women’s and men’s athletic programs at The University of Iowa.

CULTURAL STUDIES IN SPORT AND LEISURE
This specialization is an interdisciplinary program that explores sport and leisure with insights from sociology, history, and the humanities, as well as interdisciplinary fields such as communication studies and women’s studies. Students develop their analytical skills in order to produce research and cultural criticism of sport, leisure, dance, and other related fields of physical activity. Careers in scholarship and teaching are the usual outcomes of such a curriculum.

PSYCHOLOGY OF SPORT
The doctoral program in psychology of sport provides students with the background and research skills to teach and pursue scholarship at the university level. Students take course work offered by the department as well as by related departments such as psychology, and counseling, rehabilitation, and student development. Iowa’s program in psychology of sport is distinguished by its focus on psychological processes as they interact with other cultural processes.

Assistantships
A limited number of teaching assistantships and research assistantships are available. Teaching assistants generally teach University physical education skills courses; there also are a few opportunities to teach discussion sections of lecture courses. Applications should be made directly to the department chair.

Courses
028:000 Cooperative Education Internship 0 s.h.
028:030 Principles of an Exercise Class 2 s.h.
028:040 Bicycle Touring 1 s.h.
028:041 Canoeing 1 s.h.
028:043 Cross-Country Skiing II 1 s.h.
028:044 Mountain Big 1 s.h.
028:045 Rock Climbing 1 s.h.
028:046 Ropes 1 s.h.
028:060 Leisure in Contemporary Society 3 s.h.
028:074 inequality in Sport 3 s.h.
028:076 Psychological Dimensions of Sport 3 s.h.
028:135 Practicum: Health and Physical Activity 1.3 s.h.
Physical activity determinants in society; school, workplace, and community-based health promotion interventions to improve activity levels; practicum experiences.
028:136 Physical Activity Through the Life Span 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: 027:140 and admission to health promotion program.
028:140 Health for Living 3 s.h.
Preventive health strategies, focus on disease prevention, wellness. GE: social sciences.
028:141 Health Promotion Theory and Practice 3 s.h.
Historical and theoretical foundations of health promotion; theories of personal and interpersonal health behavior change. Prerequisites: 028:140 and admission to health promotion program.
028:142 Health Promotion in the Workplace Setting 3 s.h.
Management and organizational theories; assessment, planning, implementation, and evaluation of clinical and work-setting targeted health promotion programs.
028:143 Health Communications Programming 3 s.h.
Community-level theories and models related to health promotion and communication; development, implementation, and evaluation of effective health communication interventions; identification of health education resources for tailored Groups. Prerequisite: 028:141.
028:144 Peer Health Education 2 s.h.
Experience acting as a peer educator, assisting students in their residential areas, presenting educational outreach programs on health topics, making referrals to campus and area agencies, and serving as a positive role model. Consent of instructor required.
028:146 Health Promotion for Older Adults 3 s.h.
Problems, strategic efforts toward long-term goal of health promotion; disease prevention; slowing decline of chronic conditions to allow independent, rewarding lives. Same as 155:146.
028:147 Promoting Health Globally 2 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. Same as 152:158.
028:148 Practicum in Health Promotion 1-2 s.h.
Experience in planning, implementing programs on health-related topics; nutrition, physical fitness, sexual abuse, sexuality. May be repeated. Consent of instructor required.
028:150 Recreation Administration 3 s.h.
Personnel, finance, budgets, liability, marketing.
028:151 Liability in Sport, Health, and Leisure 3 s.h.
Legal knowledge needed to manage sport, recreation, and physical activity programs effectively and to avoid legal problems; strategies for addressing such issues as right to participate, liability for injuries, risk management, and special legal situations that govern sport, health, and recreation organizations.
028:154 Park and Recreation Facility Management 3 s.h.
Personnel, program, financing, design, standards.
028:156 Design of Recreation Facilities 3 s.h.
Horticulture, floriculture, landscape design, agronomy, turf management; their relation to planning, design of recreation and park areas and facilities.
028:157 Fitness Club Management 3 s.h.
Management, operation of private, hospital-based, and corporate fitness clubs.
028:158 Commercial Recreation Management 3 s.h.
Managerial skills to operate a small commercial recreation complex smoothly, profitably; entrepreneurship, new business formation, financial and risk management, inventory control, purchasing, marketing strategies, governmental regulation. Prerequisites: 028:060 and 028:150.
028:160 Introduction to Therapeutic Recreation 3 s.h.
Recreation’s role in rehabilitation; organization and development of programs; approaches to understanding patient’s behavior, adaptation of activities to basic disability areas.
028:162 Therapeutic Recreation: Clientele 3 s.h.
Human growth and development, concomitant development of recreation and leisure lifestyles; focus on developmental patterns of special populations. Prerequisite: 028:160.
028:163 Concepts and Issues in Therapeutic Recreation 3 s.h.
Philosophical, ethical, professional, and theoretical issues in delivery of therapeutic recreation services; impact of legislation, standards of practice and professionalism, health care reform. Prerequisite: 028:160.
028:164 Therapeutic Recreation: Rehabilitation 3 s.h.
Role of therapeutic recreation in total institutional and community rehabilitation efforts; cooperative role of therapeutic recreation in total therapy program. Prerequisite: 028:160.
028:166 Exercise Programs: Special Populations 3 s.h.
Development, implementation, instruction of exercise programs for special populations. Same as 153:166.
028:168 Aging and Leisure 3 s.h.
Status of the older adult; relation to issues of retirement, use of free time, and factors supporting leisure activity; leisure services in long-term care. Same as 153:168.
028:171 Issues In Recreation and Leisure 2-3 s.h.
Leisure, leisure in modern society; human, technological values related to leisure.
028:172 Women as Leaders 1-2 s.h.
Leadership styles, roles, accomplishments. May be repeated.
028:173 Work and Leisure in American Culture 3 s.h.
Methods, insights of American and leisure studies combined, applied to work/leisure relationship in American life; patterns and perceptions of work and leisure, what share leisure should and could have; changing American values.
028:175 Sport and the Media 3 s.h.
Representations of sport in television, the press, fiction, film, biographies, advertisements, fiction.
028:176 Women, Sport, and Culture 3 s.h.
Feminist analysis of ‘female’ and women’s sport experiences; reproduction of gender through sport, recent changes in women’s intercollegiate athletics; media representations of women in sport, feminist critiques, alternatives to sport. Same as 131:153.
028:177 Western World Sport: Greeks to Present 3 s.h.
Development of Western sport; relation to social, political, economic, intellectual, scientific, and religious development.
028:178 History of Sport in the United States 3 s.h.
Growth, institutionalization of sport from colonial times to present.
028:179 The American Vacation 3 s.h.
Weekends, holidays, and vacations as bundled outcomes invested with cultural significance; focus on how experiences and meanings are shaped by race, class, gender. Same as 045:174.
028:180 Theory of Coaching 3 s.h.
Philosophical bases; theoretical, practical applications.
028:190 Internship Seminar 1 s.h.
Practical field experience; direct leadership, program planning, administrative procedures. Consent of instructor required. Prerequisite: 028:190.
028:192 Internship II 1.arr.
Continuation of 028:191. Consent of instructor required.
028:193 Independent Study 1.arr.
Problem in a specific area. Consent of instructor required.
028:194 Honors Readings 1.arr.
Consent of instructor required.
028:195 Honors Research 1.arr.
Consent of instructor required.
028:200 Historical and Philosophical Perspectives 3 s.h.
Development of attitudes toward health, leisure, sport; emerging program patterns; current issues.
028:202 Critical Perspectives 3 s.h.
Application of critical theories to cultural meanings and issues of sport, health, leisure.
028:204 Research Methodologies 3 s.h.
Design, interpretation of research; emphasis on quantitative approaches.
028:235 Stress Management 2-3 s.h.
Stress and the stress response; causes and consequences; management strategies.
028:240 Health Promotion and Epidemiology 3 s.h.
Principles of epidemiology, disease prevention strategies applied to multilevel frameworks for health promotion; interpreting scientific literature, converting scientific findings to health promotion actions.
028:242 Seminar: Worksetting Health Promotion 3 s.h.
Contemporary issues in designing, implementing health promotion in workplace settings.
028:243 Planning and Evaluating Health Interventions 3 s.h.
Theoretical and applied aspects of planning and evaluating health interventions in multiple settings, including culturally relevant programming.
028:244 Health Behavior Theories and Applications 3 s.h.
Health behavior theories and their relevance to individual, interpersonal, and community-wide health promotion interventions.
028:250 Marketing Sport and Leisure 3 s.h.
The sport/leisure industry, product characteristics of nonprofit, private/commercial, and public organizations; participant and spectator consumer behavior; fundamentals of market research in sport/leisure organizations.
028:252 Economics and Financing in Sport and Leisure 3 s.h.
Economic issues regarding sport/leisure services in nonprofit, private/commercial, and public sectors; strategic financial analysis for the nonfinancial manager; principles, issues in financing sport/leisure organizations.
028:256 Governance and Policy Issues In Athletics 3 s.h.
Institutional, conference, national, and international issues in sport and sport governance; focus on gender equity, Title IX.
028:262 Procedures in Therapeutic Recreation 3 s.h.
Technical skills, current techniques in therapeutic recreation practice; application of research principles to daily practice; program administration. Consent of instructor required.
028:264 Therapeutic Recreation Services 3 s.h.
Initiation, improvement, expansion of therapeutic recreation service for disabled persons; practice in program evaluation procedures; parallel practices in related fields. Consent of instructor required.
028:270 Social Psychology and Sport 3 s.h.
Theoretical and applied bases of social psychology of sport and exercise; motivation, arousal, group processes related to sport, physical activity.
028:274 Philosophy of Sport 3 s.h.
The meaning of sport as human experience; ethical, aesthetic dimensions.
028:276 Sport in U.S. Culture 3 s.h.
Sport as cultural form; relationship to ideology and practice in economics, politics, education, the family, the media.
028:277 Leisure in U.S. Culture 3 s.h.
Leisure as cultural form; relationship to ideology and practice in economics, politics, education, the family, the media.
028:278 History of Women In Sports 3 s.h.
Women’s sport involvement from ancient times to present; focus on social class, attitudes, religion, race, ethnicity, medical opinion, economic considerations in athletic events, educational philosophies that have influenced women’s sport participation. Same as 131:254.
028:290 Graduate Internship 3-6 s.h.
Consent of instructor required. Consent of instructor required.
028:291 Problems Consent of instructor required.
028:292 Practicum in College Teaching Consent of instructor required.
028:294 Practicum: Athletics Administration Consent of instructor required.
028:299 Graduate Research Problems Consent of instructor required.
028:300 Research Colloquium 0-1 s.h.
Research issues, current research projects of departmental faculty, graduate students.
028:370 Seminar In Sport Psychology 3 s.h.
Current theory, research, applied sport psychology techniques. May be repeated. Prerequisite: 028:270.
The Department of History's purpose is to provide students with opportunities to gain understanding their world in light of its past. In addition to offering these essential elements of 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. The department participates in several interdisciplinary programs, such as American studies, African American world studies, ancient civilizations, Asian studies, Latin American studies, Russian, East European, and Eurasian studies, and women’s studies.

**Undergraduate Program**

Baccalaureate graduates in history work in a variety of positions in business, education, public service, advertising, and journalism. Many plan further training 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 General Education Program requirement in foreign language by choosing a language that fits their interests in history. The history faculty particularly encourages study abroad programs that complement students’ foreign area interests. Majors also are encouraged to improve their writing and speaking skills.

The major is for students with a general interest in history. Students must earn a minimum of 30 semester hours in history courses and present a portfolio of written work. Course requirements include a colloquium, which usually is taken during the sophomore year or the semester after the student elects a major in history. The portfolio, which should consist of at least three papers the student has written while enrolled in history classes, is submitted to the student’s adviser in the semester before graduation. Honors students who successfully complete an honors essay are not required to submit a portfolio.

College Level Equivalency Program (CLEP) credit cannot be used as part of the history major. Transfer work that is equivalent to University of Iowa course work can be accepted toward the major, but at least 15 semester hours, including the colloquium, must be earned at The University of Iowa.

Up to 6 semester hours earned in Guided Correspondence Study courses in history numbered 016:051 and above can be counted toward the 30 semester hours required for the major. Up to 3 semester hours may be counted toward the minor. All correspondence courses must be approved in advance by the history department.

Undergraduate courses are divided into four areas: American history (prefix 16A), European history (16E), non-western world history (16W), and courses that have no area designation (016). The major requires at least one course from each of the American, European, and non-western world history lists.

**REQUIRED COURSES**

**Colloquium**

One of these:

- 16A:051 Colloquium for History Majors (American) 3 s.h.
- 16E:051 Colloquium for History Majors (European) 3 s.h.
- 16W:051 Colloquium for History Majors (World) 3 s.h.

First-year students who enter the University as history majors take the colloquium during their sophomore year; students who declare history after their first year take the colloquium in the semester following their declaration. Every colloquium includes assigned papers; students must include in their history portfolio at least one paper from their colloquium.

**Other Required Courses**

Total of 9 semester hours (may include colloquium credit):

- At least 3 semester hours of American history
- At least 3 semester hours of European history
- At least 3 semester hours of non-western world history

**History Electives**

The major requires a total of 21 semester hours in history electives (may include colloquium credit). History electives can be chosen from all courses within the department except those numbered below 016:051, which cannot be counted toward the history major. No more than 15 semester hours of American history (16A) may be included in the major.

**Teacher Licensure**

Students who wish to qualify for teaching licensure in secondary social studies education must meet the course requirements in American and non-U.S. history indicated below while completing the history major. They also must complete College of Education professional education courses required for teacher licensure.

History course requirements are as follows.

Five courses in U.S. history (16A) 15 s.h.
Five courses in non-U.S. history (16E and 16W at least one course for each area) 15 s.h.

Courses taken as part of the history major, including the Colloquium for History Majors (if numbered 16A:051, 16E:051, or 16W:051), may be counted as part of the 30 semester hours required for certification.

For certification in secondary social studies, students also must take 15 semester hours of course work in a related area chosen from economics, geography, anthropology, psychology, sociology, or American government. Not all political science courses count toward certification to teach American government. Course content must center around the American political system or American political issues.

For information about the Teacher Education Program (TEP) or the secondary social studies education program, consult the social studies program coordinator at the College of Education.

**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: at least one-quarter of the semester hours required for graduation.

Before the fifth semester begins: two courses in the major (including Colloquium for History Majors) and at least one-half of the semester hours required for graduation.

Before the seventh semester begins: four more courses in the major and at least...
three-quarters of the semester hours required for graduation

Before the eighth semester begins: two more courses in the major and submission of the portfolio of written work to the student’s adviser

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

Honors

The requirement for entry into the history department’s honors program is the same as that for entry into the University Honors Program: a 3.20 grade-point average. Through its honors program, the department provides outstanding students with opportunities to enhance their history major in several ways.

The most significant part of the honors program in history is the honors thesis. The thesis is an extended research paper (3050 pages), usually completed during the senior year. Research for the thesis is done under the supervision of a faculty member who specializes in the field in which the student undertakes his or her research. Students register for 3 semester hours of 016:091 Honors Thesis I and 3 semester hours of 016:092 Honors Thesis II in each of two semesters. The 6 semester hours count toward the total number of hours needed for the history major.

Minor

Any student who completes at least 15 semester hours in history with a grade-point average of 2.00 may earn a minor. Twelve of the 15 semester hours must be in advanced courses taken at The University of Iowa. For the minor, all courses numbered above 016:071 are regarded as advanced.

Graduate Programs

The graduate programs in history prepare 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 of history become qualified for careers in archival work, library work, musem work, or historical site preparation and display. Some students enter the joint program leading to degrees in both law and history (see “Joint Law and Graduate Degree Program” in the College of Law section of the Catalog).

Students interested in graduate work should obtain a copy of the current Guide to Graduate Study at The University of Iowa, available from the departmental office. The guide is revised every spring to include the latest faculty listing, research interests of faculty members, detailed regulations on study toward advanced degrees, and other information for prospective students.

Master of Arts

The department offers two M.A. programs. The first is for students who plan to work toward the Ph.D. degree. It requires a minimum of 30 semester hours of credit, including the completion of a research essay. The candidate must earn at least 24 semester hours of credit in the history department, including at least two seminars or one seminar and one readings course. One seminar or readings course must be taken in each of the first two semesters of residence. Twelve semester hours must be in the area of the student’s essay topic, and at least 6 semester hours must be in a second division, including either a seminar or a readings course.

The essay in the major division must be based on original research and should be approximately 10,000 to 15,000 words in length. It usually begins as a term paper for the seminar in the major division and is completed the following semester under the guidance of the supervisor, when the student is enrolled in 016:296 Individual Study: Graduate. 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.

The second M.A. program is designed for students who do not intend to pursue the doctorate in history. The basic course requirements are much the same as those for the Ph.D.-track Master of Arts. Students must earn 30 semester hours overall, with 24 of them in history, 12 of which are earned in one major division, including at least one readings or seminar course. The two plans differ mainly in respect to concentration in fields: the Ph.D. track emphasizes the development of research capabilities culminating in the essay; the non-Ph.D. track stresses breadth of learning. Students in the non-Ph.D. track must take at least 6 semester hours in each of two other divisions in history, or 6 semester hours in one other division in history and 6 semester hours in a related department. Included in these 12 semester hours must be at least one readings or seminar course in history.

After completing these requirements, or during the semester in which they are to be completed, the M.A. candidate must take an oral and written comprehensive examination in the major division.

Doctor of Philosophy

Students who earn the M.A. with research essay are 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 general requirements for admission to the Graduate College (see the Graduate College section of the Catalog) and to the department. They must submit a writing sample, such as a seminar paper or an M.A. thesis. They must take a research seminar during their first two semesters in residence at Iowa.

The candidate must earn at least 72 semester hours of credit, including credit for work done toward the master’s degree. The 72 semester hours must include at least eight 4-semester-hour, 200-level research seminars (not fewer than three) or graduate readings courses. At least five of these eight courses must be completed before the student takes the comprehensive examination. Courses taken at the M.A. level may be counted toward this requirement. The candidate also must take a graduate course in the philosophy of history, historiography, or methods of historical research.

The department has no general language requirement for the Ph.D., but the supervising faculty member may require the candidate to demonstrate a reading knowledge of one or more foreign languages and proficiency in the use of other study tools. The candidate may not complete the comprehensive examination until these requirements have been met.

The comprehensive written and oral examination covers three distinct fields, two of which must be in a major division that is chosen from the following divisions:

- The ancient world
- Medieval Europe
- Europe, early modern
- Europe, modern
- Russia and the former Soviet Union
- United States
- Latin America
- China
- Japan
- India
- Africa

The student may construct another field, subject to approval by the comprehensive exam committee.

The third field must be a division outside the candidate’s major division or in a related department outside history. The committee may define and delimit the individual fields for examination. It may also 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, 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 of 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, usually lasting two hours.

Admission

Applicants for admission to the graduate program in history must meet the general requirements for admission to the Graduate College and must submit academic transcripts.
and Graduate Record Examination (GRE) General Test scores.
In addition, students must submit examples of original writing to the history department, such as a term paper, a seminar paper, or an honors thesis, 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 in taking graduate work. All application materials are due by January 10.

**Special Facilities**

The University of Iowa Libraries are unusually strong 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 in West Branch possess additional valuable research materials.

**Courses**

Courses numbered 016:001 through 016:040 are approved for General Education. Some other courses are approved in the foreign civilization and culture General Education area. They cannot be taken pass/nonpass, even when they are taken as electives. Majors should take 16A:051, 16E:051, or 16W:051 in the sophomore year or in the first semester after declaring the major. Other courses numbered below 200 are open to first-year students who have already completed the General Education Program historical perspectives component. Courses numbered 200 and above are offered as occasion demands.

**For Undergraduates**

016:000 Cooperative Education Internship 0 s.h.
016:001 Western Civilization I 3–4 s.h. Ancient and medieval. GE: foreign civilization and culture or historical perspectives.
016:002 Western Civilization II 3–4 s.h. Early modern world. GE: foreign civilization and culture or historical perspectives. - 
016:003 Western Civilization III 3–4 s.h. The modern world. GE: foreign civilization and culture or historical perspectives.
016:005 Civilizations of Asia: China 3 s.h. GE: foreign civilization and culture or historical perspectives. Same as 016:005.
016:006 Civilizations of Asia: Japan 3–4 s.h. GE: foreign civilization and culture or historical perspectives. Same as 039:065.
016:007 Civilizations of Asia: South Asia 3–4 s.h. GE: foreign civilization and culture or historical perspectives. Same as 039:057.
016:011 Issues in Human History: The Vietnam War in Historical Perspective 3 s.h. GE: historical perspectives.
016:012 Issues in Human History: Communities and Society in History 3 s.h. GE: historical perspectives.
016:013 Issues in Human History: The Political Left in Modern History 3 s.h. GE: historical perspectives.
016:015 Issues in Human History: Gender in Historical Perspective GE: historical perspectives. 
016:030 Science and Medicine in World Perspective 3 s.h. GE: foreign civilization and culture or historical perspectives.
016:040 Perspectives: Diversity in American History 3 s.h. People, cultures, behaviors, and values that have shaped American society and its past. GE: cultural diversity.
16A:051 Colloquium for History Majors (American) 3 s.h. History major or consent of instructor required.
16E:051 Colloquium for History Majors (European) 3 s.h. History major or consent of instructor required.
16W:051 Colloquium for History Majors (World) 3 s.h. History major or consent of instructor required.
016:090 Individual Study: Undergraduate arr. May be repeated.
016:091 Honors Thesis I 3 s.h. Individual research and writing under supervision of faculty member; occasional group sessions with other Honors Thesis students.
016:092 Honors Thesis II 3 s.h. Individual research and writing under supervision of faculty member; occasional group sessions with other Honors Thesis students. Prerequisite: 016:091.
016:100 Historical Background of Contemporary Issues arr. May be repeated.
16W:109 The History of Latinos in the U.S. 3 s.h.
16W:110 Topics in Latin American History 3 s.h.
16W:111 Colonial Latin America 3 s.h. Cultural, institutional continuity from 16th century to independence. GE: foreign civilization and culture.
16W:112 Introduction to Modern Latin America 3 s.h. Cultural, institutional continuity from independence to present. GE: foreign civilization and culture.
16W:113 The Mexican Revolution 3 s.h. Social upheaval of 1910-1940, its relation to 19th-century and contemporary patterns. GE: foreign civilization and culture.
16W:114 Latin America and the U.S.: The Historical Perspective 3 s.h.
16W:116 Women in Latin America 3 s.h.
16W:117 History of Brazil 3 s.h.
16W:120 Museum Literacy and Historical Memory 3 s.h. Same as 149:130.
16W:120 Pre-Colonial African History 3 s.h. Africa to 1800; oral tradition, other sources; political development, ecological change, slavery and slave trade. Same as 129:163, 141:120.
16W:121 African History since 1800 3 s.h. Africa in colonial, post-colonial period, economics, political structures of colonialism; social change, political life in the 20th century. Same as 129:164, 141:121.
16W:124 Women in African History 3 s.h. Women and gender relations in the history of pre-colonial and 20th Century Africa. Same as 141:124.
16W:125 The History of South Africa Same as 129:187, 141:143.
16W:127 Human Rights Politics, 1940-Present 3 s.h.
16W:136 History of Medicine in Western Society 3 s.h. Theories about the body, illness, medical practice in social, economic, intellectual contexts; role of healers, professionalization of practitioners; evolution of public, private medical institutions; interrelationships of science, medicine, technology. Same as 152:136.
16W:137 History of Public Health 3 s.h. State-endorsed measures to avert or control disease in society. Same as 152:137.
16W:138 History of International Health 3 s.h. Foremost problems of health and disease in colonial and post-colonial societies; topical approach. Same as 152:138.
16W:141 War and Society 3 s.h. Military profession, strategic thought, conduct of war, civil-military relationships during the past 200 years.
16W:144 War and Peace in the 20th Century 3 s.h.
16W:151 Social History of the Violin 3 s.h. The violin’s place in world culture; violin as product, collectible, and icon; the player as artisan, artist, and professional.
16W:166 Society and Religion in the Modern Middle East Same as 032: 166.
16W:168 Religion and Politics in the Modern Middle East Same as 032:168.
16W:172 Early Modern Japan 3 s.h. Political, social, cultural history of Japan from Tokugawa shogunate to Meiji Restoration. Same as 39J:172.
16W:175 Topics in Japanese History Same as 39J:175.
16W:182 The Vietnam War in Historical Perspective 3 s.h. Same as 039:132.
16W:183 Vietnam War on Film 3 s.h.
16W:184 History of Central Asia 3 s.h.
16W:189 South Asia Social Science History 3 s.h. Key social science topics in South Asia. Prerequisite: 016:007 or equivalent. Same as 039:176.
16W:194 Imperialism and Modern India 3 s.h. India since 1500 A.D.; emphasis on Mughal and British imperial systems, nationalist movements, current socioeconomic trends. GE: foreign civilization and culture. Same as 039:154.
American History

16A:061 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. GE: historical perspectives (only for international students who hold a nonimmigrant student visa). Same as 032:142.

16A:062 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. GE: historical perspectives (only for international students who hold a nonimmigrant student visa). Same as 032:144.

16A:065 Introduction to African American History
3 s.h.
Same as 129:065.

16A:104 History of the American Deaf Community
3 s.h.
Creation of a distinct language and culture of deaf people in America during the 19th and 20th centuries. Taught in American Sign Language (ASL). Prerequisite: 158:014 or consent of instructor. Same as 158:100.

16A:105 Cultural History of Deaf People in America
3 s.h.
Deaf culture, deafness in American culture, evolution of American Sign Language; early 19th century to present.

16A:106 Disability in American History
3 s.h.

16A:107 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.

16A:108 Antebellum America
3 s.h.

16A:110 Law in American History I
3 s.h.
Same as 091:293.

16A:111 Law in American History II
3 s.h.
American legal thought, experience from 1860 to present. Graduate standing or consent of instructor required. Same as 091:294.

16A:114 Introduction to Native American History
3 s.h.

16A:115 Native North America I: Precontact-1789
3 s.h.
Same as 149:115.

16A:116 Native North America II: 1789-Present
3 s.h.
Same as 149:116.

16A:118 Unconservative and Radical Theologies in American History
2-3 s.h.
Intellectual patterns of the right, left: single historical settings. Same as 032:145.

16A:121 Puritanism in Old and New England
2-3 s.h.
Concepts of the sacred book, redemption, world’s end, church and state, family, women, Indians, sex. Same as 032:142.

16A:122 Varieties of American Religion
3 s.h.
Survey of distinctive groups: Mormons, Christian Scientists, Scientologists, Black Muslims, Unification Church of Sun Myung Moon. Same as 032:141.

16A:123 Religious Thought in America 1607-1640
2-3 s.h.
focus on leaders of American thought. Same as 032:143.

16A:124 Religious Thought in America 1640-Present
2-3 s.h.
See 16A:123. Same as 032:144.

16A:125 History of the Professions in America
3 s.h.

16A:126 Social History of American Science
3 s.h.

16A:127 Popular Music In the United States
3 s.h.

16A:131 The Frontier in American History to 1840
3 s.h.

16A:132 The Frontier in American History 1840-Present
3 s.h.

16A:133 American West in Film
4 s.h.

16A:134 Great Plains
3 s.h.

16A:135 American West in the Twentieth Century
3 s.h.
Focus on growth, redistribution of political power, exploitation of and competition for natural resources, intermingling of diverse cultural groups.

16A:137 History of Iowa
3 s.h.

16A:141 American Working Class to 1900
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.

16A:142 American Labor in the Twentieth Century
3 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.

16A:144 American Economic History
3 s.h.
Economic theory; emphasis on role of population, technology. Prerequisites: 06E:104 or 06E:104 for economics majors. 06E:010 and 16A:061 for non-economics majors. Same as 06E:108.

16A:146 Immigrant America 1845-1925
3 s.h.
Era of mass migration in world context; formation, organization of immigrant communities; diverse processes of adaptation, assimilation; rural, urban contrasts; coercive Americanization, immigration restriction.

16A:147 History of Slavery in the U.S.A.
3 s.h.
Origins, development; focus on labor, family, gender, community, culture, resistance; South’s defense of slavery; wartime collapse, destruction of slavery. Same as 129:137.

16A:149 United States as a World Power 1898-1945
3 s.h.

16A:150 United States as a World Power 1945-Present
3 s.h.

16A:151 United States in World Affairs to 1900
3 s.h.
Origins of modern diplomatic practice; security, territorial and commercial expansion; legal, constitutional problems.

16A:152 United States in World Affairs 1900-1975
3 s.h.
America’s emergence as leader in world affairs; imperialism, international collaboration, participation in world wars, the Cold war.

16A:153 U.S.A. in a World at War 1914-1945
3 s.h.
Significance of World War II to the United States.

16A:154 Sexuality in the United States
3 s.h.
Same as 131:188.

16A:155 Crime and Punishment in American History
3 s.h.

16A:157 History of American Society 1776-1850
3 s.h.
Social foundation of Revolutionary America; structure of agriculture, slavery, immigration, family, manufacturing, urbanization, class formation, state formation, reform movements; their relationship to political events, ideology.

16A:158 History of American Society 1850-1917
3 s.h.
Social foundation of the Civil War, Reconstruction; emergence of industrial and urban society, immigration, agrarian and working class protest, segregation, social reform, progressivism, nationalism, roots of imperialism.

16A:160 North America in the Atlantic World 1500-1800
3 s.h.

16A:161 The Colonial Period in America
3 s.h.
Foundation, growth of English colonies in North America; colonial, imperial political history before 1715; economic, cultural history 1607-1750.

16A:162 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.

16A:164 Civil War and Reconstruction
3 s.h.
Slavery, political and military conflict, emancipation, reconstruction; their impact on civilians and “soldiers, mc” and women, blacks and whites, North and South.

16A:165 The Gilded Age in America
3 s.h.
Emergence of industrial, urban America, from Civil War through 1890s; emphasis on social, political developments.

16A:166 The Progressive Era in America
3 s.h.

16A:167 The New Era and the New Deal 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.

16A:168 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.

16A:169 Jacksonian America
3 s.h.

16A:171 Women in America: Colonial Period to 1870
3 s.h.
American history through women’s eyes; interaction of biology, economics, politics, ideology; how traditional historical generalizations change when women’s experiences is considered; legal history and women’s education. Same as 131:171.

16A:172 Women in America: 1870-Present
3 s.h.
From passage of Fourteenth Amendment to present; interaction of biology, economics, politics, ideology; emphasis on suffrage movement, second wave feminist change. Same as 131:172.

16A:173 U.S. Women’s Legal History
3 s.h.
Junior standing or above required. Same as 131:173.

16A:174 Topics History: Women and Gender in the U.S. 1940-Present
3 s.h.
Same as 131:174.

16A:175 Gender and Constitutional History
3 s.h.
Same as 091:252.

16A:176 Women and Politics in the 20th Century
3 s.h.

16A:184 Black Metropolis: Twentieth Century
3 s.h.
Black popular culture and the African American urban experience. Same as 129:184.

16A:185 Themes in African American History
3 s.h.
Same as 129:189.

16A:186 African American Experience Civil War - Present
3 s.h.
Same as 129:185.

European History

16E:103 Ancient Slavery and Modern Ideology
3 s.h.

16E:104 The World of Ancient Greece
3 s.h.

16E:105 Women in the Ancient World
3 s.h.
Same as 014:105.

16E:106 Survey of Ancient Near East and Greece
3 s.h.
Social, economic, political, intellectual history of ancient civilization, from rise in Mesopotamia to eve of Alexander the Great’s conquests. GE: foreign civilization and culture.

16E:107 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. GE: foreign civilization and culture.

16E:108 Rise of the Roman Empire 264 BCE - 14 CE
3 s.h.

16E:109 Medieval Civilization
3 s.h.
Europe from decline of Roman empire to Renaissance; cultural, political, economic foundations of Western civilization. GE: foreign civilization and culture.
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016:244 Readings: Comparative Gender Frontiers arr. Same as 131:244.


016:247 Crossing Borders Seminar 3-4 s.h. Past and place of “memory studies” as a distinct research field; regional and national case studies involving controversies in archaeology, public discourse, museology, and so forth. Same as 01H:247, 008:231, 030:242, 044:286, 048:230, 113:247.


016:249 Teaching Seminar: Graduate Instructors 2-3 s.h. Issues and methods for effective history teaching at the college level.


016:254 Teaching Seminar: Preseminar 2-4 s.h. Preparation for leading undergraduate discussion sections for 016:001/003 European Experience I-III—specific subject matter preparation similar to that offered in graduate readings courses; for first-time graduate teaching assistants.


016:256 Readings: Russian History arr.


016:258 European Historical Demography arr.

016:259 Seminar: Interpreting Oral Histories arr. 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 129:259.


016:268 Readings: Modern United States arr.

016:269 Readings of the American South: Gender and Race in American History Same as 045:269.

016:270 Readings in the History of Women and Gender in the U.S.A. Same as 131:270.


016:273 Readings in American Social History arr.


016:280 Historiography 3 s.h.

016:281 Seminar: Law and Society in the U.S. arr. Reading and research in American legal history from American Revolution to present: authority, crime, civil liberties, rights and obligations of citizenship.

016:282 Gender and the Law in U.S. History Same as 091:628.

016:283 Feminist Theory: Historians’ Perspectives Same as 131:283.


016:289 Readings: Brazil arr.

016:290 Seminar: Post-Comprehensive Historical fields, methodological emphasis on presentation, criticism of research materials. Open only to students who have passed the Ph.D. comprehensive examinations.

016:291 Seminar: Modern Chinese History Same as 039:254.

016:292 Readings in Chinese History Same as 039:258.


016:294 Readings: Japanese History Same as 391:257.

016:295 Readings In The History of India arr.

016:296 Individual Study: Graduate arr.


016:298 Philosophy of History 3 s.h.


Plan of Study

Students are required to submit a plan of study for approval before declaring an interdepartmental studies major. Students should consult promptly with the interdepartmental studies adviser to discuss an appropriate individualized program for their academic goals. The adviser can explain the plan of study review process. The earlier in a student’s academic career a plan of study is submitted and approved, the more effective the student’s program will be.

Because the ISP major by definition allows for individualized academic planning, students are encouraged to apply for the program before or during the junior year.

GUIDELINES

Each plan of study submitted for approval must include:

an essay no more than five pages long that includes a clear statement of the area of intellectual focus; the reasons for preferring the 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 plan of study; and a description of academic goals for the bachelor’s degree; and a list of advanced-level course work already completed and of advanced-level course work planned for all remaining semesters.

Each plan of study is approved by a committee that may include the coordinator, the faculty advisory committee, and the ISP adviser. Reviews are held twice each semester.

If the committee does not grant approval, the plan of study may be returned to the student for revisions and resubmission at the next committee meeting. In some cases, the student may be referred to an appropriate departmental major.

Students are required to take the courses approved in the plan of study. A limited number of substitutions may be allowed, but only if they are clearly consistent with the area of intellectual focus in the approved plan of study and only if they are approved in advance by the ISP adviser. Unauthorized substitutions may be designated as elective course work.

Significant changes in the focus of a student’s plan of study require the submission and approval of a revised plan of study. The student’s academic adviser determines whether changes warrant a revised plan.

Forms and guidelines for preparing the plan of study are available from the interdepartmental studies adviser in the Liberal Arts Office of Academic Programs. A list of review committee meeting times is available each semester.

Bachelor of Arts

Students must earn a total of at least 124 semester hours, including the 36 semester hours of advanced course work specified in the plan of study, in order to graduate with a B.A. in interdepartmental studies. They must complete a minimum of 30 semester hours after
entering the program, 15 of which must be in advanced-level course work included in the plan of study.

Having a plan of study approved before embarking on the final two semesters ensures that students are truly planning ahead for a senior year. Hours taken during the semester in which the plan of study is approved are not counted as part of the final 30 semester hours.

Grade-Point Average

Students must achieve a grade-point average of at least 2.00 in all college work attempted, all college work undertaken at The University of Iowa, and all advanced courses attempted.

General Education Program

Students must complete the College of Liberal Arts General Education Program, including four semesters of college-level foreign language or the equivalent. (See the College of Liberal Arts introductory section for specific information.)

Course Work for the Plan of Study

Students must complete at The University of Iowa at least 36 semester hours of advanced course work approved as the formal plan of study. No more than 18 semester hours of advanced course work from any one department may be counted toward this requirement. (However, students who earn more than 18 semester hours in advanced course work from one department may count these as elective hours and apply them toward the 124 semester hours needed for graduation.)

Courses taken to complete the General Education Program may not be counted toward completion of the advanced course work requirement.

Advanced courses typically are those numbered 100 and above. With approval of the Office of Academic Programs, courses numbered below 100 but taught at an advanced level also may be used to satisfy this requirement. See “Advanced Courses Numbered below 100” in this section of the Catalog.

The pass/nonpass grading option is not available for the 36 semester hours of advanced course work required for the degree, but it may be used for advanced course work taken as elective credit beyond the 36 semester hours.

Some study abroad advanced course work is considered residential work for the purposes of ISP requirements and college residence requirements. Students should check in advance with the ISP academic adviser or the ISP coordinator.

Advanced courses offered through University of Iowa Guided Correspondence Study count toward the advanced course work requirement, but the College of Liberal Arts residence requirement must be met by other UI course work.

Restrictions

No more than 40 semester hours of credit in one academic department may count toward the 124 semester hours required for graduation.

This includes both upper- and lower-level course work, and both UI and transfer course work.

Students completing a B.A. in interdepartmental studies may earn no more than 30 semester hours of credit toward the 124 required for graduation from courses taken in all other colleges of the University (e.g., business, engineering). Undergraduate courses offered by the College of Education are an exception to this rule.

All other College of Liberal Arts policies regarding residence, pass/nonpass, satisfactory/fail, and academic standards apply to ISP students.

Related Considerations

All courses numbered with the prefix 007 (College of Education) are considered to be in one department. All courses numbered with the prefix 006 (College of Business) are considered to be in one department, except 06E [economics], which is also considered a department in the College of Liberal Arts.

Advanced Courses Numbered below 100

Some courses numbered below 100 are accepted as part of the 36 semester hours of advanced course work required under the ISP rules. Courses listed as advanced for purposes of departmental minors also are accepted as advanced for the ISP major (consult the section on minors in the relevant departmental section(s) of the Catalog). Some courses may have prerequisites. Students must earn a grade-point average of 2.00 or higher in these courses and in all numbered 100 or 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.)

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least one-half of the semester hours required for graduation

Before the seventh semester begins: an approved plan of study, at least six courses in the plan of study, and at least three-quarters of the semester hours required for graduation

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

ISP students qualify for membership in the University Honors Program by maintaining a cumulative grade-point average of at least 3.20. Graduating with honors usually includes the successful completion of the honors requirements in a particular department or program.

ISP students should initiate inquiries about graduating with honors by contacting the ISP coordinator. Students are encouraged to inquire early in their junior year to allow time for foundation course work. The director of the University Honors Program can offer suggestions for contacting a supervising faculty member or committee from one or several appropriate departments. Because the ISP exists outside traditional departmental structures, a special form for approval of an honors project must be filed with the ISP coordinator, the director of the honors program, and the student’s ISP adviser.

Double Major

Interdepartmental studies students may earn a second major. No more than 6 semester hours of course work may be applied toward both majors. The focus represented by each major should be distinct and separate.

Simultaneous Degrees

Interdepartmental studies students may earn a second degree (see “Simultaneous Degrees” in the College of Liberal Arts introductory section).

Certificates

Interdepartmental studies students may earn certificates in other programs, departments, or colleges. The same course may be used to meet the requirements of both the major in interdepartmental studies and the certificate program.

Minor

The Interdepartmental Studies Program does not offer a minor. Interdepartmental studies students may earn minors in other programs, departments, or colleges. The same course may not be used to meet the requirements of both the major in Interdepartmental Studies and the minor.

Career Considerations

Since the B.A. in interdepartmental studies affords opportunities outside the traditional degree pattern, students must create programs of study that meet their individual educational and career objectives. Those who plan to seek employment immediately following graduation should familiarize themselves with the educational background and qualifications required by employers and should include appropriate courses in their programs of study.

Students preparing for advanced study should become familiar with the admissions requirements of graduate or professional schools in which they are interested. The earlier students decide on pursuing graduate or professional study, the easier it is for them to complete any necessary prerequisites.
Courses

145:000 Cooperative Education Internship 0 s.h.

INTERNATIONAL BUSINESS

The certificate requires course work in international business, international relations and institutions, foreign language, and area studies, as follows.

INTERNATIONAL BUSINESS

Both of these:
06E:001 Principles of Microeconomics 3-4 s.h.
06E:002 Principles of Macroeconomics 3-4 s.h.

Three of these (total of 9 semester hours):
06E:125 International Economics 3 s.h.
06E:129 Economic Growth and Development 3 s.h.
06E:164 Economics in Transition 3 s.h.
06E:173 Advanced International Economics 3 s.h.
06F:130 International Finance 3 s.h.
06J:146 International Business Environment 3 s.h.
06M:151 International Marketing 3 s.h.
091:282 International Business Transactions 3 s.h.
091:287 International Economic Relations 3 s.h.

INTERNATIONAL RELATIONS AND INSTITUTIONS

Two of these (total of 6 semester hours):
16W:138 (152:138) History of International Health 3 s.h.
019:156 Comparative Communication Systems 3 s.h.
019:157 (044:157) Third World Development Support 3 s.h.
030:040 Introduction to Politics of Industrial Democracies 3 s.h.
030:041 Introduction to Politics of Russia and Eurasia 3 s.h.
030:042 Introduction to the Politics of Developing Areas 3 s.h.
030:060 Introduction to International Relations 3 s.h.
030:061 Introduction to American Foreign Policy 3 s.h.
030:149 Problems in Comparative Politics 3 s.h.
030:150 Politics of Emerging Market Economies 3 s.h.
030:156 Politics of Ethnic and Cultural Conflict 3 s.h.
030:160 International Politics 3 s.h.
030:161 International Organization and World Order 3 s.h.
030:162 American Foreign Policies 3 s.h.
030:164 Continuity and Change in the International System 3 s.h.
030:165 International Conflict 3 s.h.
030:166 Global Political Communication 3 s.h.
030:167 Politics and the Multinational Enterprise 3 s.h.
030:169 Problems of International Politics 3 s.h.
030:170 The Politics of International Economics 3 s.h.
030:179 Transitions to Democracy 3 s.h.
034:159 Families in Comparative Perspective 3 s.h.
034:163 Comparative Sociology 3 s.h.
036C:093 (042:093) Intercultural Communication 3 s.h.
044:011 Population Geography 3 s.h.
044:015 Introduction to Political Geography 3 s.h.
044:030 The Global Economy 3 s.h.
044:035 World Cities 3 s.h.
044:094 International Development 3 s.h.
044:162 Work, Gender, and Development 3 s.h.
046:163 Geography of Newly Industrializing Countries 3 s.h.
044:172 Development Planning and Policy 3 s.h.
044:176 Social Consequences of Global Change 3 s.h.
044:194 Geographic Perspectives on Development 3 s.h.
047:005 Making of the Modern Global System 3 s.h.
047:010 (044:010) The Contemporary Global System 4 s.h.
047:150 Internetworks in International Development 3 s.h.
113:010 Anthropology and Contemporary World Problems 3 s.h.
113:135 Work and Society 3 s.h.
113:143 Environment and Culture 3 s.h.
113:175 (131:175) Gender and Development Studies 3 s.h.
113:181 (129:151) Race, Ethnicity, and International Relations 3 s.h.

FOREIGN LANGUAGE

Students must complete a foreign language sequence. For languages not listed below, for study abroad course work, or for questions, see an international business certificate adviser.

Chinese
039:008-009 First-Year Chinese: First and Second Semesters 10 s.h.
or
039:100-101 Advanced First-Year Chinese 10 s.h.
or
039:010-011 Second-Year Chinese: First and Second Semesters 10 s.h.

French
009:001-002 Elementary French I-II 8 s.h.
or
009:010 First-Year French Review 5 s.h.
or
009:011-012 Intermediate French I-II 8 s.h.
A course for which 009:012 is prerequisite

German
013:011-012 Elementary German I-II 8 s.h.
or
013:013 Intensive Elementary German 6 s.h.
or
013:014 First-Year German Review 4 s.h.
or
013:021-022 Intermediate German I-II 8 s.h.
A course for which 013:022 is prerequisite

Hindi
039:031-032 First-Year Hindi: First and Second Semesters 10 s.h.
or
039:033-034 Second-Year Hindi: First and Second Semesters 8 s.h.
Italian

018:001-002 Elementary Italian I-II 8 s.h. or
018:103 Intensive Elementary Italian 6 s.h.
018:011-012 Intermediate Italian I-II 8 s.h. A course for which 018:012 is prerequisite

Japanese

39J:008-009 First-Year Japanese: First and Second Semesters 10 s.h.

Portuguese

038:100 Accelerated Elementary Portuguese 0-5 s.h. or
038:102 Portuguese for Spanish Speakers 3 s.h.
038:101 Accelerated Intermediate Portuguese 0-5 s.h. A course for which 038:101 is prerequisite

Spanish

035:001-002 Elementary Spanish I-II 8 s.h. or
035:005 Elementary Spanish Review 5 s.h.
035:011-012 Intermediate Spanish I-II 8 s.h. or
035:013 Accelerated Intermediate Spanish 6 s.h. A course for which 035:012 is prerequisite

Swahili

103:015-016 Elementary Swahili I-II 8 s.h. or
103:017-018 Intermediate Swahili I-II 8 s.h.

Zulu

103:031-032 (129:031-032, 141:031-032) Elementary Zulu I-II 8 s.h.
103:033-034 (129:033-034, 141:033-034) Intermediate Zulu I-II 8 s.h.

AREA STUDIES

Students complete 6 semester hours from one geographic area. The area should be appropriate to the language the student chooses for the language requirement.

Asia

Appropriate for these languages: Chinese, Hindi, or Japanese
01H:016 (039:016) Asian Art and Culture 3 s.h.
016:005 (039:055) Civilizations of Asia: China 3 s.h.
016:006 (039:056) Civilizations of Asia: Japan 3 s.h.
16W:173 (39J:173) Modern Japan to 1945 3 s.h.
16W:194 (039:134) Imperialism and Modern India 3 s.h.
16W:196 (039:154) Modern China 8000 to Present 3 s.h.
16W:197 United States and China in the 20th Century: Culture and Diplomacy 3 s.h.
026:144 Indian Philosophy 3 s.h.
026:145 Buddhist Philosophy 3 s.h.
030:143 (039:178) Government and Politics of the Far East 3 s.h.
032:004 (039:064) Living Religions of the East 3 s.h.
032:006 (039:066) Introduction to Buddhism 3 s.h.
032:008 (039:180) Asian Humanities: India 3 s.h.
032:009 (039:199) Asian Humanities: China 3 s.h.
032:169 (039:169) Karma, Rebirth, and Human Destiny 3 s.h.
032:176 (039:161) Chinese Religions 3 s.h.
032:177 (039:136) Indian Literature 3 s.h.
032:184 (039:164) Religious Themes in Japanese Literature 3 s.h.
032:189 Religion in Modern Japan 3 s.h.
032:191 (039:167) Religion in India 3 s.h.
034:154 Society and Politics in East Asia 3 s.h.
039:020 Asian Humanities: Japan 3 s.h.
039:057 (016:006) Civilizations of Asia: South Asia 3 s.h.
039:145 (36F:106) Topics in Asian Cinema 3 s.h.
039:158 (048:158) East-West Literary Relations 3 s.h.
039:180 Modern Chinese Writers 3 s.h.
039:197 (131:197) Gender in Chinese Literature and Culture 3 s.h.
039:199 Asian Studies 3 s.h.
39J:103 Language in Japanese Society 3 s.h.
39J:125 (113:125) Japanese Society and Culture 3 s.h.
39J:126 (113:126) Japanese Values Through Literature/Film 3 s.h.
39J:142 (048:142) Modern Japanese Fiction in Translation 3 s.h.
39J:144 Major Authors in Modern Japanese Literature 3 s.h.
39J:155 Contemporary Japanese Culture 3 s.h.

Europe

Appropriate for these languages: French, German, Italian, Portuguese, or Spanish
009:110 Introduction to French Literature: Twentieth Century 3 s.h.
009:114 French Civilization 3 s.h.
009:147 (36F:105) French Cinema 3 s.h.
009:168 (048:168) Post-Colonial Literature in France 3 s.h.
103:010 Introduction to German Literature 3 s.h.
103:015 German Cultural History 3 s.h.
103:018 The German Media 3 s.h.
103:112 Twentieth-Century German Literature 3 s.h.
103:115 Contemporary German Civilization 3 s.h.
103:119 German Film 3 s.h.
16E:135 Twentieth-Century Europe: The Nazi Era 3 s.h.
16E:136 Twentieth-Century Europe: The Cold War and After 3 s.h.
16E:146 France from 1815 to the Present 3 s.h.
16E:148 (131:182) Society and Gender in Europe 1750-Present 3 s.h.
16E:152 Modern Britain 1867-Present 3 s.h.
16E:156 Germany Since 1914: Weimar, Hitler, and After 3 s.h.
16E:161 Politics and Culture in Twentieth-Century Europe 3 s.h.
018:105 Modern Italian Fiction 3 s.h.
018:106 Modern Italian Poetry and Drama 3 s.h.
030:176 French Politics and Society 3 s.h.
035:121 Readings in Spanish Literature and Culture 3 s.h.
035:150 Spanish Civilization 3 s.h.
035:152 Modern Spanish Literature 3 s.h.
035:165 Topics in Contemporary Spain 3 s.h.
36F:021 (048:021) European Film History 3 s.h.
038:107 Introduction to Portuguese Literature 3 s.h.
038:114 Culture and Civilization of the Portuguese-Speaking World 3 s.h.

Latin America

Appropriate for these languages: Portuguese or Spanish
16W:110 Topics in Latin American History 3 s.h.
16W:112 Introduction to Modern Latin America 3 s.h.
16W:113 The Mexican Revolution 3 s.h.
16W:116 Women in Latin America 3 s.h.
030:144 Latin American Government 3 s.h.
035:020 Contemporary Spanish American Narrative 3 s.h.
035:123 Screening Latin America 3 s.h.
035:125 Readings in Spanish American Literature and Culture 3 s.h.
035:130 Spanish American Civilization 3 s.h.
035:131 Contemporary Spanish American Fiction 3 s.h.
035:133 Spanish American Theater 3 s.h.
035:134 Spanish American Short Story 3 s.h.
035:138 Survey of Twentieth-Century Puerto Rican Literature 3 s.h.
035:145 (36F:107) Latin American Cinema 3 s.h.
035:152 Latin American Women Writers 3 s.h.
035:175 Cultural Identity in Caribbean Literature 3 s.h.
038:020 Contemporary Brazilian Narrative 3 s.h.
038:106 Brazilian Literature II 3 s.h.
038:112 Topics in Luso-Brazilian Literature 3 s.h.
038:114 Culture and Civilization of the Portuguese Speaking World 3 s.h.
113:114 Amazonian Indians 3 s.h.
113:130 Latin America: Cultural Politics and Society 3 s.h.
113:131 Latin American Economy and Society 3 s.h.
IOWA BIOSCIENCES ADVANTAGE

Director: Peter Nathan
Web site: http://www.uiowa.edu/iba/

The Iowa Biosciences Advantage (IBA) offers unique opportunities for traditionally underrepresented American ethnic minority students with interest and ability in math and science. Its aim is to encourage undergraduate study in the biosciences in preparation for research careers.

All IBA students complete a precollege summer program that introduces them to research in the biosciences. Throughout their undergraduate careers, they receive one-on-one mentoring from University of Iowa senior faculty members in the biosciences.

IBA students prepare for graduate-level course work by participating in research and attending seminars and conferences. As undergraduates, they also enjoy a unique opportunity to become well-acquainted with the University’s highly ranked graduate programs in the biomedical sciences.

Each IBA student receives a laptop computer, earns a salary for laboratory research, and is eligible for financial support for travel to conferences. Room and board are provided free during the summer.

Curriculum

Students enter IBA in the summer before their first full academic year at Iowa. Summer activities include a special orientation to the program and a two-day orientation to The University of Iowa. First-year students enroll in two credit-bearing enrichment courses during the six-week summer session. The courses, -168:040 IBA Introduction to Research Methods and 168:043 IBA Quantitative Methods for Biological Researchers, are designed to enhance students’ verbal skills and their skills at using research tools in analytical and quantitative reasoning. The courses also help demystify mathematical concepts and applications, helping students reduce math anxiety and build confidence. Students who have successfully completed an honors or advanced placement calculus course in high school may not be required to take the quantitative methods enrichment course. Other enrichment courses are offered to advanced IBA students, as well.

All IBA students, including first-year students who enter in summer, spend a substantial part of the summer gaining research experience in their faculty mentor’s laboratory. That research activity is sustained throughout the student’s undergraduate career.

Beginning with their first fall semester, students take courses to satisfy requirements for their undergraduate degrees. They also attend courses, seminars, and workshops offered exclusively to IBA students. Two credit-bearing courses, -168:041 IBA Biomedical Research Seminar and 168:047 IBA Research in Biomedical Science, are offered during the academic year. The seminar, which meets biweekly, acquaints students with a range of contemporary biomedical research projects, approaches, and concepts as well as with knowledge domains in both biomedical and bioscience-related research. Presenters typically are biomedical research faculty mentors and IBA participants. The research course enables IBA students to earn credit for their required work in their mentors’ biomedical laboratories.

Students who work in a laboratory at least five hours per week receive 1 semester hour of credit (graded satisfactory/fail). Those who work 6-10 hours per week earn 2 semester hours of credit.

Faculty members from the University’s broad range of basic and biomedical science disciplines serve as teachers and mentors to IBA students. Program faculty hold appointments in several UI colleges and represent many departments, including anatomy and cell biology, biochemistry, biological sciences, biomedical engineering, chemistry, exercise science, genetics, immunology, microbiology, molecular biology, neuroscience, pharmacology, pharmacy, physiology and biophysics, psychology, and speech pathology and audiology.

Admission

Students apply to the Iowa Biosciences Advantage during their senior year of high school. To be considered for acceptance to IBA, students must be admitted to The University of Iowa. An interview with IBA executive committee members is usually part of the admission process.

To qualify for admission to IBA, a student must:

be a member of an underrepresented American ethnic minority group (African American, Hispanic or Latino/a, Native American);
possess a strong interest in science;
have a high school grade-point average of 3.50 (where A=4.00) or be in the top 30 percent of his or her graduating class;
have an ACT composite score of 25 or higher, or an SAT composite score of 1110 or higher.

Applicants must submit transcripts showing that they have completed high school math, biology, and chemistry. They also must submit at least two letters of recommendation from high school teachers.

The application deadline is March 1 for summer entry.

Courses

168:040 IBA Introduction to Research Methods 1 s.h.
Verbal skills, analytical and quantitative reasoning, research skills; may include outside activities (e.g., visits to research facilities); workshop format. Admission to Iowa Biosciences Advantage or consent of instructor required.

168:041 IBA Biomedical Research Seminar 1 s.h.
Presentations, discussions by faculty mentors, IBA students, others; may include reading assignments. Open only to Iowa Biosciences Advantage students. May be repeated. Offered spring and fall semesters.

168:042 IBA Writing for Biological Researchers 3 s.h.
Admission to Iowa Biosciences Advantage or consent of instructor required. Same as 010:002.
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. Because some courses are offered only alternate summers, the current Iowa Lakeside Laboratory Bulletin or the University’s summer Schedule of Courses should be consulted for the courses being offered in summer session. The Iowa Lakeside Laboratory Bulletin also contains additional information about the Iowa Lakeside Laboratory and about each course being offered.

Research projects by undergraduates, graduate students, and faculty can be completed either on the campus or at many nearby natural areas. Undergraduate and graduate students are strongly encouraged to do independent projects at Iowa Lakeside 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.

Financial Aid

Iowa Lakeside Laboratory scholarships are available to both undergraduates and graduate students. All scholarships cover room and board. Students are encouraged to stay at Lakeside for their thesis and dissertation research.

Iowa Lakeside Laboratory scholarships are available for long-term or short-term research projects. Offered summer sessions of odd years. Prerequisite: one course in the biological sciences.

00L:103 Aquatic Ecology 4 s.h.

Introduction to the principles of ecology at the population, community, ecosystem levels; field studies of local lakes, wetlands, and prairies are used to examine factors controlling distributions, interactions, and roles of plants and animals in native ecosystems.

00L:105 Flora of the Iowa Lakes Region 2 s.h.

00L:054 Illustrating Nature-Sketching 2 s.h.

Sketching plants, animals, terrain; techniques, development of a personal style, integration of drawing and writing on a page.

00L:044 Illustrating Nature-Photography 2 s.h.

Beginning/intermediate technique and composition in color photography of natural areas, their plants and animals.

Placement with county conservation boards, camps, parks, and so forth for experience as interpreters, rangers, technicians.

Sophomore standing and consent of instructor required.

00L:050 Undergraduate Internship 1-5 s.h.

Placement with county conservation boards, camps, parks, and so forth for experience as interpreters, rangers, technicians.

Sophomore standing and consent of instructor required.

00L:056 Ecology 4 s.h.

Iowa Lakeside Laboratory scholarships are also available to art majors. The scholarship is available for long-term or short-term research projects.

00L:104 Ecology 4 s.h.

Landscape development as a product of geologic materials and processes; sedimentary deposits, soils, the natural history of the area; geologic time and the history of life; field trips.

00L:010 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, landscaped "eco" project, Project WET; field trips.

00L:101 Iowa Natural History 4 s.h.

Biological diversity and its causes examined through lectures and field trips to native lake, marsh, forest, and prairie habitats; topics include measuring the environment, sampling and identifying organisms, experimenting with the ecosystem, understanding species interactions, and appreciating influences of past and present climates and geological events on natural ecosystems of the region. Prerequisite: one course in the biological sciences. Offered summer sessions of odd years.

00L:102 Plant-Animal Interactions 3 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. Offered summer sessions of even years. Prerequisite: one course in the biological sciences.

00L:103 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. Prerequisites: courses in ecology, chemistry, and physics.

00L:104 Ecology 4 s.h.

Introduction to the principles of ecology at the population, community, ecosystem levels; field studies of local lakes, wetlands, and prairies are used to examine factors controlling distributions, interactions, and roles of plants and animals in native ecosystems.

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Introduction to ecology and co-evolution of plants and animals; emphasis on dispersal, pollination, plant-herbivore interactions; field and laboratory work, reading, discussion. Offered summer sessions of even years. Prerequisite: one course in the biological sciences.
00L:113 Undergraduate Independent Study 1-4 s.h. Junior or senior standing and consent of instructor required.

00L:115 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. Offered summer sessions of even years.

00L:117 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 character; project design and execution, including construction of reference and voucher collections; data organization and analysis.

00L:119 Evolution 4 s.h. Mechanisms and patterns in microevolution, macroevolution; field exercises emphasizing studies of natural selection, adaptation, genetic variation, and population genetics of local plant, animal populations.

00L:120 Freshwater Invertebrates 3 s.h. Field-oriented introduction to identification, life history, and ecology of common, free-living freshwater invertebrates of north-temperate lakes, rivers, wetlands; emphasis on invertebrates' role in aquatic food chains and litter processing. Prerequisite: an ecology course.

00L:121 Plant Ecology 4 s.h. Principles of plant population, community, and ecosystem ecology illustrated through studies of native vegetation in local prairies, wetlands, forests, group or individual projects. Offered summer session of even years. Prerequisite: familiarity with basic principles in biological sciences and ecology.

00L:124 Wetland Ecology 4 s.h. Ecology, classification, creation, restoration, and management of wetlands; field studies on composition, structure, and function of local natural wetlands, restored prairie pothole wetlands; individual or group projects. Offered summer sessions of even years. Prerequisite: 00L:031.

00L:126 Ornithology 4 s.h. Biology, ecology, 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.

00L:127 Introduction to Insect Ecology 4 s.h. Insects; their diversity and life history; emphasis on ecology and behavior; field, laboratory study. Offered summer sessions of odd years.

00L:128 Fish Ecology 4 s.h. Basic principles of fish interaction with biotic and abiotic environments; field methods, taxonomy, and biology of fish with emphasis on the fish fauna of northwestern Iowa. Offered summer sessions of even years.

00L:129 Vertebrate Ecology and Evolution 4 s.h. Field and laboratory study of representative vertebrates of northwestern Iowa; observations and experimentation emphasize ecological histories by integrating concepts of functional morphology, behavioral ecology, evolutionary biology.

00L:130 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 biting, nature photography, mushrooms and other fungi, Iowa's trees and forests, fish biology, prairies and prairie restoration, common algae, common insects, aquatic plants, birds in rivers, life in lakes, mosses and liverworts, natural history of Iowa Great Lakes region, field archaelogy, scuba diving, nature sketching, five-day, non-technical introductions.

00L:141 Statistical Methods for Field Biologists 4 s.h. Design and implementation of ecological and environmental field studies and statistical analyses; interpretation, presentation of data; fundamentals of experimental design, hypothesis testing with continuous and discrete data, simple and multilinear regression and correlation, introduction of analysis of variance, data presentation. Offered summer sessions of odd years.

00L:142 Watershed Hydrology and Soilfrac Processes 4 s.h. Effects of geomorphology, soil, and land use on transport of water and materials (infiltration, contaminant(s) to watershed; fieldwork emphasizes investigations of the Iowa Great Lakes watershed. Prerequisites: four courses in the physical or biological sciences or engineering.

00L:145 Introduction to Environmental Planning 4 s.h. Environmental planning theories and methods; emphasis on geographic information systems (GIS) techniques for watershed hydrologic and water quality modeling, water resource management; approaches to watershed analysis, modeling, management; analytical tools for modeling watershed hydrology, water quality; case studies in modeling and managing rural and urban watersheds. Offered summer sessions of odd years.

00L:150 Watershed Modeling and GIS 4 s.h. Geographic information systems (GIS) techniques for watershed hydrologic and water quality modeling, water resource management; approaches to watershed analysis, modeling, management; analytical tools for modeling watershed hydrology, water quality; case studies in modeling and managing rural and urban watersheds. Offered summer sessions of odd years.

00L:156 Advanced Field Ornithology 2 s.h. Field study of birds of the upper Midwest; extended field trip to Minnesota, Wisconsin; individual or group project. Field trip fee. Corequisite: 00L:126.

00L:160 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. Offered summer sessions of odd years. Prerequisite: a course in ecology.

00L:161 Introduction to GIS Modeling 1 s.h. Descriptive and predictive geographic information systems (GIS) modeling techniques, spatial statistics, map algebra; application of GIS modeling techniques to environmental planning and resource management, including modeling land use, watershed planning, historic vegetation patterns, archaeological site inventories. Offered summer sessions of odd years.

00L:163 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 even years. Prerequisite: 00L:051.

00L:165 Behavioral Ecology 4 s.h. Ecological and evolutionary theories of animal behavior examined through field studies of animal colonization, courtship, territoriality, predator defense, habitat selection, foraging, mating systems, parental care. Prerequisite: two biological sciences courses. Offered summer sessions of even years.

00L:166 Amphibians and Reptiles 4 s.h. Ecology, behavior, and conservation biology of amphibians and reptiles, with focus on their anatomy, morphology, temperature and water regulation, locomotion, life history, reproduction, population and community ecology, conservation. Prerequisite: two biological sciences courses.

00L:175 Soil Genesis and Landscape Relationships 4 s.h. Relationships between soil formation, geomorphology, environment; soil description, classification, geography, mapping, interpretation for land use. Offered summer sessions of even years.

00L:199 Undergraduate Research 1-4 s.h. Junior or senior standing and consent of instructor required.

00L:213 Graduate Independent Study 1-4 s.h. Graduate standing and consent of instructor required.

00L:240 Natural History Workshop 1.3 s.h. An aspect of the upper Midwest's natural history, or techniques for studying natural history. Consent of instructor required.

00L:250 Graduate Internship 1-5 s.h. Experience as interpreters, rangers, technicians, and teachers through placement with county conservation boards, camps, parks, schools, or centers. Graduate standing and consent of instructor required.

00L:299 Research 1-4 s.h.

ITALIAN

See “French and Italian.”

JOURNALISM AND MASS COMMUNICATION

Director: John Soloski
Professors: Kay Amert, Carolyn Stwert Dyer, Hanno Hardt, Donald Smith, Jeffrey Smith, John Soloski, Kenneth Stark

Professors emeriti: Joseph Ascroft, Gilbert Cranberg, Al Talbott

Associate professors: Daniel A. Berkowitz, Venise Berry, Stephen G. Bloom, John Erickson, John Kimmich, Sue Lanky, Judy Polumbaum

Associate professor emeritas: William Zima

Adjunct associate professor: Iris Frost

Assistant professors: John Bennett, Frank Durham, Gigi Durham, Jane Singer

Adjunct assistant professors: Douglas Allaire, Kate Corcoran, Daniel Lind

Instructor: Richard Johns

Undergraduate degrees: B.A., B.S. in Journalism and Mass Communication

Undergraduate nondegree program: minor in Journalism and Mass Communication

Graduate degrees: M.A. in Journalism; Ph.D. in Mass Communications

Web site: http://www.uiowa.edu/~journal

Undergraduate Program

Undergraduate majors prepare for careers in journalism and mass communication. Journalistic writing is the core of the professional program; visual communication also is an important focus. Graduates have used their preparation to work in areas such as newspapers, magazines, radio, television, electronic communications, public relations, publication design, photojournalism, and media research.

Majors are required to take both professional and academic courses offered by the school. The undergraduate program integrates development of professional skills with the study of historical, legal, cultural, and institutional roles of media in society.

The program also builds on the University’s commitment to the liberal arts, requiring that majors complete extensive academic work outside of the journalism school.

Students earn the B.A. or B.S. degree.

The school is accredited by the Accrediting Council on Education in Journalism and Mass Communications.

Selective Admission

To preserve the quality of its programs, the School of Journalism and Mass Communication has a selective admission program. Thus, students with a declared interest in journalism are classified as prejournalism majors until they are admitted to major status.

To apply for admission to the program as majors, students must have taken or be taking two premajor courses, 019:090 and 019:091 (see “Premajor Foundations”), as well as all required rhetoric courses. Students may apply for admission to major status during the semester in which they will complete these requirements and also complete a total of at least 45 semester hours of course work overall.
Students in the University Honors Program may apply for admission to major status in the semester during which they will complete the premajor requirements and 30 semester hours of course work. Students who hold Presidential Scholarships, Dean’s Scholarships, or Daily Iowan Scholarships are eligible for major status upon enrollment at the University.

Applications and deadline information are available from the School of Journalism and Mass Communication office.

The primary criterion for admission to major status is overall academic performance. Other factors considered are a statement of interest submitted by the student, demonstrated writing ability, prior media experience, and performance in journalism courses. The number of students accepted each semester depends on the number of students already in the program and available resources. Since the selective admission policy was instituted, all qualified applicants with overall and journalism grade-point averages above 2.50 have been admitted. Many applicants with overall grade-point averages above 2.50 have been accepted. The school reviews applications with the goal of admitting the most qualified students to the program.

Curriculum

Majors complete a minimum of 31 and a maximum of 40 semester hours of journalism courses in accordance with College of Liberal Arts guidelines. Students must achieve a grade-point average of at least 2.00 in courses in their major in order to graduate. Majors also must complete a second major or 24 semester hours in a second area of concentration.

The undergraduate program’s flexibility allows each major to develop an individual plan of study in consultation with a faculty adviser.

Required Courses

All majors must complete the following course work (minimum of 31, maximum of 40 semester hours).

Premajor Foundation

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>019:090</td>
<td>Social Scientific Foundations of Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>019:091</td>
<td>Cultural and Historical Foundations of Communication</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Journalism Laboratory and Workshop

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>019:115</td>
<td>Journalistic Reporting and Writing</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>One advanced reporting and writing course (019:120-019:125)</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>One workshop course (019:130-019:137)</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>A second advanced reporting and writing or workshop course (019:130-019:125, 019:130-019:137, 019:171 or 019:172)</td>
<td>4 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Conceptual Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>019:149</td>
<td>Legal and Ethical Issues in Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>An advanced conceptual course (019:150-019:169)</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Electives

Course work chosen from undergraduate journalism and mass communication courses 3 s.h.

Additional Electives

Additional courses up to the maximum 40 semester hours (optional)

Second Area of Concentration

In addition to completing the College of Liberal Arts General Education Program, every journalism major must complete a second area of concentration outside of journalism and mass communication. Study in the second area permits students to acquire a substantial body of knowledge, learn how another discipline views the world, and/or develop a companion set of skills to those in journalism and mass communication.

This concentration requirement may be fulfilled by completing a second major or by choosing 24 semester hours of related course work in one or more departments. Students who do not complete second majors must complete at least 15 of the 24 required semester hours in advanced courses (in most departments, advanced courses are numbered 100 or higher). Course work in the second area must be arranged in consultation with the student’s adviser; each student must have the adviser’s written endorsement of the second area before graduation.

BACHELOR OF ARTS

Students seeking a B.A. in journalism and mass communication must complete the journalism major requirements (31 semester hours) and must fulfill the school’s second area of concentration requirement in one of two ways.

Option 1: complete a full B.A. major in another department.

Option 2: complete a 24-semester-hour concentration of related courses in one or more departments that offer B.A. degrees.

BACHELOR OF SCIENCE

Students seeking a B.S. in journalism and mass communication must complete the journalism major requirements (31 semester hours), and must fulfill the school’s second area of concentration 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-semester-hour concentration of related courses in the social sciences (economics, geography, political science, psychology, or sociology) and/or the natural and mathematical sciences; and complete all the special math, research methods, statistics, computer science, and/or cognate science requirements necessary for the B.S. degree in the department in which the majority of second-area work is done.

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: With the exception of a few students admitted as freshmen, students are admitted to the School of Journalism on a competitive, selective basis, and the four-year graduation plan agreement does not hold for students who are not admitted. Also, each student must complete either a second major or a second area of concentration consisting of at least 24 semester hours. These checkpoints show only the minimum requirements for a second area, not for a second major.

Before the third semester begins: either 019:090 or 019:091 and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: admission to the major, an additional course in the major, at least one second-area course, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: two additional courses in the major, three additional second-area courses, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: two additional courses in the major and two second-area 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

Majors with outstanding academic records who already participate in the University Honors Program may earn the honors degree in journalism and mass communication. The program gives students the opportunity to complete individual work under the guidance of a faculty member.

A major with an overall grade-point average of 3.20 or higher should contact the honors adviser in the School of Journalism and Mass Communication to review possible interest areas and topics the student might pursue in an honors project. The student also should identify a faculty member with whom he or she will develop an honors project. The student may arrange honors readings with a particular faculty member or take existing courses in the area of interest. Honors projects may be completed in the form of a thesis or a professional project. Honors students must maintain a 3.20 grade-point average to graduate with honors.

National Honor Society

The department sponsors a chapter of Kappa Tau Alpha (KTA), a national society honoring scholarship in journalism. Students whose grade-point average places them in the top 10 percent of all journalism students and who have completed 15 semester hours of course work in journalism and mass communication are considered for membership. Consult the
departmental honors adviser for more information.

Minor
To meet the requirements for a minor, students must complete at least 15 semester hours in journalism and mass communication with a grade-point average of at least 2.00; 12 of the 15 semester hours must be taken in advanced courses at The University of Iowa (those numbered 019:100 or above). One of the following courses is strongly recommended.

019:090 Social Scientific Foundations of Communication 3 s.h.
or
019:091 Cultural and Historical Foundations of Communication 3 s.h.
or
019:095 Media and Consumers 3 s.h.

The minor is not intended to be sufficient professional preparation for careers in journalism or mass communication. It should be regarded as an introduction to the field.

Courses for the minor may not be taken pass/nonpass.

Transfer Students
Transfer students with a declared interest in journalism are classified as premajors. They may apply for major status during the semester in which they will have completed at least 45 semester hours of course work at The University of Iowa and other institutions, including their rhetoric requirement and the two premajor courses-019:090 Social Scientific Foundations of Communication and 019:091 Cultural and Historical Foundations of Communication. Neither of these required premajor courses may be waived on the basis of work taken at other institutions; thus, transfer students are premajors for at least one semester.

The school’s policy is to accept journalism transfer credits from other institutions for up to, but not more than, 20 percent (6-8 semester hours for majors or 3 for minors) of the total number of journalism and mass communication semester hours Iowa requires. Some journalism course work taken elsewhere may be applicable toward fulfilling elective and/or second area of concentration requirements. Any transfer credit intended to meet School of Journalism and Mass Communication requirements must be discussed with a journalism faculty adviser and approved by the head of undergraduate studies after the student is admitted to the school.

Graduate Programs
Master of Arts
The School of Journalism and Mass Communication offers a Master of Arts program with two separate emphases: professional journalism and mass communication. Applicants should indicate the emphasis for which they seek admission.

Each emphasis requires 30 semester hours of approved course work and successful completion of a master’s project or thesis. The specific requirements of each emphasis are listed below.

Professional Program in Journalism
This program is designed for individuals who already have acquired basic journalistic skills and who seek to enhance their careers through specialized knowledge in a selected interest area. Each student creates an individualized focus area through courses chosen from inside and outside the school. Some examples include law, politics, business, medicine, science, the environment, urban planning, the arts, and issues of race and gender.

Building on conceptual and advanced skills course work, students complete their programs with a master’s project of a professional nature, such as in-depth reporting, design, documentary photography, or applied research on a mass media topic.

Students admitted to the program ordinarily have a background in some area of mass communication. This background may be obtained through professional experience, typically a minimum of one year, or through academic course work. A limited number of exceptional applicants without these qualifications may be accepted on the condition that they complete specified preparatory course work. All applicants must provide a general description of the focus area they intend to develop.

The following courses are required.

019:225 Contemporary Problems in Journalism 3 s.h.

Two of these:

019:226 Master’s Advanced Reporting and Writing 3 s.h.
019:227 Master’s Journalism Workshop 3 s.h.
019:228 Master’s Journalism Laboratory 3 s.h.

*Conceptual courses in the school

**Focus area outside journalism and mass communication

Elective (from inside or outside of the school) 3 s.h.
019:299 Master’s Research (project) 3 s.h.

*Students who have not taken a media law course must enroll in 019:149 Legal and Ethical Issues in Communication as one of their conceptual courses. With the adviser’s approval, a graduate-level law course may be used to meet this requirement.

**The focus area must be identified as part of the admission process. Specific graduate-level courses depend on availability and student interest and are chosen in consultation with an academic adviser. Focus area courses may be taken on a satisfactory/unsatisfactory basis.

Mass Communication Emphasis
This program offers a specialization in the study of mass communication phenomena and emphasizes theory and methodology. It prepares students for doctoral studies under two basic options: successfully defending a thesis before a faculty committee, or passing a final examination administered by a faculty committee at the conclusion of the course work. Students may apply only for admission to the thesis option. The nonthesis option is available only upon the recommendation of the student’s adviser.

Given the interdisciplinary nature of the field, students are expected to take course work outside the school. The nature and extent of this work is determined by students in consultation with their advisers. The course work should prepare students both theoretically and methodologically for either the final written examination or the completion of the thesis.

Students in the program may petition the school’s graduate admissions committee for admission to the Ph.D. program after successfully completing at least 18 semester hours of their M.A. work.

The following courses are required.

019:220 Master’s Seminar (two semesters) 0 s.h.
019:221 Approaches to the Study of Communication: Issues and Concepts (examination option) 3 s.h.

Two of these methods courses:

019:260 Communication Research: Historical Approaches 3 s.h.
019:261 Communication Research: Behavioral Approaches 3 s.h.
019:262 Communication Research: Phenomenological Approaches 3 s.h.
019:263 Communication Research: Legal Approaches 3 s.h.

Electives (maximum of 9 s.h. from courses outside the school) 18 s.h.
019:299 Master’s Research (thesis option) or an additional elective (examination option) 4 s.h.

Doctor of Philosophy
The Ph.D. program emphasizes interdisciplinary inquiry into mass communication phenomena from cultural and historical perspectives. The program’s substantive nature is defined by the scholarly interests of its faculty, which include investigations of historical, legal, economic, cultural, and social and cross-cultural aspects of communication, both verbal and visual.

The Ph.D. program is highly individualized. Drawing on the School of Journalism and Mass Communication as well as other academic units, each student develops a specific course of study that reflects his or her academic background, experience, professional goals, and intellectual preferences. Applicants should be interested in the opportunity to join a small group of students working to understand mass communication in cultural contexts. A more complete description of the graduate program is available from the School of Journalism and Mass Communication in the Graduate Studies Handbook.

Facilities
The School of Journalism and Mass Communication has special laboratories for photography, typography, audio, video, electronic newswriting, desktop, and web publishing. Many students work on the staff of
the University's award-winning student newspaper, The Daily Iowan. The school has its own resource center and houses offices of the Iowa High School Press Association and the Quill and Scroll Society, an international honor society for high school journalists.

Iowa Center for Communication Study

The center encourages and facilitates student and faculty research in the field of communication. It also sponsors publications and oversees editing of two periodicals, the Journal of Communication Inquiry and The Iowan Guide: Scholarly Journals in Mass Communication and Related Fields.

Financial Aid

More than $110,000 in scholarships is disbursed to undergraduate and graduate journalism majors each year. Information and applications for journalism scholarships are available from the school each fall. Research and teaching assistantships are available for graduate students, with preference given to doctoral students. The school also has a program of modest financial support for student research projects.

Professional Enrichment

The school's internship and placement coordinator helps students who wish to take advantage of learning opportunities outside the classroom. Internships in journalism and public relations are available. Students may register for credit for internships with appropriate faculty sponsorship, under the course 019:099 Journalism Internship and/or for non-credit internships through 019:000 Journalism and Mass Communication Cooperative Education Internship. In addition to internships, student-operated media—including The Daily Iowan and KRUI-FM radio—provide opportunities for journalism experience. The school cooperates with the University’s Career Development Services office.

Job Placement

The school's internship and placement coordinator helps students seeking career guidance and employment opportunities. The school posts notices of professional jobs open to journalism students and graduates. It cooperates with the University’s Career Development Services office and the Business and Liberal Arts Placement Office in providing career guidance and placement services as well as workshops and programs on job-seeking skills.

Special Activities

The school engages in a variety of activities for the enrichment of students, faculty, and the entire campus. Many speakers visit campus each year under lectureships funded by the John F. Murray and Leslie G. Moeller Fund and as part of an extensive professional-in-residence 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), and the Society of Professional Journalists (SPJ).

Courses

Primarily for Undergraduates

All courses listed as 100-level or higher require junior standing, major status, or consent of instructor.

019:000 Journalism and Mass Communication Cooperative Education Internship 0 s.h.
Internships administered by the Cooperative Education Program, filled on competitive basis. Consent of instructor required. For graduate students, consent of journalism graduate adviser required. Prerequisite: 12 semester hours of journalism and mass communication courses.

019:029 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). Open only to first-and second-semester students.

019:035 Introduction to Media Production 4 s.h.
Project-oriented, with production experience; emphasis on formalist principles and effectiveness of communication; equipment and training provided; for students with no previous experience. Same as JED:035, 048:035.

019:090 Social Scientific Foundations of Communication 3 s.h.
Introduction to mass communication theory as it relates to practical applications in the media industry and American society. GE: social sciences.

019:091 Cultural and Historical Foundations of Communication 3 s.h.
Historical development of mass communication in the United States; cultural, historical content. GE: historical perspectives.

019:095 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.

019:099 Journalism Internship 1-5 s.h.
Faculty supervised professional work experience in journalism and mass communication. Open only to journalism majors. Consent of instructor required. Prerequisite: 019:115.

019:101 Methods: Secondary School Journalism 3 s.h.
Methods and materials for teaching high school journalism; publication policies, staff organization, production schedules, techniques for advising student publications, lesson plans and units. Offered fall semester. Same as 07S:113.

019:102 Workshop for Secondary School Journalism/Communication Teachers 1-2 s.h.
Workshops on journalism/mass media curriculum, audio/video production, photojournalism, publication design, journalistic writing techniques, advising student publications. Same as 07S:130.

019:115 Journalistic Reporting and Writing 4 s.h.
Fundamentals of journalistic reporting and writing: sophistication in news writing, basic to complex; emphasis on reporting techniques, enterprise, beat coverage.

019:120 Specialized Reporting and Writing 4 s.h.
Representative topics: public affairs, law, science, business, medicine, intercultural affairs, education, lifestyles, computer-assisted reporting. May be repeated. Prerequisite: 019:115 or consent of instructor.

019:121 Depth Reporting and Writing 4 s.h.
Enterprise reporting, emphasis on reporter as researcher, organizer, writer of complex stories in a variety of contexts. Prerequisite: 019:115 or consent of instructor.

019:122 Magazine Reporting and Writing 4 s.h.
Finding ideas, researching, interviewing: problems of organization and style; identification of audiences and markets. Prerequisite: 019:115 or consent of instructor.

019:123 Broadcast Journalism Reporting and Writing 4 s.h.
Principles, gathering, writing, editing, reporting the news; techniques and concepts as a foundation for understanding, successfully writing, and delivering broadcast news. Prerequisite: 019:115 or consent of instructor.

019:124 Persuasive Writing 4 s.h.
Principles and practices of persuasive writing in editorials, op-ed pieces, magazine essays, reviews, public relations. Prerequisite: 019:115 or consent of instructor.

019:125 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 revising articles for publication. Prerequisite: 019:115 or consent of instructor. Same as 08N:125.

019:130 Media Workshop 4 s.h.
Analysis and solution of problems with communication strategies and/or media products; public relations, newsletter production, media research. May be repeated. Prerequisite: 019:115 or consent of instructor.

019:131 Publication Design Workshop 4 s.h.
Problems of design, layout and production; practical and aesthetic considerations; digital, creative projects. Prerequisite: 019:115 or consent of instructor.

019:132 Photojournalism Workshop 4 s.h.
Techniques; basic craft, location shooting, editing photographs; group critiques of assignments. Consent of instructor required.

019:133 Typography Workshop 4 s.h.
Fonts and their use in design; letterform terminology; special typographical practices; digital techniques, creative projects. Prerequisite: 019:115 or consent of instructor.

019:134 Broadcast Journalism Workshop 4 s.h.
Electronic news gathering (ENG); conceptualization, shooting, editing basic news packages. Prerequisite: 019:115 or consent of instructor.

019:135 Public Relations Practice Workshop 4 s.h.
Development and presentation of public relations campaigns for client organization; communication theory and research techniques applied to analyzing and solving public relations problems through objectives-based strategic planning. Prerequisite: 019:115 or consent of instructor.

019:136 Editing Workshop 4 s.h.
Theory, principles, process in editing and packaging material for various forms of publication; basics of editing-copy editing, headlines, illustration, layout; pencil and computer editing; pagination. Prerequisite: 019:115 or consent of instructor.

019:137 Book Design Workshop 4 s.h.
Specialized problems and practices of book design; digital typesetting and layout technology; creative projects. Prerequisite: 019:115 or consent of instructor.

019:149 Legal and Ethical Issues in 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.

019:150 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.

019:151 Communication Research Methods 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.

019:152 History of Mass Communication in the U.S. 3 s.h.
Development in context of U.S. history.

019:153 Popular Culture and Mass Communication 3 s.h.
Relationships between popular media fare and cultural realities; media formulas and communication practices in American culture.
Primarily for Graduate Students

019:200 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.

019:201 Communication Research Methods 3 s.h.
Fundamentals of scientific inquiry in study of communication and mass communication behavior; language, concepts, procedures, application of behavioral research methods; field and experimental approaches.

019:202 History of Mass Communication in the U.S. 3 s.h.
Development in context of U.S. history.

019:203 Popular Culture and Mass Communication 3 s.h.
Relationships between popular media fare and cultural realities; media formulas, communication practices in American culture.

019:240 Economic and Technological Issues in Media 3 s.h.
Economic condition of American mass media; relationship between technology and economics, impact on media content; current issues in U.S. communication policy; newspapers, television, radio, cable television, telecommunications.

019:245 Public Relations Practice Workshop 3 s.h.
Teaching and practice of public relations; social and organizational roles of public relations, opportunities, problems and solutions.

019:246 Comparative Communication Systems 3 s.h.
Culture and communication as central to examining media in different social and political settings; emphasis on contemporary problems.

019:247 Typography Workshop 3 s.h.
Conceptual, theoretical approaches for analyzing visual communication; visual form, composition, spatial representation, color, and other topics; in-depth study of selected artists, designers, publishers; books and other printed mass communications media.

019:251 History of Typography 3 s.h.
History and development of printing and its social and cultural impact in the West; case studies of selected printers, designers, publishers; books and other printed mass communications media.

019:252 Magazine Reporting and Writing 3 s.h.
Finding ideas, researching, engaging; problems of organization and style; identification of audiences, markets.

019:255 Media and Society 3 s.h.
Role of mass media in society; audience characteristics of mass media, effects of mass media on audiences; relationship to public opinion, crime and violence, political affairs, racism, sexism.

019:256 Comparative Communication Systems 3 s.h.
Relationship between political campaigns and mass media; critical evaluation of nature, role, function of media political communication.

019:257 Third World Development Support 3 s.h.
The role of the Third World in development of international communication; economic condition of these regions; problems and solutions.

019:258 Media Workshop 3 s.h.
Research and readings to fit needs, interests of students. May be repeated.

019:259 Specialized Reporting and Writing 3 s.h.
Representative topics; public affairs, law, science, business, medicine, intercultural affairs, education, lifestyles, computer-assisted reporting. May be repeated.

019:260 Communication and Public Relations 3 s.h.
Theory and practice of public relations; social and organizational roles of public relations, opportunities, problems and solutions.

019:261 Law and the American Media 3 s.h.
First Amendment theory, current topics in communication law. Prerequisite: 019:149 or consent of instructor.

019:262 Communication and Public Relations 3 s.h.
Theory and practice of public relations; social and organizational roles of public relations, opportunities, problems and solutions.

019:263 History of Books and Printing 3 s.h.
Invention and development of printing and its social and cultural impact in the West; case studies of selected printers, designers, publishers; books and other printed mass communications media.

019:264 Images and Society 3 s.h.
Treatment and uses of photography, film, and television as technologies of reproduction in contemporary American or western culture.

019:265 African Americans and Mass Communication 3 s.h.
African American experience in music, radio, television, film, print media; mediated messages about African American culture; images in contemporary media development, practice in the United States. GE: cultural diversity.

019:266 Gender and Mass Media 3 s.h.
Representation of women and men in mass media; gender and the communications work force; media for women; women’s use of media, feminist theory; race, class, ethnicity, sexual orientation.

019:267 Topics in Mass Communication 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. May be repeated.

019:270 Communication and Public Relations 3 s.h.
Theory and practice of public relations; social and organizational roles of public relations, opportunities, problems and solutions.

019:271 History of Books and Printing 3 s.h.
Invention and development of printing and its social and cultural impact in the West; case studies of selected printers, designers, publishers; books and other printed mass communications media.

019:272 Broadcast Journalism Reporting and Writing 3 s.h.
Television and radio, cable television, telecommunications, media research. May be repeated.

019:273 Master’s Journalism Workshop 3 s.h.
Advanced work in the student’s visual or broadcast area of interest. May be repeated. Consent of instructor required.

019:274 Master’s Journalism Workshop 3 s.h.
Advanced writing; topics from student’s focus area, approaches, or techniques of inquiry. May be repeated. Consent of instructor required.

019:275 Contemporary Problems in Journalism 3 s.h.
Current journalism issues; emphasis on press performance and problems confronting journalism. Appropriate critical, professional, scholarly literature.

019:276 Master’s Advanced Reporting and Writing 3 s.h.
Reporting and writing stories developed from focus area; development of a file of story ideas, sources, potential publishing outlets, and a resource file of coverage and criticism.

019:277 Master’s Journalism Workshop 3 s.h.
Advanced work in the student’s visual or broadcast area of interest. May be repeated. Consent of instructor required.

019:278 Master’s Journalism Workshop 3 s.h.
Advanced writing; topics from student’s focus area, approaches, or techniques of inquiry. May be repeated. Consent of instructor required.

019:279 Specialized Reporting and Writing 3 s.h.
Representative topics; public affairs, law, science, business, medicine, intercultural affairs, education, lifestyles, computer-assisted reporting. May be repeated.

019:280 Communication and Public Relations 3 s.h.
Theory and practice of public relations; social and organizational roles of public relations, opportunities, problems and solutions.

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Theory and practice of public relations; social and organizational roles of public relations, opportunities, problems and solutions.

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Theory and practice of public relations; social and organizational roles of public relations, opportunities, problems and solutions.

019:296 Communication and Public Relations 3 s.h.
Current journalism issues; emphasis on press performance and problems confronting journalism. Appropriate critical, professional, scholarly literature.

019:297 Communication and Public Relations 3 s.h.
Reporting and writing stories developed from focus area; development of a file of story ideas, sources, potential publishing outlets, and a resource file of coverage and criticism.

019:298 Communication and Public Relations 3 s.h.
Advanced work in the student’s visual or broadcast area of interest. May be repeated. Consent of instructor required.

019:299 Communication and Public Relations 3 s.h.
Advanced writing; topics from student’s focus area, approaches, or techniques of inquiry. May be repeated. Consent of instructor required.

019:300 Communication and Public Relations 3 s.h.
Representative topics; public affairs, law, science, business, medicine, intercultural affairs, education, lifestyles, computer-assisted reporting. May be repeated.

019:301 Communication and Public Relations 3 s.h.
Current journalism issues; emphasis on press performance and problems confronting journalism. Appropriate critical, professional, scholarly literature.

019:302 Communication and Public Relations 3 s.h.
Reporting and writing stories developed from focus area; development of a file of story ideas, sources, potential publishing outlets, and a resource file of coverage and criticism.

019:303 Communication and Public Relations 3 s.h.
Advanced work in the student’s visual or broadcast area of interest. May be repeated. Consent of instructor required.

019:304 Communication and Public Relations 3 s.h.
Advanced writing; topics from student’s focus area, approaches, or techniques of inquiry. May be repeated. Consent of instructor required.

019:305 Communication and Public Relations 3 s.h.
Representative topics; public affairs, law, science, business, medicine, intercultural affairs, education, lifestyles, computer-assisted reporting. May be repeated.

019:306 Communication and Public Relations 3 s.h.
Current journalism issues; emphasis on press performance and problems confronting journalism. Appropriate critical, professional, scholarly literature.

019:307 Communication and Public Relations 3 s.h.
Reporting and writing stories developed from focus area; development of a file of story ideas, sources, potential publishing outlets, and a resource file of coverage and criticism.

019:308 Communication and Public Relations 3 s.h.
Advanced work in the student’s visual or broadcast area of interest. May be repeated. Consent of instructor required.

019:309 Communication and Public Relations 3 s.h.
Advanced writing; topics from student’s focus area, approaches, or techniques of inquiry. May be repeated. Consent of instructor required.
019:252 Social Meanings of News 3 s.h.
How concept of news and news work has been studied in occupational, organizational, social contexts.

019:253 Economics, Technology, and American Mass Media 3 s.h.
Economic condition of American mass media; role in society; focus on how economics and technology affect that role; newspapers, radio, television, cable television, telecommunications.

019:254 Communication and Change 3 s.h.
Theory, research, methodological problems of studying change: diffusion of innovations, media and change, reform organizations, revolutionary and evolutionary organizations.

019:255 Problems in International Communication 3 s.h.
Representative topics: communication systems in national development; international and cross-cultural communication structure and theory; human rights; images, values; mass persuasion; laws, agreements; information channels, content flow, effects; censorship, language, literacy.

019:256 Gender and Mass Communication 3 s.h.
Feminist analysis of gender and language; images of women and men in mass media; employment of women and minorities by media; media created for women and men; feminist media theory; race, class, ethnicity, sexual orientation.

019:257 Communication and Social Theory 3 s.h.
Social theorists who emphasize communication processes in their analyses of social interaction, society.

019:259 Theory of Popular Culture 3 s.h.
Major theoretical notions about popular culture and its interaction with the mass media.

019:260 Communication Research: Historical Approaches 3 s.h.
Planning, conducting, reporting of historical inquiry; attention to interpretive frameworks for historical research.

019:261 Communication Research: Behavioral Approaches 3 s.h.
Planning, conducting, analyzing, interpreting surveys, content analyses, experiments.

019:262 Communication Research: Phenomenological Approaches 3 s.h.
How people construct and carry out communication; symbolic interactionism, ethnography, ethnomethodology; participant observation, ethnographic interviewing, and field observation as methods for studying how people interpret and construct their worlds.

019:263 Communication Research: Legal Approaches 3 s.h.
Legal research methods and materials for studying communications law.

019:265 Approaches to Teaching 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.

019:275 Contemporary Problems in Law and Journalism Interdisciplinary approach; impact of new technologies on journalism, its treatment in law. Same as 091:613.

019:279 Mass Communication Seminar Readings, research.

019:280 Master’s Tutorial arr.
Topics in communication and mass communication inquiry. Consent of instructor required.

019:281 Master’s Practicum arr.
Research, readings, projects to fit needs, interests of students. Consent of instructor required.

019:299 Master’s Research arr.
Independent research for projects, theses. Consent of sponsoring faculty member, director of graduate studies, and instructor required.

019:320 Ph.D. Seminar 1 s.h.
Forum on theoretical or methodological problems in mass communication. Consent of instructor required.

019:341 Mass Communication and Cultural Theory 3 s.h.
Basic theoretical approaches to mass communication; emphasis on role of cultural traditions in shaping mass media; attention to contemporary British, and continental scholarship.

019:348 Ph.D. Tutorial arr.
Communication and mass communication inquiry. Consent of instructor required.

019:381 Ph.D. Research Practicum arr.
Conceptualization and execution of research projects. Consent of instructor required.

019:399 Dissertation arr.

LATIN
See “Classics.”

LATIN AMERICAN STUDIES

Director: Daniel Balderston (Spanish and Portuguese)
Affiliated faculty: Florence Balbo (Anthropology/Women’s Studies), Daniel Balderston (Spanish and Portuguese), Maria Jose Barbosa (Spanish and Portuguese), Michael Chimbik (Anthropology), Rudi Collordey-Mansfeld (Anthropology), Marta Duarte (Spanish and Portuguese), Laura Graham (Anthropology), Ted Mutersbaugh (Geography), Kathleen Newman (Spanish and Portuguese), Mercedes Nino-Murcia (Spanish and Portuguese), Rita Noonan (Sociology), T.M. Scragg (Music)

Undergraduate: Bachelor of Arts in Latin American Studies

At least 6 semester hours in each of two or more of the following departments: anthropology, history, political science, Spanish and Portuguese
Four semesters (or equivalent) of Spanish or Portuguese language course work

LASP-approved courses that apply toward the student’s major also may be applied toward the LASP certificate.

Courses applied toward the LASP certificate also may be used to complete the General Education Program or the requirements for a major or a minor. The certificate is awarded only upon completion of a bachelor’s degree. Holders of Iowa baccalaureate degrees may return to complete the requirements for a certificate. A student may not be awarded both a minor and a certificate in Latin American studies.

Minor

To earn a minor in Latin American studies, students complete 15 semester hours in courses selected from the list of LASP-approved courses, with a grade-point average of at least 2.00. To preserve the interdisciplinary character of the Latin American studies minor, students majoring in anthropology, history, political science, or Spanish and Portuguese may not count more than 6 semester hours from courses in their major department toward the minor. At least 12 of the 15 semester hours must be taken in advanced courses (100-level or above) at The University of Iowa. Students are strongly encouraged to take either or both of the following.

130:020 Contemporary Latin American News Colloquium 3 s.h.
130:176 Latin American Studies Seminar 3 s.h.

Study Abroad

It is highly recommended, though not required, that students have an in-depth Latin American cultural experience, usually through a study abroad program, before completing their undergraduate requirements.

In cooperation with the Office for Study Abroad, LASP faculty facilitate student participation in programs in many different Latin American countries. Such programs range from intensive language study to group programs with a special focus. University of Iowa-sponsored study abroad programs include a summer program with Universidad de Guanajuato in Mexico and a health and nutrition program in Pontificia Universidad Catolica Madre y Maestra in the Dominican Republic.

University of Iowa students may enroll in programs in Argentina, Brazil, Chile, Colombia, Costa Rica, Cuba, the Dominican Republic, Honduras, Mexico, and Uruguay. The University of Iowa co-sponsors these programs through various consortiums.

Courses taken through study abroad programs may be counted toward requirements for the certificate and the minor, subject to prior approval by the LASP director.
In addition to the courses listed below, courses sometimes may be used as electives to satisfy requirements for the certificate or the minor. Students should consult the LASP Catalog for the requirements for the certificate or the minor. Recommended for certificate students, recommended for minors.

**Latin American Studies**
- 130:020 Contemporary Latin American News Colloquium (required for certificate students, recommended for minors) 3 s.h.
- 130:105 Independent Study arr.
- 130:115 Topics in Latin American Studies arr.
- 130:176 Latin American Studies Seminar (required for certificate students, recommended for minors) 3 s.h.

**Anthropology**
- 113:114 Amazonian Indians 3 s.h.
- 113:117 The Maya 3 s.h.
- 113:118 Social Anthropology of the Caribbean 3 s.h.
- 113:130 Latin America: Cultural Politics 3 s.h.
- 113:131 Latin American Economy and Society 3 s.h.
- 113:151 Sociology of the Third World 3 s.h.
- 113:163 Archaeology of Mesoamerica 3 s.h.
- 113:166 The Aztecs. Their Predecessors, and Their Contemporaries 3 s.h.
- 113:191 Structure of Mayan Languages 3 s.h.

**Art**
- 01H:105 Art of Pre-Columbian America 3 s.h.

**History**
- 16W:110 Topics in Latin American History 3 s.h.
- 16W:117 Colonial Latin America 3 s.h.
- 16W:112 Introduction to Modern Latin America 3 s.h.
- 16W:113 The Mexican Revolution 3 s.h.
- 16W:114 Latin America and the U.S.: The Historical Perspective 3 s.h.
- 16W:116 Women in Latin America 3 s.h.
- 16W:117 History of Brazil 3 s.h.

**Music**
- 025:104 Music of Latin America and the Caribbean 3 s.h.
- 025:163 Steel Band 1 s.h.

**Political Science**
- 030:144 Latin American Government 3 s.h.

**Portuguese**
- 038:105 Brazilian Literature I 3 s.h.
- 038:106 Brazilian Literature II 3 s.h.
- 038:112 Topics in Luso-Brazilian Literature 3 s.h.
- 038:114 Culture and Civilization of the Portuguese-Speaking World 3 s.h.

**Spanish**
- 035:118 Business Spanish 3 s.h.
- 035:119 Introduction to Bilingualism 3 s.h.
- 035:123 Screenings Latin America 3 s.h.
- 035:125 Readings in Spanish American Literature and Culture 3 s.h.
- 035:130 Spanish American Civilization 3 s.h.
- 035:131 Contemporary Spanish American Fiction 3 s.h.
- 035:132 Spanish American Poetry I 3 s.h.
- 035:133 Spanish American Theater 3 s.h.
- 035:134 Spanish American Short Story 3 s.h.
- 035:136 Culture and Language in the Andes 3 s.h.
- 035:138 Survey of Twentieth-Century Puerto Rican Literature 3 s.h.
- 035:139 Spanish American Poetry II 3 s.h.
- 035:145 Latin America Cinema 3 s.h.
- 035:162 Latin American Women Writers 3 s.h.
- 035:169 Spanish American Literature of Fantasy 3 s.h.
- 035:175 Cultural Identity in Caribbean Literature 3 s.h.
- 035:187 Spanish American Dialectology 3 s.h.
- 035:191 (36F:191) Topics in Latin American Cinema 3 s.h.

**Other**
- 16W:051 Colloquium for History Majors (when topic is Latin American) 3 s.h.
- 035:020 Contemporary Spanish American Narrative (may not be used toward certificate) 3 s.h.
- 035:148 Topics In Cinema, Literature, and Society (when topic is Latin American) 3 s.h.
- 035:178 Topics in Hispanic Linguistics (when topic is Latin American) 3 s.h.
- 36C:093 Intercultural Communication (final paper must focus on Latin America) 3 s.h.
- 36F:111 Cinema and Culture (when topic is Latin American) 3 s.h.
- 038:020 Contemporary Brazilian Narrative (may not be used toward certificate) 3 s.h.
- 047:100 Problems in Global Studies (final paper must focus on Latin America) 3 s.h.
- 113:109 Literature and Anthropology (when topic is Latin American) 3 s.h.

### Financial Aid
Students are encouraged to apply for a Stanley Undergraduate Scholarship for International Research/Fieldwork through University of Iowa International Programs. The scholarships are awarded 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 scholarship with other awards and financial assistance. For information regarding other scholarships, contact LASP advisers, International Programs staff, and the LASP director.

### Visitors, 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 have included an international conference on Jorge Luis Borges; speakers on Cuban theater and painting, and on Guatemalan and Andean culture and language; a residency by a Mexican woman writer; and an exhibit of political art from Latin America in the 1960s and 1970s.

### Courses
- 130:020 Contemporary Latin American News Colloquium 3 s.h.
- 130:105 Independent Study arr.
- 130:115 Topics in Latin American Studies arr.
- 130:176 Latin American Studies Seminar 3 s.h.
- 16W:051 Colloquium for History Majors (when topic is Latin American) 3 s.h.
- 035:020 Contemporary Spanish American Narrative (may not be used toward certificate) 3 s.h.
- 035:148 Topics in Cinema, Literature, and Society (when topic is Latin American) 3 s.h.
- 035:178 Topics in Hispanic Linguistics (when topic is Latin American) 3 s.h.
- 36C:093 Intercultural Communication (final paper must focus on Latin America) 3 s.h.
- 36F:111 Cinema and Culture (when topic is Latin American) 3 s.h.
- 038:020 Contemporary Brazilian Narrative (may not be used toward certificate) 3 s.h.
- 047:100 Problems in Global Studies (final paper must focus on Latin America) 3 s.h.
- 113:109 Literature and Anthropology (when topic is Latin American) 3 s.h.

**LIBERAL STUDIES**
Coordinator: Wayne Prophet
Undergraduate degree: B.L.S.
Web site: http://www.uiowa.edu/-ccp/bls/ blstxt.html

### Bachelor of liberal Studies
The Bachelor of Liberal Studies (B.L.S.) program is offered by each of Iowa’s three Board of Regents universities (The University of Iowa, Iowa State University, and The University of Northern Iowa) to serve adults whose job, family, geographic location, or other personal circumstances prevent them from attending college as full-time, on-campus students. The B.L.S. program has no residence requirement. Students may complete the degree without attending a course on campus. Credit applicable toward the degree may be earned through several types of courses, including Saturday and evening courses, correspondence courses, extension courses at sites throughout Iowa, televised courses, and regular session courses. Courses from any of the three Regents universities may be applied toward the degree, as may appropriate courses from other accredited Institutions.

At The University of Iowa, the B.L.S. is awarded by the College of Liberal Arts and administered by the Division of Continuing Education. Since the B.L.S. is a general undergraduate degree with no traditional major, B.L.S. students may not earn minors. However, the requirements are sufficiently flexible to allow students, with the assistance of a B.L.S. adviser, to construct a program that meets their individual needs and objectives. Many B.L.S. candidates plan programs designed to help them advance in their chosen career, begin a new career, 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
Admission

Students who want to graduate with a B.L.S. degree must make a formal application for admission to the program. Interested students should consult a B.L.S. adviser before applying. All applications to the program are screened. Students who have access to the full range of the University’s daytime classes should seek admission to the College of Liberal Arts in order to pursue a major leading to a degree other than the B.L.S. Non-B.L.S. students interested in tailoring a degree program to their individual interests should consider pursuing a B.A. degree in interdepartmental studies (see “Interdepartmental Studies” in this section of the Catalog).

To be eligible for admission to the B.L.S. program, students must have earned either:

- an Associate in Arts (A.A.) degree from an Iowa area community college that participates in the Iowa Community College/Regents Articulation Agreement, with a grade-point average of 2.00 or higher;
- or
- at least 62 semester hours of collegiate work acceptable for credit toward graduation, with a grade-point average of 2.25 or higher.

Students admitted to The University of Iowa must have a grade-point average of at least 2.00 to qualify for admission to the B.L.S. program.

Courses

BLS 000 Cooperative Education Internship 0 s.h.

LIBRARY AND INFORMATION SCIENCE

Faculty members and students in the College of Liberal Arts participate in the School of Library and Information Science. For information about the school, see the Graduate College section of the Catalog.

LINGUISTICS

Chair: William D. Davies

Professors: William D. Davies, Nora C. England, Catherine O. Ringen, Jerry Rubach

Professor emeritus: Robert S. Wachal

Associate professors: Christopher Culy, Alice L. Davison

Assistant professors: Jill Beckman, Elena Gavruseva, Roumyana Slabakova

Undergraduate degree: B.A. in Linguistics

Undergraduate nondegree program: minor in linguistics

Graduate degrees: M.A., Ph.D. in Linguistics

Web site: http://www.uiowa.edu/linguist

Linguistics is the scientific study of human languages-highly complex systems, made up of subsystems. In turn, each subsystem has its own units and patterns of combination, including word structure (morphology), speech sounds (phonetics) and their patterns of combination and contrast (phonology), sentence structure (syntax), and meaning relations (semantics).

Linguists study subsystems of well-known and familiar languages, such as English, Spanish, Russian, and Chinese. They also study the subsystems of less-well-studied 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 linked with anthropology and other social sciences in studying the relation of language use to culture, region, class, and gender. It 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. Linguists and computer scientists are discovering ways of identifying and representing sentence structures as part of knowledge and reasoning processes. Linguistics has important ties with instruction in foreign languages and in English as a second language. 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 English as a second language 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.

Undergraduate Program

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. Depending on their vocational goals, prospective linguistics students should consider pursuing their studies either through the M.A. in linguistics with a professional focus or through the doctorate; or they should take a second major. Appropriate companion fields include foreign languages, English, anthropology, sociology, speech pathology, psychology, mathematics, computer science, philosophy, and elementary and secondary education.

Bachelor of Arts

The B.A. 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 24 semester hours of course work, as follows.

103:100 Introduction to Linguistics 3 s.h.
103:110 Articulatory and Acoustic Phonetics 3 s.h.
103:111 Syntactic Analysis 3 s.h.
103:112 Phonological Analysis 3 s.h.
A course in language history (e.g., 103:131 or 103:139) or a course in an old language (classical Greek, Latin, Old English, Sanskrit)

Electives (chosen in consultation with undergraduate adviser)

No fewer than 15 semester hours of the major, including 103:110, 103:111, and 103:112, must be completed at The University of Iowa.

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: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: Introduction to Linguistics (103:100) and at least one-half of the semester hours required for graduation

Before the seventh semester begins: two more courses in the major and at least three-quarters of the semester hours required for graduation

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

Members of the University Honors Program may graduate with honors in linguistics by completing the major course work plus an honors thesis, which must be prepared in consultation with the student’s academic adviser. Honors students must maintain a grade-point average of at least 3.20.

Minor

The undergraduate minor in linguistics requires 15 semester hours of linguistics courses, at least 12 of which must be taken at The University of Iowa in advanced courses (courses numbered 103:100 and above), including 103:100, 103:110, 103:111, and 103:112. Course work toward the minor may not be taken pass/nonpass.

Graduate Programs

The graduate programs emphasize theory and research. Students interested in nonuniversity 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.

Master of Arts

All students take a required set of core courses and comprehensive examinations in phonology and syntax. The required core courses are as follows.

103:110 Articulatory and Acoustic Phonetics 3 s.h.
103:120 Historical and Comparative Linguistics 3 s.h.
103:201 Introduction to Syntax 3 s.h.
103:202 Syntactic Theory 3 s.h.
103:203 Introduction to Phonology 3 s.h.
103:204 Phonological Theory 3 s.h.

One of these:
103:113 Linguistic Field Methods 3 s.h.
103:210 Linguistic Structures 3 s.h.
103:217 Language Universals and Linguistic Typology 3 s.h.

Students who write a thesis take at least 9 semester hours of elective courses, exclusive of thesis hours, and receive up to 6 semester hours of thesis credit.

Students who take a degree without thesis complete a focus area consisting of 12 semester hours of course work plus at least 3 semester hours of elective courses. The focus may be designed in advance by the student (subject to department approval) or may be one of a set of predesigned options (e.g., teaching English as a second language).

All electives must be approved by the student’s adviser or chosen from a department list. Students who write a thesis should take at least 30 semester hours of course work; those who choose the nonthonthesis option must take at least 36 semester hours. All students must have a minimum of 30 semester hours of graduate credit to receive the degree, regardless of prior preparation.

Doctor of Philosophy

The highly selective Ph.D. 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 core is as follows (total of 18 semester hours).

Two upper-level syntax courses numbered 103:212 or above
Two upper-level phonology courses numbered 103:214 or above

At least two seminars

An approved specialty area of 18 semester hours also is required, and students must achieve proficiency in a foreign language, as specified by department regulations.

Comprehensive examinations cover phonological theory or syntactic theory and one other area of linguistics. An oral defense of the dissertation and three years of residence also are required. In addition, all candidates are required to gain supervised experience in teaching and research.

Admission

To be considered for admission to the graduate program in linguistics, prospective students 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 also must submit TOEFL scores. Applications for admission should be submitted as early as possible for the following academic year.

Financial Support

Fellowships, teaching assistantships, and research assistantships are available to qualified graduate students. Applications are due no later than March 15; earlier submission is strongly encouraged.

University of Iowa Fellowships are available for exceptionally well-qualified applicants. Those interested in being nominated for a University of Iowa Fellowship should submit all application materials by January 15.

Applications for all awards are considered only for students whose application for admission is complete.

African Language Instruction

Instruction in African languages, currently Swahili and Zulu, is provided by native-speaking teachers through the department. Elementary and intermediate Swahili are taught every year, while elementary and intermediate Zulu are taught alternate years. The classroom emphasis is on oral communication skills. Most instruction is in the African language. Language skills instruction is augmented by discussion of various aspects of the cultures.

Successful completion of one of these two-year sequences satisfies the College of Liberal Arts General Education Program requirement in foreign language. The sequences also satisfy requirements for certain undergraduate programs, for example, those in African American World Studies. Instruction in African languages other than Swahili and Zulu sometimes can be arranged.

English as a Second Language

ESL instruction is offered in three distinct, but related, programs: the ESL credit support courses, 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. The ESL credit support courses help students raise their English proficiency so they can complete a degree successfully. The IIEP provides intensive instruction for students who must raise their English proficiency to gain admission to a university or college. The TAPE program prepares students to teach in American classrooms.

ESL Credit Support Courses

These courses bridge the gap between full-time language instruction and full-time academic work, serving students whose TOEFL scores range from 530 to 599 on the paper-based test.
or 197 to 250 on the computer-based test. ESL courses are offered to increase proficiency in five skill areas: reading, writing, speaking, pronunciation, and grammar. Each course grants three semester hours of credit, which count toward graduation. Courses are taught by ESL professional staff members and by teaching assistants pursuing advanced degrees in linguistics.

Courses taken to meet the College of Liberal Arts English proficiency requirement may not be taken P/N, and all required ESL courses must be completed before registration in Rhetoric courses. Once enrolled, students may not drop ESL courses. ESL courses may not be taken S/U.

**Iowa Intensive English Program (IIEP)**

The IIEP primarily serves students on conditional admission and persons who have not yet been admitted to the University and whose TOEFL scores are below 530 on the paper-based test or 197 on the computer-based test. The program 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, pronunciation, and speaking are taught each day at all levels—beginning, intermediate, and advanced.

Each student receives 20 hours of classroom instruction each week, plus individual work in the language laboratory. Field trips and cultural and social experiences are an integral part of the program. Students enrolled in the IIEP have full access to all University facilities. The program welcomes international students preparing to enter universities and colleges as well as other adults who want to improve their English skills. Instruction is by full-time professional ESL instructors.

Students admitted to the IIEP receive a certificate of eligibility (Form I-201, which enables them to obtain a student visa at the nearest U.S. consulate. Application materials are available from the ESL Programs Office.

**Teaching Assistant Preparation in English (TAPE)**

The TAPE program is designed for graduate students whose first language is not English, who need additional work on English communication and classroom presentation techniques, and who will hold teaching assistantships while 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. Instruction is by full-time professional ESL instructors.

**Facilities**

The Department of Linguistics has relatively limited acoustics equipment consisting of a mobile computer equipped with sophisticated speech analysis software, a sound spectrograph, a studio-type tape recorder, and an audiometric chamber. 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**

**Primarily for Undergraduates**

103:000 Cooperative Education Internship 0 s.h.
103:011 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.
103:013 Language and Formal Reasoning 3 s.h. Natural language semantics and pragmatics; reasoning based on word meaning, sentence structure, truth conditional meaning, non-truth conditional meaning; argumentation and fallacies, logical and linguistic. GE: quantitative or formal reasoning.
103:015 Elementary Swahili I 4 s.h. Development of speaking, listening, reading, writing skills. GE: foreign language. Offered fall semesters. Same as 129:015, 141:015.
103:016 Elementary Swahili II 4 s.h. Continuation of 103:015. Offered spring semesters. GE: foreign language. Prerequisite: 103:015 or equivalent. Same as 129:016, 141:016.
103:017 Intermediate Swahili I 4 s.h. Offered fall semesters. GE: foreign language. Prerequisite: 103:016 or equivalent. Same as 129:017, 141:017.
103:018 Intermediate Swahili II 4 s.h. Continuation of 103:017. Offered spring semesters. GE: foreign language. Prerequisite: 103:017 or equivalent. Same as 129:018, 141:018.
103:025 Elementary Yoruba I 4 s.h. Development of speaking, listening, reading, writing skills. Offered fall semesters of even years. GE: foreign language. Same as 129:025, 141:025.
103:026 Elementary Yoruba II 4 s.h. Continuation of 103:025. Offered spring semesters. GE: foreign language. Prerequisite: 103:025 or equivalent. Same as 129:026, 141:026.
103:027 Intermediate Yoruba I 4 s.h. Continued skill development; review and expansion of grammar. Offered fall semesters of odd years. GE: foreign language. Prerequisite: 103:026 or equivalent. Same as 129:027, 141:027.
103:028 Intermediate Yoruba II 4 s.h. Continuation of 103:027. Offered spring semesters of even years. GE: foreign language. Prerequisite: 103:027 or equivalent. Same as 129:028, 141:028.
103:029 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). Open only to first- and second-semester students.
103:030 Language and Mind 3 s.h. Issues in language processing and language acquisition; recognition and gestural modalities of language; how language breaks down; universal and language-specific linguistic deficits and their correlation with neural structures.
103:031 Elementary Zulu I 4 s.h. Zulu language and culture through speaking, listening, reading, writing. Same as 129:031, 141:031.
103:032 Elementary Zulu II 4 s.h. Continuation of 103:031, which is prerequisite. Same as 129:032, 141:032.
103:033 Intermediate Zulu I 4 s.h. Continued skill development; review and expansion of basic grammar. Prerequisite: 103:032 or equivalent. Same as 129:033, 141:033.
103:034 Intermediate Zulu II 4 s.h. Continuation of 103:033, which is prerequisite. Same as 129:034, 141:034.
103:055 English Words 3 s.h. English word formation; basic units of English vocabulary; vocabulary skill expansion; word structure, history of English, language change, phonetics, phonology, sociolinguistics.
103:045 Language Rights 3 s.h. Language minorities and linguistic human rights in the United States and the world; language and identity, culture, power; case studies of language rights deprivation.
103:055 Languages of the World 3 s.h. Overview of the world's language families; modes of classification, such as geographical distribution, word order, sound system, make-up of words; current hypotheses of various languages' evolution.
103:095 Research Practicum arr. Individual participation in faculty research projects. Consent of instructor required.
103:098 Topics in Linguistics 3 s.h. Undergraduate seminar. Consent of instructor required. May be repeated.
103:099 Special Project arr. Independent research.

**For Undergraduate and Graduate Students**

103:100 Introduction to Linguistics 3 s.h. Introduction to forms found in human language: sounds and their contrasts and variation, words and meaningful subunits, sentences composed of words and phrases; patterns illustrated in language differences, historical change, different dialects. Same as 101:100.
103:107 Practicum in Teaching English as a Second Language 3 s.h. Practical experience in TESL, observation and participation in intensive English classes; design and teaching of ESL classes under supervision. Consent of instructor required. Prerequisite: 103:145.
103:110 Articulatory and Acoustic Phonetics 3 s.h. Production and transcription of all sounds in human languages; computer analysis of speech sounds. Offered fall semesters.
103:111 Syntactic Analysis 3 s.h. Introduction to sentence structures and basic abstract relations that characterize them, including category, word order, hierarchical organization; problem sets from English and other languages as basis for discussion, analysis. Offered spring semesters.
103:112 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. Prerequisite: 103:110.
103:113 Linguistic Field Methods 3 s.h. 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: 103:110, 103:111, and 103:112.
103:115 Language Processing Same as 031:115.
103:119 Topics in Portuguese Linguistics Same as 08L:119.
103:120 Historical and Comparative Linguistics 3 s.h. Principles of linguistic change; comparative method, genetic classification of languages; internal reconstruction, language typology. Offered spring semesters. Prerequisite: 103:112. Same as 08L:120.
103:125 Elementary Swahili I for Graduates  
Same as 129:145, 141:125.  
3 s.h.

103:126 Elementary Swahili II for Graduates  
Same as 129:146, 141:126.  
3 s.h.

103:127 Intermediate Swahili I for Graduates  
Same as 129:147, 141:127.  
3 s.h.

103:128 Intermediate Swahili II for Graduates  
Same as 129:148, 141:128.  
3 s.h.

103:132 Elementary Old English  
4 s.h.

103:135 Elementary Yoruba I for Graduates  
Same as 129:171, 141:135.  
3 s.h.

103:136 Elementary Yoruba II for Graduates  
Same as 129:172, 141:136.  
3 s.h.

103:137 Intermediate Yoruba I for Graduates  
Same as 129:173, 141:137.  
3 s.h.

103:138 Intermediate Yoruba II for Graduates  
Same as 129:174, 141:138.  
3 s.h.

103:139 Chinese Historical Phonology  
3 s.h.

103:141 The Structure of English  
Descriptive analysis of English, including sound system, word structure, sentence structure, focus on relevance to teaching English as a second language. Offered fall semesters. Prerequisite: 103:110 or consent of instructor.  
3 s.h.

103:144 Introduction to Chinese Linguistics  
Same as 103:144.  
3 s.h.

103:145 Methods of Teaching English as a Second Language  
3 s.h.

103:150 Language and Gender  
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. Same as 113:173.  
3 s.h.

103:151 Formalisms  
Basic logic for analyzing argumentation in linguistics (validity, soundness, necessary conditions, sufficient conditions, proof construction); basic mathematics and logic for analysis of natural languages (propositional and predicate calculus, set theory, axiomatic method, functions, relations, basic automata theory).  
3 s.h.

103:155 Morphology  
Lexical 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. Prerequisite: 103:100.  
3 s.h.

103:156 Linguistic Theory and Language Acquisition  
3 s.h.

103:161 Practical Phonetics  
Contemporary articulatory and acoustic research, including second-language acquisition, elicitation and computer analysis of primary linguistic data. Prerequisite: 103:110.  
3 s.h.

103:163 Philosophy of Language  
Consent of instructor required.  
Same as 026: 189.  
3 s.h.

103:165 Elementary Zulu I for Graduates  
Zulu language and culture through speaking, listening, reading, writing. Same as 129:165, 141:165.  
3 s.h.

103:166 Elementary Zulu II for Graduates  
Continuation of 103:165, which is prerequisite. Same as 129:166, 141:166.  
3 s.h.

103:167 Intermediate Zulu I for Graduates  
Continued skill development; review and expansion of basic grammar. Prerequisite: 103:166 or equivalent. Same as 129:167, 141:167.  
3 s.h.

103:168 Intermediate Zulu II For Graduates  
Continuation of 103:167, which is prerequisite. Same as 129:168, 141:168.  
3 s.h.

103:170 Language and Culture  
Prerequisites: 113:110, 113:171 or 103:100 or consent of instructor. Same as 113:172.  
3 s.h.

103:171 Anthropological Linguistics  
Same as 113:171.  
3 s.h.

103:172 Psychology of Language  
GE: social sciences. Same as 003:117.  
3 s.h.

103:173 Applied Linguistics  
Variables influencing second-language acquisition; introduction to second-language acquisition theory and research, how they relate to linguistic theory and to second language teaching. Offered fall semesters. Prerequisite: 103:100 or equivalent.  
3 s.h.

103:175 Introduction to Semantics  
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. Prerequisite: 103:111 or equivalent.  
3 s.h.

103:176 Language Development  
Prerequisite: 103:172 or 103:100 or consent of instructor. GE: social sciences. Same as 003:118.  
3 s.h.

103:177 Basic Neuroscience for Speech and Hearing  
Same as 003:116.  
3 s.h.

103:199 Special Projects  
arr.  
Theoretical and applied topics.  
1 s.h.

103:201 Introduction to Syntax  
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.  
3 s.h.

103:202 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. Prerequisite: 103:201.  
3 s.h.

103:203 Introduction to Phonology  
Analysis of sound systems, focus on early generative phonological theory; extensive practice in analysis using data from a variety of languages; linguistic argumentation. Prerequisite: 103:110.  
3 s.h.

103:204 Phonological Theory  
Post-SPE phonological theory; including autosegmental phonology, lexical phonology, metrical structure, underspecification theory, the syllable, optimality theory. Prerequisite: 103:203.  
3 s.h.

103:210 Linguistic Structures  
Grammatical and/or phonological structure of a selected language or language family. May be repeated with different language. Consent of instructor required.  
3 s.h.
Special English Courses

For students whose first language is not English; courses taken to meet the College of Liberal Arts proficiency requirement may not be taken P/N. ESL courses may not be taken S/U.

103:001 Iowa Intensive English: Communication Skills 0 s.h.
Aural comprehension, spoken English; American attitudes, values, and customs; information exchange, talking with Americans; cultural differences; beginning, intermediate, advanced. Consent of ESL coordinator required.

103:002 Iowa Intensive English: Reading 0 s.h.
Effective reading; skills and practice of reading strategies using newspapers, popular magazines, schedules, documents, academic textbooks, correspondence, literature; beginning, intermediate, advanced. Consent of ESL coordinator required.

103:003 Iowa Intensive English: Grammar 0 s.h.
Correct use of English grammatical structures; extensive practice to achieve competence in English communication; beginning, intermediate, advanced. Consent of ESL coordinator required.

103:004 Iowa Intensive English: Pronunciation 0 s.h.
American attitudes, values, and customs; cultural awareness; practice in conversational pronunciation; American English pronunciation; beginning, intermediate, advanced. Consent of ESL coordinator required.

103:005 Iowa Intensive English: Writing 0 s.h.
Personal and formal writing; journal entries, letters, critiques, essay exams, short papers involving library use; revising and editing; beginning, intermediate, advanced. Consent of ESL coordinator required.

103:006 TA Preparation in English: Fluency Building 0 s.h.
Pronunciation, conversational fluency, knowledge of American culture. Consent of ESL coordinator required.

103:007 TA Preparation in English: Pronunciation 0 s.h.
Intensive work toward maximum intelligibility; emphasis on stress, timing, intonation. Consent of ESL coordinator required.

103:008 TA Preparation in English: Presentation Skills 0 s.h.
Intelligibility of speech and clarity of expression in presenting and responding; practice in taped lectures; student expectations and classroom management in an American university. Consent of ESL coordinator required.

103:009 TA Preparation in English: Orientation 0 s.h.
Student expectations, typical teacher-student relationships; basic classroom management in an American university.

103:185 English as a Second Language: Conversation Skills 3 s.h.
Speaking skills for the American academic setting and American society; pronunciation, grammar, vocabulary; structured opportunity to develop fluency. TOEFL score of 530 or consent of ESL coordinator required.

103:186 English as a Second Language: Grammar 3 s.h.
Development of skills appropriate to formal speaking; diagnosis and correction of persistent pronunciation problems; correct stress, intonation. TOEFL score of 530 or consent of ESL coordinator required.

103:187 English as a Second Language: Pronunciation and Oral Skills 3 s.h.
English structure; troublesome grammar patterns. TOEFL score of 530 or consent of ESL coordinator required.

103:189 English as a Second Language: Reading Skills 3 s.h.
Increasing reading speed and comprehension of university-level reading and vocabulary; exercise, discussion, and note-taking assignments to develop critical analysis skills. TOEFL score of 530 or consent of ESL coordinator required.

LITERATURE, SCIENCE, AND THE ARTS

Director:
Professors: Alan F. Nagel (English/Cinema and Comparative Literature/Literature, Science, and the Arts), Jon Ringen
Adjunct assistant professors: Wallace K. Chappell, Thomas Dean, Dorsey Phelps
Adjunct instructor: Christine Peterson Brus
Lecturer: Meredith Alexander (Theatre Arts/Literature, Science, and the Arts/Sexuality Studies)

Affiliated faculty: David C. Balduis (Law), Sandra Barkan (Cinema and Comparative Literature), David B. Bills (Planning, Policy, and Leadership Studies), Sarah Bass (Philosophy), William G. Buss (Law), David Depew (Communication Studies), Evan Fales (Philosophy), Sabine I. Goll (German/Cinema and Comparative Literature), Michael D. Green (Law), Paul Greenough (History), Nancy R. Hausman (Management and Organizations), Paul M. Heider (Anatomy and Cell Biology), David E. Klemm (Religion), William H. Klink (Physics and Astronomy/Mathematics), W.H. Knight (Law), Brooks Landon (English), Jeffrey C. Murray (Biological Sciences/Pediatrics/Genetics), David Nelson (Music), Greg Oden (Psychology/Computer Science), Robert Olick (Family Medicine), Jacki Rand (History/American Indian and Native Studies), William M. Reisinger (Political Science), John C. Reitz (Law), T.M. Scruggs (Music), Alvin Snider (English), John Solow (Economics), Downing Thomas (French and Italian), Steve Thunder-McGinley (Curriculum and Instruction/Art and Art History), Oleg Timofeev (Russian), Steven R. Ungur (French and Italian/Cinema and Comparative Literature), Russell Valentino (Russian), Ruth Wachtel (Anesthesiology), Edward A. Wasserman (Psychology), Larry Weber (Civil and Environmental Engineering), Stephen G. Wieting (Sociology), Derek H. Willard (Preventive and Community Dentistry), George G. Woodworth (Statistics and Actuarial Science/Biostatistics)
Undergraduate degree: B.A. in Literature, Science, and the Arts
Web site: http://www.uiowa.edu/~lsa

The interdisciplinary program in Literature, Science, and the Arts (LSA) enables students to pursue individual interests while exploring the full range of liberal arts disciplines. LSA majors design individualized plans of study that relate personal goals and academic interests to broad issues in the humanities, sciences, arts, and professions. One student might study ethics as they relate to business, law, and medicine; another relations among science, society, and values; and another the arts within a particular cultural context.

The LSA major offers a Bachelor of Arts degree broader than that permitted by liberal arts study in a single subject. Topics cross, reflect upon, and challenge disciplinary boundaries. Through writing, analytical thinking, and discussion, students develop critical appreciation of diverse perspectives.

Central to the program are team-taught interdisciplinary seminars that challenge students to consider ideas from diverse points of view. The seminars are small-group round-table discussions led by two or more faculty members representing different departments and disciplinary perspectives. Together, faculty members and students examine values and judgments rooted in the liberal arts disciplines.

LSA courses are open to juniors, seniors, and graduate students from any department or college. Sophomores occasionally may be admitted by approval of the instructors. One course, 033:050 Making Choices: Interdisciplinary Perspectives, is open to sophomores and all others who have completed the rhetoric requirement. The course 033:030 Cultural Diversity and Identity is open to first-year students.

The program also participates in the first-year seminar program, offering a faculty-taught course open only to first- and second-semester students (033:029).

Frequent consultations with an adviser, as well as care in preparing the required statement of purpose, ensures that students shape the major to suit individual goals, whether those be preparation for professional careers or further study in graduate school.

Bachelor of Arts

Specific requirements (beyond the General Education Program) for the B.A. in Literature, Science, and the Arts are as follows.

A plan of study must include the following 24 semester hours of course work.

LSA courses 12 s.h.
Natural and social science courses 12 s.h.

Students also must complete at least 30 semester hours of course work chosen from the following four areas. All areas must be represented; students choose 12 semester hours from each of two areas and 3 semester hours from each of the other two areas.

Philosophy, religion, history

Literature (literature courses taught in a language other than English may be counted)
Fine arts

Foreign language (courses in this area must be beyond the general education approved sequences; literature and culture courses taught in a language other than English may be counted)

Advisers may identify a course that can be approved in more than one area, but a course may be used only once to satisfy the requirements of the major.

LSA majors also are required to submit a statement of purpose describing their goals by their second semester as majors. Information on writing the statement of purpose and description of LSA courses for the current and coming semesters are available at the program’s Web site.

Students must complete a minimum of 12 semester hours of LSA courses and at least 12 semester hours of other major courses at The University of Iowa.

Students considering an LSA major should consult with the program office before the end of their sophomore year.

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: No course may satisfy more than one major requirement. Courses used to complete the General Education Program may not be used to satisfy major requirements for the Program in Literature, Science, and the Arts, so students must complete the General Education Program in a timely fashion. Students prepare an individualized plan of study consisting of at least 14 courses, including one in foreign language beyond fourth-semester competency, so some students may need to do foreign language work early.

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: a plan of study, language competency in the language of choice, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least six courses from the plan of study and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: four more 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

Honors

Superior students who undertake a further program of independent study may earn the Bachelor of Arts with honors. To be admitted as candidates for honors, students must have the endorsement of the director of the Program in Literature, Science, and the Arts and meet requirements for the University Honors Program. Honors students submit an honors project to a faculty committee.

Courses

033:000 Cooperative Education Internship 0 s.h. Work experience related to student’s academic interests. Consent of instructor required.

033:029 Fit-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). Open only to first- and second-semester students.

033:030 Cultural Diversity and Identity 3 s.h. The nature of personal and cultural identity within a pluralistic society; race, ethnicity, national identity, class, sexuality, and gender as categories of cultural difference. GE: cultural diversity.

033:050 Making Choices: Interdisciplinary Perspectives 3 s.h. Interdisciplinary consideration of what we know, value, hope, should do; focus on case studies of private, professional decision making. GE: humanities.

033:100 Scientific Reasoning 3 s.h. Patterns of reasoning useful for understanding and evaluating scientific evidence, theory, controversy, historical and contemporary examples from the physical, biological, behavioral, biomedical sciences. GE: quantitative or formal reasoning.

033:111 Myth and Reason 2-4 s.h. Theories of reason and rationality presumed to govern knowledge-producing disciplines, and their relation to myths as stories and explanations.

033:121 The Good Society 2-4 s.h. Life in society and its potential as examined in film and literature and by philosophy and science. GE: humanities.

033:142 Natural Sciences and Human Cultures 3 s.h. Nature and value of modern science and technology in historical, cultural, and philosophical perspectives; case studies of scientific discovery, technological innovation and development, science policy, negotiation of cultural values, conceptions of nature and society. GE: humanities.

033:144 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. Junior or senior standing or consent of instructor required. Same as 031:174.

033:145 Literature, Music, and Aesthetics 2-4 s.h. Interdisciplinary connections between literature and music, specific cultural, ideological contexts. Same as 025:120, 041:162.

033:151 Individuals and Institutions 2-4 s.h. Relationships between individuals and institutions viewed through &standing works of literature, social science, and law.

033:152 Values in the Contemporary World 2-4 s.h. Modern problems in definition and choice of values; writings of contemporary ethical theorists, novelists. Same as 032:149.

033:153 Hard Cases: Science Policy and Values 3 s.h. Major issues in practical ethics through difficult case studies in fields such as bioethics; readings in classic authors; recent contributions from several disciplines.

033:154 Human Nature and the Impact of Science 2-4 s.h. Relationships among scientific, humanistic, social, religious thought. GE: humanities.

033:155 Risk Technology and the Public 2-4 s.h. Place and criticism of risks in society; quantitative risk assessments and their comprehension by the public, roles of experts, public interests; readings from anthropology, philosophy, social science; case studies. Same as 091:383.

033:157 Democracy and the Rule of Law 3 s.h. Development of legal cultures, with emphasis on place of law in democratic theory; readings from political philosophy, comparative law, other cultural documents representing at least two distinct geographical areas.

033:158 Race, Law, and Culture 3 s.h. Aspects of race as they affect judicial decision making and society. Same as 091:248, 129:156.

033:161 The Arts in Performance 2-4 s.h. Interplay between art forms and other cultural patterns, institutions, rituals; close examination of creative and theoretical writings, specific works of music, graphic art; discussions with artists and directors of on-campus performances. GE: fine arts or humanities.

033:164 Roots of Modern Culture 2-4 s.h. Competing understandings of modernity in historical and cultural perspectives.

033:180 Special Projects arr.

033:191 Independent Study for Honors 2-4 s.h.
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 B.A. or B.S. in mathematics, rather than going on to graduate study.

Students may choose to combine a degree in mathematics with one in computer science, statistics, or actuarial science. The department also offers a minor in mathematics.

Candidates for all Department of Mathematics undergraduate degrees must complete the College of Liberal Arts General Education Program. The department encourages students to choose courses that complement their mathematics interests.

At least 15 semester hours of post-calculus course work applied toward the major requirements must be taken at The University of Iowa. Post-calculus courses are those numbered 22M:027 and higher that have a calculus prerequisite.

Students must maintain a grade-point average of at least 2.00 in all course work for the major to earn a degree in mathematics.

Additional policies concerning transfer credit, credit by correspondence, credit by examination, cumulative grade-point average, rules relating to regression and duplication, and so forth, are discussed in the College of Liberal Arts introductory section of the Catalog.

Information about duplication, regression, and use of the second-grade-only option for mathematics courses is available from the mathematics department.

The Handbook for Undergraduate Majors is available in the mathematics department office. It contains detailed information about schedule planning and career options. Additional information on admission, financial support, employment opportunities, the faculty, facilities, and other topics is available on the University and departmental World Wide Web sites.

Program A

This program is primarily for students who plan to work in industry or government or to pursue graduate study in mathematics.

Students must complete seven core courses. In addition, B.A. students must complete at least four electives, and B.S. students must complete at least six.

CORE COURSES

A two-semester sequence of calculus I-II 8 s.h.

Any of the following two-semester sequences is acceptable. However, the sequences are distinct enough that the department discourages students from switching sequences mid-study without a strong need and good preparation.

Advanced placement credit, CLEP credit, and credit earned through the Mathematics Incentive Program is accepted for part or all of the calculus requirement.

22M:021-022 Calculus and Modeling I-II
22M:025-026 Calculus I-II
22M:035-036 Engineering Calculus I-II

22M:045-046 Accelerated Calculus with Applications I-II

All of these:
22M:027 Introduction to Linear Algebra 4 s.h.
22M:050 Introduction to Abstract Algebra I 3 s.h.
22M:055-056 Fundamental Properties of Spaces and Functions I-II 7 s.h.
22M:100 Introduction to Ordinary Differential Equations 3 s.h.

Higher-level courses may be substituted for the core courses, with Department of Mathematics approval.

ELECTIVES

For the B.A. degree: four electives (each 3-4 semester hours) chosen from the following list, including at least one upper-level mathematics course.

For the B.S. degree: six electives from the following list, including at least three upper-level mathematics courses.

Mathematics


Computer Science

22C:016 Computer Science I 4 s.h.
22C:020 Computer Science II 4 s.h.
22C:030 Computer Science III 3 s.h.

Any course numbered above 22C:030 that counts toward an undergraduate major in computer science, except 22C:034, 22C:197, and 22C:198

Statistics and Actuarial Science

Students can count only one of these: 22S:120 or 22S:130. Neither of them can be counted if taken after 22S:135.

22S:120 Probability and Statistics 4 s.h.
22S:130 Introduction to Mathematical Statistics I 3 s.h.
22S:131 Introduction to Mathematical Statistics II 3 s.h.
22S:135 Continuous Quality Improvement 3 s.h.
22S:138 Bayesian Statistics 3 s.h.
22S:150 Regression, Time Series, and Forecasting 3 s.h.
22S:153 Mathematical Statistics I 3 s.h.
22S:154 Mathematical Statistics II 3 s.h.
22S:156 Applied Time Series Analysis 3 s.h.
22S:158 Experimental Design and Analysis 3 s.h.
22S:174 Stochastic Process Models 3 s.h.
22S:175 Risk Theory 4 s.h.
22S:176 Credibility and Loss Distributions 4 s.h.
22S:180 Mathematics of Finance 3 s.h.
22S:181 Life Contingencies I 4 s.h.
22S:182 Life Contingencies I 4 s.h.
22S:193 Statistical Inference I 3 s.h.
22S:194 Statistical Inference II 3 s.h.
22S:195 Probability and Stochastic Processes I 3 s.h.
22S:196 Probability and Stochastic Processes II 3 s.h.

Program B

This program is intended for students seeking secondary school teaching licensure. See the Handbook for Undergraduate Majors as well as “Curriculum and Instruction” in the College of Education section of the Catalog.

CORE COURSES

A two-semester course of calculus I-II 8 s.h.

Any of the following two-semester sequences is acceptable. However, the sequences are distinct enough that the department discourages students from switching sequences mid-study without a strong need and good preparation.

Advanced placement credit, CLEP credit, and credit earned through the Mathematics Incentive Program is accepted for part or all of the calculus requirement.

22M:021-022 Calculus and Modeling I-II
22M:025-026 Calculus I-II
22M:035-036 Engineering Calculus I-II
22M:045-046 Accelerated Calculus with Applications I-II
22M:027 Introduction to Linear Algebra 4 s.h.
22M:028 Calculus III 4 s.h.
22M:050 Introduction to Abstract Algebra I 3 s.h.
22M:055 Fundamental Properties of Spaces and Functions I 3 s.h.

Students who wish to take 22M:055-056 instead of 22M:028 must consult their advisor.

22M:070 Foundations of Geometry 3 s.h.
22M:106 Transformation Geometry 3 s.h.
22S:016 Computer Science I 4 s.h.
22S:120 Probability and Statistics 4 s.h.
22S:150 Introduction to Discrete Mathematics 3 s.h.
22S:151 Discrete Mathematical Models 3 s.h.

Higher-level courses may be substituted for the core courses, with Department of Mathematics approval.

ELECTIVES

Program B candidates for the B.A. degree must take at least one additional course beyond calculus. Program B candidates for the B.S. degree must take at least three additional courses beyond calculus, of which two must be numbered 22M:106 or above. With their advisor’s approval, capable students are encouraged to substitute higher-level courses in the same subject area for any of the electives. The Handbook for Undergraduate Majors offers advice on course selection.

Program C

This program provides a degree with specialization in a math-related area, for instance, mathematics of optimal business decision making, economics, physics, biostatistics, biomathematics, computer science, and statistics and actuarial science. In consultation with the faculty adviser, each student prepares a program of studies tailor-made to his or her interests and academic
or career goals. Building on a core of mathematics courses, students have considerable freedom to design their curriculum. The proposed program of studies must be approved by the mathematics department’s undergraduate committee. Students should submit their study plans on a Program C Plan of Study form, available in the mathematics department office. The Handbook for Undergraduate Majors has plans for choosing electives in several areas; students may use these or propose other plans.

**CORE COURSES**

A two-semester sequence of calculus I-II 8 s.h.

Any of the following two-semester sequences is acceptable. However, the sequences are distinct enough that the department discourages students from switching sequences mid-study without a strong need and good preparation. Advanced placement credit, CLEP credit, and credit earned through the Mathematics Incentive Program is accepted for part or all of the calculus requirement.

- 22M:021-022 Calculus and Modeling I-II
- 22M:025-026 Calculus I-II
- 22M:035-036 Engineering Calculus I-II
- 22M:045-046 Accelerated Calculus with Applications I-II
- 22M:027 Introduction to Linear Algebra 4 s.h.
- 22M:028 Calculus III 4 s.h.
- or 22M:056 Fundamental Properties of Spaces and Functions II 4 s.h.

One additional proof course (e.g., 22M:050, 22M:051, 22M:055, or 22M:056)

Higher-level courses may be substituted for the core courses, with Department of Mathematics approval.

**ELECTIVES**

Students choose six electives for the B.A. degree, and eight for the B.S. degree. Electives are chosen according to the student’s area of specialization. At least three of the courses must be in mathematical sciences (prefixes of 22C, 22M, 22S).

For a list of suggested subtracks, consult the Handbook for Undergraduate Majors.

**Four-Year Graduation Plan**

Before the third semester begins: course work through second-semester calculus and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: two or three more courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: three or four more major courses and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: two or three more major 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**

Any undergraduate student with a cumulative grade-point average of 3.20 or higher may join the University Honors Program; interested students should contact the honors office in the Shambaugh House Honors Center.

To graduate with honors in mathematics, a student must be a member of the College of Liberal Arts Honors Program, must complete the regular requirements for an undergraduate major in mathematics with a grade-point average of at least 3.40, and must complete either an honors project or the courses 22M:115-116 and 22M:120-121 with a grade-point average of 3.00 or higher. Other sequences such as 22M:170-171 may be substituted with the approval of the honors adviser.

Students planning to do an honors project are responsible for finding a faculty member willing to supervise the project. Help in finding a project supervisor is available from the department. Students typically register for 22M:197 for at least 3 semester hours. For more information, contact the mathematics department honors adviser.

**Double Major in the Division of Mathematical Sciences**

Students who wish to combine a major in mathematics with a major in computer science, statistics, or actuarial science must satisfy the requirements of program A, program B, or program C in mathematics. Students are advised to seek the same degree (B.A. in both areas or B.S. in both); otherwise the University requires additional semester hours for graduation. The College of Liberal Arts requires that students seeking a double major in the Division of Mathematical Sciences earn a minimum of 56 semester hours in courses taken outside the division.

**Transfer from Engineering to Mathematics**

Certain students who have completed 22M:035, 22M:036, 22M:040, 22M:041, or 22M:042 may count these courses toward a bachelor’s degree in mathematics. See the Department of Mathematics Undergraduate Handbook.

**Minor**

The minor in mathematics requires a minimum of 15 semester hours earned in Department of Mathematics courses; at least 12 of the 15 must be earned in advanced courses at The University of Iowa. Neither transfer credit nor credit by examination is accepted toward the 12 semester hours of advanced work; advanced courses are 22M:027 and 22M:028, and all courses numbered 22M:050 or higher, except 22M:081, 22M:104, 22M:105, 22M:109, and 22M:195.

Students seeking a mathematics minor must maintain a grade-point average of at least 2.00 in all work attempted in the department. No course counted toward the minor may be taken pass/nonpass.

**Graduate Programs**

**Master of Science**

Students earn the M.S. through courses and comprehensive examinations. There is no M.S. thesis.

There are four programs leading to an M.S. in mathematics. The requirements (courses and comprehensive examination areas) may be modified with the consent of the department.

**Program I**

This program prepares students for further study of pure and applied mathematics and for employment in government and industry. The program requires a minimum of 30 semester hours of graduate credit including the following course work in analysis, topology, and abstract algebra.

- 22M:115-116 Introduction to Analysis I-II 6 s.h.
- or 22M:210-211 Analysis I-II 6 s.h.
- 22M:132 General Topology 3 s.h.
- 22M:120-121 Abstract Algebra I-II 6 s.h.
- or 22M:205-206 Introduction to Algebra I-II 6 s.h.

Each student must take two comprehensive examinations, one on the analysis and topology courses and the other on the algebra courses.

Students’ course work must include at least 24 semester hours in the following.

**Mathematics**

Any courses numbered 22M:110 or above, or equivalent
Computer Science
22C:122 High Performance Computer Architecture 3 s.h.
22C:123 Programming Language Foundations 3 s.h.
22C:135 Introduction to Computation Theory 3 s.h.
22C:145 Artificial Intelligence 3 s.h.
Any courses numbered 22C:200 or above

Statistics
22S:153 Mathematical Statistics I 3 s.h.
22S:154 Mathematical Statistics II 3 s.h.
Any courses having any of the above two courses as prerequisites
Any course numbered 228:200 or above

Program II
This program is designed for secondary school teachers. The requirements are the same as those in program I or III, except that two mathematics education courses are required. All mathematics courses numbered 22M:100 or above may be used to satisfy the 24-semester-hour requirement. Students are encouraged to consult with the mathematics education faculty when planning their courses of study.

Program III
This program focuses on applied mathematics. It requires a minimum of 30 semester hours of graduate credit, including at least 24 semester hours in the Division of Mathematical Sciences.

Students in program III take several courses and two comprehensive examinations, one on differential equations and one on numerical analysis/optimization.

The required courses are as follows.
22M:142 Nonlinear Dynamics and Chaos 3 s.h.
22M:144 Introduction to Partial Differential Equations I 2-3 s.h.
22M:140 Continuous Mathematical Models 3 s.h.
or
22M:151 Discrete Mathematical Models 3 s.h.
22M:170 Numerical Analysis: Nonlinear Equations and Approximation Theory 3 s.h.
22M:171 Numerical Analysis: Differential Equations and Linear Algebra 3 s.h.
22M:174 Optimization Techniques 3 s.h.

Two of these:
22C:116 Advanced Operating Systems 3 s.h.
22C:153 Design and Analysis of Algorithms 3 s.h.
22M:118 Complex Variables 3 s.h.
22M:127 Matrix Theory 3 s.h.
22M:140 Continuous Mathematical Models (if not chosen above) 3 s.h.
22M:151 Discrete Mathematical Models (if not chosen above) 3 s.h.
22S:153 Mathematical Statistics I 3 s.h.
22S:154 Mathematical Statistics II 3 s.h.

Students who have courses or experience equivalent to the required courses may request substitute electives.

Program IV
This program is designed for nondepartmental students working toward Ph.D. degrees in areas that require mathematical knowledge. The program has no specific required courses. Course distribution requirements are the same as those for program I.

Students in program IV are considered to have passed the comprehensive examination for the master’s degree in mathematics if they have maintained a grade-point average 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 the chosen area.

Students in program IV are assigned a mathematics adviser, who works with them and their major adviser to plan an appropriate curriculum for the M.S. in mathematics. A suitable program of study should be approved by a mathematics adviser 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.

Admission
Admission to an M.S. program (I-III) is based on a combination of undergraduate course work and grades, letters of recommendation, and GRE General Test scores (plus TOEFL scores for foreign students). The following guidelines are current, although exceptions may be made. Numerical standards are reset every year or two.

Students must have completed work in an undergraduate mathematics program equivalent to the bachelor's degree offered by the mathematics department. Students whose preparation does not meet this requirement may be admitted conditionally and are asked to take specific courses that cover the deficiency. Students are expected to have an undergraduate grade-point average of at least 3.20. Relevance and difficulty of courses are considered when evaluating grades; grades of C or lower in mathematics courses need to be balanced by A grades.

Students must submit three letters of recommendation to support their applications. They also are expected to score at least 650 on the quantitative section of the GRE General Test. Applicants are encouraged to submit scores for the mathematics area examination as well-particularly students who need financial support and whose credentials may show weak areas.

Foreign students are required to demonstrate their competence in English. Normally this is done by scoring at least 550 on the TOEFL (or 215 on the computer-based TOEFL).

Doctor of Philosophy
The Ph.D. program places strong emphasis on preparation for research and teaching. The department maintains no division between “pure” and “applicable” mathematics. It cooperates in interdisciplinary doctoral programs with the College of Education and the Program in Applied Mathematical and Computational Sciences.

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 earn at least 72 semester hours of graduate credit and 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. comprehensive examination (consult the director of graduate studies in mathematics).

To further encourage mathematical breadth, students must earn at least 18 semester hours of graduate credit in regular courses equivalent to or more advanced than the Ph.D. comprehensive examination preparatory courses. The department maintains a list of 200-level and 300-level courses that are accepted, as well as rules to ensure proper distribution.

The Ph.D. comprehensive examination consists of three parts, each a three-hour written exam. Students choose three areas from the department’s list of comprehensive examination areas: algebra, analysis, logic, partial differential equations, and topology. For each comprehensive area, there is a two-semester, 200-level course sequence designated as preparatory, although exams may differ from course content. The three parts of the exam may be taken concurrently (all three over a two-week period) or separately (over two or three different semesters).

In the first case, one grade (pass, fail, conditional pass) is given on the whole three-part examination by a committee consisting of six faculty members, two from each area. If the grade is fail, the committee has the option to consider the exams separately, offering the student the option of pass in one or two of the areas and fail in the others.

When the exams are taken separately, the student receives a grade of pass or fail in each area. A passing grade from each examiner in each area is needed to receive a pass in the Ph.D. comprehensive exam, and a maximum of one failure is allowed in each area.

Candidates also take an oral final examination on their dissertation material.

Candidates 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 mathematics department graduate committee. Courses that do not carry graduate credit can be used to satisfy this requirement, but they cannot be counted.
toward the required 72 semester hours of graduate credit. The demonstration of language competence must take place after the student has enrolled in graduate school.

The most distinctive aspect of a Ph.D. is the thesis. The department expects this 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 member of the department’s faculty and is approved by a committee.

Admission

Admission to the Ph.D. program is based on a combination of undergraduate or graduate course work and grades, letters of recommendation, and Graduate Record Examination scores (plus TOEFL scores for foreign students). Offered spring semesters. Admission to the Ph.D. program is based on a recommendation, and Graduate Record Examination scores (plus TOEFL scores for foreign students), general test quantitative score of at least 700, and TOEFL score of at least 575 (or 230 on the computer-based test). New graduate students often are admitted as master’s candidates even if they intend to go on for a Ph.D.

Courses

For Lower-Division Undergraduates

These courses are not open to graduate students except by special arrangement with the department chair. Credit earned in 22M:001, 22M:002, and 22M:003 cannot be counted toward degree requirements.

*Although the sequences 22M:021-022, 22M:025-026, 22M:035-036, and 22M:045-046 are similar, they cover the material in a different order and with different emphases. Students must consult with their adviser before taking the second semester of a sequence after taking the first semester of another. Students who consider taking 22M:026 after 22M:011, 22M:016, or 22M:017 must consult with their adviser.

Courses in Mathematics

22M:004 Theory of Arithmetic

Sets, numeration, whole numbers; integers, rational numbers, and number theory. Offered spring semesters. Prerequisite: 22M:001 or satisfactory score on math placement exam or equivalent or consent of instructor.

22M:005 Trigonometry

Trigonometric functions. Solutions of right and oblique triangles, complex numbers. Prerequisite: 22M:002, or satisfactory score on math placement exam, or two years of high school algebra and one year of high school geometry.

22M:009 Elementary Functions

Functions, relations, coordinate systems; properties and graphs of algebraic, trigonometric, logarithmic, exponential functions; inverse trigonometric functions; properties of lines, conic sections. GE: quantitative or formal reasoning. Prerequisite: 22M:005 or satisfactory score on math placement exam, or two years of high school algebra and one year of high school geometry.

22M:010 Finite Mathematics

Introduction to logic, set theory, linear equations and inequalities, linear programming, matrix algebra, combinatorial probability. GE: quantitative or formal reasoning. Prerequisite: 22M:002 or satisfactory score on math placement exam or two- and one-half years of high school mathematics.

22M:011 Introduction to Calculus with Applications

Short course in derivatives and integrals with applications. GE: quantitative or formal reasoning. Offered spring semesters. Prerequisite: 22M:002 or satisfactory score on math placement exam or 22M:001 or two and one-half years of high school mathematics.

22M:014 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). Open only to first- and second-semester students.

22M:015 Mathematics for the Biological Sciences

Relations, functions, coordinate systems, graphing, polynomials, trigonometric functions, logarithmic and exponential functions; discrete mathematics, probability; examples and applications from biological sciences. GE: quantitative or formal reasoning.

22M:016 Calculus for the Biological Sciences

Differential, integral calculus, differential equations, multivariable calculus: applications to life sciences. GE: quantitative or formal reasoning. Prerequisite: 22M:005 or satisfactory score on math placement exam or two and one-half years of high school mathematics, including trigonometry.

22M:017 Calculus and Matrix Algebra for Business

Quantitative methods for treating problems arising in management, economics, business, and related areas. Introduction to differential and integral calculus, systems of linear equations and matrix operations. GE: quantitative or formal reasoning.

22M:019 Exploring Calculus with Graphing Calculators

Use of graphing calculators to visualize, understand, and explore concepts and techniques in differential and integral calculus. Co-requisite: 22M:016 or 22M:017 or 22M:025 or 22M:035

22M:021 Calculus and Modeling I

Fundamental concepts and methods; similar in scope to 22M:025-026, but with increased emphasis on modeling of scientific phenomena. Prerequisite: 22M:009 or 22M:011 or 22M:025 or 22M:035

22M:022 Calculus and Modeling II

Continuation of 22M:021, which is prerequisite. Prerequisite: 22M:021

22M:025 Calculus I

Fundamental concepts, methods, techniques of single-variable differential and integral calculus; applications. GE: quantitative or formal reasoning. Prerequisite: 22M:009 or 22M:002 and 22M:005; or three and one-half years of high school mathematics, including analytic geometry and trigonometry.

22M:026 Calculus II

Continuation of 22M:025. Prerequisite: 22M:025 or consent of adviser.

22M:027 Introduction to Linear Algebra

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. Prerequisite: 22M:021 or 22M:025 or 22M:035 or 22M:045 or consent of instructor.

22M:028 Calculus III

Multivariable calculus: vector functions, line integrals, tangents, differentials, gradient, implicit functions, coordinate systems, Taylor’s expansion, extrema, multiple integrals, vector fields, surface integrals, Stokes’s theorem. Prerequisite: 22M:025 or 22M:026 or 22M:036 or 22M:046 or consent of instructor.

22M:035 Engineering Calculus I

One-variable calculus geared to engineering program; derivative, curve sketching, word problems, trigonometric derivatives, applications of integration, improper integrals, partial fractions, integral and applications. GE: quantitative or formal reasoning.

22M:040 Matrix Algebra for Engineers

Operations on matrices, systems of linear equations in matrix form and their solution by reduction, determinants, matrix products, eigenvalues and eigenvectors, diagonalization by symmetric matrices, vector spaces, linear independence, basis, dimension. Open only to engineering students. Corequisite: 22M:036.

22M:041 Differential Equations for Engineers

Methods of solution of first-order differential equations, higher-order differential equations, systems of linear differential equations, including Laplace transforms. Prerequisite: 22M:022 or 22M:025 or 22M:035 or 22M:045 or consent of instructor.

22M:042 Vector Calculus for Engineers

Vector calculus geared to engineering program; directional and partial derivatives, gradients; Taylor’s formula, max-min problems, multiple integrals; coordinates, line, surface integrals, vector fields. Prerequisite: 22M:022 or 22M:026 or 22M:036 or 22M:046 or consent of instructor.

22M:045 Accelerated Calculus with Applications

Advanced approach to beginning differential and integral calculus; covers more material than 22M:021, 22M:025, 22M:035; emphasis on applications to biology, physics, economics, dynamical systems; computers used for graphics, numerical and symbolic calculations (no previous experience required). GE: quantitative or formal reasoning. Prerequisite: ACT math score above 28, or consent of instructor. Corequisite: 22M:046 Calculus with Applications II

22M:046 Calculus with Applications II

Continuation of 22M:045 (also may follow 22M:021, 22M:025, 22M:035); topics from calculus of two and three variables; computer use with emphasis on applications. Prerequisite: 22M:045; or exceptional performance in 22M:021 or 22M:025 or 22M:035, and consent of instructor.

Elementary Topics of General Interest

These courses are not open to graduate students except by special arrangement with the department chair.

22M:050 Introduction to Abstract Algebra I

Basic logic, proof methods, sets, functions, relations, mathematical induction; gradual transition from familiar number systems to abstract structures—division algorithm, unique factorization theorem; construction of integers, rationals, reals; Euclidean, unique factorization domains; fields. Prerequisite: 22M:027. Corequisite: second-semester calculus or consent of instructor.

22M:051 Introduction to Abstract Algebra II

Continuation of 22M:050, which is prerequisite; ideals and field extensions, introduction to groups, finite groups, finite abelian groups.


For Upper-Division Undergraduates

Graduate students in mathematics may not receive credit for 22M:100, 22M:104, 22M:105, or 22M:109.

22M:100 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: 22M:027 and 22M:028, or 22M:056, or consent of instructor.

22M:101 Introduction to Matrix Theory 3 s.h.
- Vector algebra and geometry of three-dimensional Euclidean space; coordinates and vector spaces; lines and planes, matrices, linear transformations, systems of linear equations, reduction to row-echelon form, dimension, rank, determinants, eigenvalues, eigenvectors. Graduate standing required.

22M:105 Basic Analysis 3 s.h.
- Elementary topological and analytical properties of real numbers; emphasis on ability to handle definitions, theorems, proofs; same material as 22M:055 for “on-mathematics graduate students. Graduate standing required. Prerequisites: one year of calculus and a semester of linear algebra.

22M:106 Transformation Geometry 3 s.h.
- Euclidean, affine, and projective transformations of the plane; geometry and algebra connected through group structure of important sets of transformations; emphasis on plane isometries, similarities, and congruences. Prerequisite: 22M:050 or consent of instructor.

22M:107 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. Prerequisites: two semesters of calculus and one semester of linear algebra, or consent of instructor.

22M:108 Philosophy of Mathematics 3 s.h.
- Role of formalism, intuition, logicism, Platonism in shaping foundations of mathematics; nature of mathematical existence and truth; Godel’s incompleteness theorems; axiom of choice; philosophical differences between various set theories (e.g., Zermelo-Fraenkel, Godel-von Neumann); category theory, other viable foundations of mathematics; relationship between mathematics, science. Prerequisites: two semesters of calculus and 22M:027, or consent of instructor.

22M:109 Classical Analysis 3 s.h.
- Multivariable calculus, vector functions, line integral, total differentials, gradient, directional derivatives, line integrals, Taylor’s expansion, extrema, multiple integrals, vector fields, surface integrals, Stokes’ theorem. Graduate standing required. Prerequisite: one year of calculus.

22M:115 Introduction to Analysis I 3 s.h.
- Sets and functions, sequences and series of real numbers: limits, metric spaces, continuous functions, connectedness, completeness, compactness. Prerequisite: 22M:055 or graduate standing or consent of instructor.

22M:116 Introduction to Analysis II 3 s.h.
- Riemann integral, fundamental theorems of calculus, elementary functions, Taylor series, sequences and series of functions, uniform convergence, Picard fixed-point theorem, existence of solutions to differential equations, implicit function theorem. Prerequisite: 22M:115.

22M:118 Complex Variables 3 s.h.
- Geometry of complex plane, analytic functions; Cauchy-Goursat theorem, applications; Laurent series, residues, elementary conformal mapping. Prerequisite: 22M:050 or consent of instructor.

22M:121 Abstract Algebra I 3 s.h.
- Continuation of 22M:120, which is prerequisite.

22M:124 Foundations of Logic 3 s.h.
- Propositional calculus, Boolean algebras, introduction to axiomatic theories. Prerequisite: 22M:050 or 22M:055 or graduate standing or consent of instructor.

22M:126 Elementary Theory of Numbers 2-3 s.h.
- Factorization, congruences, quadratic reciprocity, law of quadratic reciprocity. Prerequisite: 22M:050 or equivalent.

22M:127 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. Prerequisite: 22M:027 or 22M:055 or graduate standing or consent of instructor.

22M:130 Elementary Topology 3 s.h.
- Introduction to topology of Euclidean spaces and manifolds, emphasis on basic sets (d disks, spheres, annuli, Cantor sets) in dimensions 1,2,3; continuous maps, homeomorphisms, and embeddings; connectedness and path connectedness; manifolds; basic topological spaces; Brouwer fixed-point theorem, covering spaces. Prerequisite: 22M:055 or consent of instructor.

22M:132 General Topology 3 s.h.
- Basic concepts of general topological spaces and continuous functions; topological structures defined via bases, subspaces, products, quotients; spaces of functions; compactness, connectedness, countability, separation properties; Urysohn’s lemma, applications to metrization and extensions of maps, infinite products and Tychonoff theorem; complete metric spaces; metric and uniform structures. Prerequisite: 22M:115 or 22M:130 or graduate standing or consent of instructor.

22M:140 Continuous Mathematical Models 3 s.h.
- Building and analyzing mathematical models involving differential equations for specific problems from engineering and the sciences; modeling project. Prerequisite: 22M:100 or consent of instructor.

22M:142 Nonlinear Dynamics and Chaos 3 s.h.
- Nonlinear differential equations, one- and two-dimensional flows, stability, phase plane, limit cycles, bifurcations, chaos, fractals, applications. Prerequisite: 22M:100 or consent of instructor.

22M:144 Introduction to Partial Differential Equations I 2.5 s.h.
- Basic concepts, elementary solution methods; first-order equations; linear second-order equations of elliptic, parabolic, hyperbolic type; separation of variables, Fourier series. Prerequisite: 22M:100 or equivalent.

22M:145 Introduction to Partial Differential Equations II 3 s.h.
- Elementary methods, topics such as Fourier series and expansions, Sturm-Liouville theory, complex variable methods. Prerequisite: 22M:144 or consent of instructor.

22M:150 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. Prerequisite: 22M:050.

22M:151 Discrete Mathematical Models 3 s.h.
- Case history approach to discrete models from various fields (e.g., genetics, psychology, health care, scheduling; construction, interpretation, analysis, simulation, testing of models: development of discrete mathematics. Prerequisite: 22M:027 or equivalent.

22M:152 Theory of Graphs 3 s.h.
- Connectivity properties, including Euler, Hamilton cycle problems; graph colorings, matchings; characterization of families of graphs such as trees, planar graphs, networks; graph algorithms. Prerequisite: grade of C- or higher in 22M:050. Same as 22C:167.

22M:160 Introduction to Differential Geometry I 3 s.h.
- Space curves, differentiable manifolds, vector and tensor fields, integration of forms, covariant differentiation, intrinsic geometry of surfaces. Prerequisites: 22M:028 and 22M:055, or 22M:056, or 22M:100, or consent of instructor.

22M:161 Introduction to Differential Geometry II 3 s.h.
- May include Riemannian geometry, rigidity theorems, minimal surfaces, connections, exterior Lie groups, relativity. Prerequisite: 22M:160 or consent of instructor.

22M:170 Numerical Analysis: Nonlinear Equations and Approximation Theory 3 s.h.
- Root finding for nonlinear equations; polynomial interpolation; polynomial approximation of functions; numerical integration. Prerequisites: 22M:027 and 22M:028, or 22M:040 and 22M:042, or 22M:050, or consent of instructor; and knowledge of computer programming. Same as 22C:170.

22M:171 Numerical Analysis: Differential Equations and Linear Algebra 3 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: 22M:027 and 22M:028, or 22M:040 and 22M:042, or 22M:050, or consent of instructor; and knowledge of computer programming. Same as 22C:170.

22M:174 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 optimization control theory, dynamic programming, calculus of variations. Prerequisite: 22M:100 or equivalent. Same as 22C:174.

22M:175 Finite Difference Method 3 s.h.
- Derivation of finite difference approximations; iteration methods; splitting methods; stability, convergence, error estimates; numerical solution of partial differential equations of elliptic, parabolic, hyperbolic, or mixed type. Prerequisites: 22M:170 and 22M:171, or consent of instructor.

22M:176 Finite Element Method 3 s.h.
- Variational principles. Finite element subspaces. hp-, p-, hp- versions, convergence analysis; shape functions, computation of stiffness matrices and local vectors; the effect of numerical integrations, post-processing, error control, adaptivity; applications. Prerequisites: 22M:170 and 22M:171, or consent of instructor.

- Design and implementation of computational linear algebra algorithms for high performance computers. Basic knowledge of a computer language and basic linear algebra required. Prerequisite: a linear algebra course and a numerical analysis course. Same as 22C:177.

22M:195 Current Issues in Mathematics Education 2-3 s.h.
- Philosophy and objectives, curricular problems, review and evaluation of current literature; special methods. Consent of instructor required. Same as 07B:235, 07B:237.

22M:196 Topics in Mathematics 3 s.h.
- Consent of instructor required.
Primarily for Graduate Students


22M:261 Differential Geometry II 3 s.h. Continuation of 22M:260. Prerequisite: 22M:260 or consent of instructor.


22M:271 Theoretical Numerical Analysis II 3 s.h. Continuation of 22M:270. Prerequisite: 22M:270 or consent of instructor.

22M:279 Convex Analysis 3 s.h. Convex sets, polar cones, functions, directions of recession and subgradients, separation of convex sets, Fenchel conjugates, Lagrangian principles, saddle-point theorems, duality, set-valued mappings and stability. Theory of convex function, applications to optimization. May be repeated. Consent of instructor required.

22M:305 Topics In Analysis 2-3 s.h. Measure theory, general topology. May be repeated. Consent of instructor required.

22M:313 Functional Analysis I 3 s.h. Locally convex topological vector spaces, duality, tensor products and nuclear spaces; Krein-Millman theorem, Choquet's theory; Banach and Hilbert spaces, infinite-dimensional manifolds. May be repeated. Consent of instructor required.

22M:314 Functional Analysis II 3 s.h. Continuation of 22M:313. Prerequisite: 22M:313 or equivalent.

22M:321 Topics in Applied Mathematics arr. Application of mathematics to other disciplines. May be repeated. Consent of instructor required.

22M:324 Topics in Partial Differential Equations 2-3 s.h. Regularity theory, non-linear analysis in partial differential equations, elliptic equations, fluid dynamics, harmonic analysis, conservation laws, other topics. May be repeated. Consent of instructor required.

22M:328 Topics in Logic 3 s.h. Theory of models, recursion theory, constructive mathematics, set theory, lattice theory. May be repeated. Prerequisite: 22M:221 or consent of instructor.

22M:330 Topics in Algebra 2-3 s.h. Theory of commutative rings and modules, modules and homological algebra. May be repeated. Prerequisite: 22M:206 or consent of instructor.

22M:335 Topics in Ring Theory 3 s.h. Theory of commutative rings and modules, modules and homological algebra. May be repeated. Prerequisite: 22M:206 or consent of instructor.

22M:340 Homological Algebra 3 s.h. Modules, tensor products, and homological functors. Categories, functors, homology functors. Projective and injective modules, derived functors, torsion and extension functors, homological dimensions. Prerequisite: 22M:206 or equivalent.

22M:360 Topics In Differential Geometry 3 s.h. Hodge decomposition theorem for elliptic operators on vector bundles over manifolds, the heat equation in this setting, applications to global geometry and topology, may include additional topics, e.g., global Riemannian geometry, index theory. May be repeated. Consent of instructor required.

22M:371 Topics in Numerical Analysis 3 s.h. May be repeated. Prerequisites: 22M:170 and 22M:171; or consent of instructor.

22M:383 Seminar: Commutative Ring Theory 1 s.h. May be repeated. Consent of instructor required.

22M:384 Seminar: Fourier Analysis 1 s.h. May be repeated. Consent of instructor required.

MEDEIVAL STUDIES

Certificate

The medieval studies certificate gives undergraduate students a way to link study in three or more disciplines into an organized investigation of a rich, varied historical period. The certificate can be pursued as an elective interest or be combined with focused study in one of a number of areas-for instance, art and art history; cinema and comparative literature; classics; English; French and Italian; history; literature, science, and the arts; music; philosophy; religion; Spanish and Portuguese; theatre arts; or women's studies. Courses applied toward the requirements of the medieval studies certificate also may be used to complete the College of Liberal Arts General

22M:385 Seminar: Representation Theory arr. May be repeated. Consent of instructor required.

22M:386 Seminar in Undergraduate Mathematics Education arr. May be repeated. Consent of instructor required.

22M:387 Seminar in Nonassociative Rings arr. May be repeated. Consent of instructor required.

22M:388 Seminar: Algebra arr. May be repeated. Consent of instructor required.


22M:392 Seminar: Topology arr. May be repeated. Consent of instructor required.

22M:393 Seminar: Mathematical Physics arr. May be repeated. Consent of instructor required.

22M:395 Seminar: Analysis arr. May be repeated. Consent of instructor required.


22M:398 Seminar: Numerical Analysis arr. May be repeated. Consent of instructor required.

22M:399 Reading Research arr. May be repeated. Consent of advisor required.
**Associated Courses**

The following courses are approved for the certificate. Students who wish to use a course not on this list to satisfy certificate requirements should request approval from the medieval studies certificate coordinating committee.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td><strong>Art and History</strong></td>
<td></td>
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<tr>
<td>01H:040 Introduction to Medieval Art</td>
<td>3 s.h.</td>
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<tr>
<td>01H:140 Early Medieval Art</td>
<td>3 s.h.</td>
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<tr>
<td>01H:141 Romanesque and Gothic Art</td>
<td>3 s.h.</td>
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<tr>
<td>01H:146 Italian Sculpture: 15th-16th Centuries</td>
<td>3 s.h.</td>
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<tr>
<td>01H:147 Italian Medieval Art</td>
<td>3 s.h.</td>
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<tr>
<td>01H:199 Topics in Art History (when topic is medieval)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>01Y:155 (108:155) Bookbinding: Historical Book Structures</td>
<td>3 s.h.</td>
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<tr>
<td><strong>Classic</strong></td>
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<tr>
<td>020:198 Medieval Latin</td>
<td>3 s.h.</td>
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<tr>
<td><strong>English</strong></td>
<td></td>
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<tr>
<td>008:060 Selected Works of the Middle Ages</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>008:071 Chaucer</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>008:077 Selected Authors (when content is appropriate)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>008:101 Literature and Culture of the Middle Ages</td>
<td>3-4 s.h.</td>
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<tr>
<td>008:144 (049:181) Medieval Drama</td>
<td>3 s.h.</td>
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<tr>
<td>008:160 Selected Themes in Literary Works (when content is appropriate)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>008:178 Old English: Beowulf</td>
<td>3 s.h.</td>
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<tr>
<td>008:193 Medieval Celtic Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>08L:132 (103:132) Elementary Old English</td>
<td>4 s.h.</td>
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<tr>
<td><strong>French</strong></td>
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<tr>
<td>009:107 Introduction to French Literature: Medieval and Renaissance</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>009:113 French Civilization</td>
<td>3 s.h.</td>
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<tr>
<td>009:252 French Literature to 1180</td>
<td>3 s.h.</td>
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<tr>
<td><strong>German</strong></td>
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<tr>
<td>013:017 German Heroic and Erotic Literature: Middle Ages</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>013:244 Middle High German Literature</td>
<td>3 s.h.</td>
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<tr>
<td><strong>History</strong></td>
<td></td>
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<tr>
<td>16E:051 Colloquium for History Majors (European) (when content is appropriate)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16E:110 Medieval Civilization</td>
<td>3 s.h.</td>
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<tr>
<td>16E:111 Medieval Intellectual History</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>16E:112 Medieval Intellectual History II: Scholasticism and Reformation</td>
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</tbody>
</table>

**Avant Garde **

- **Art and History**
- **Classic**
- **English**
- **French**
- **German**
- **History**
- **Languages**
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 fraction of contemporary biochemical research employs microbiological and immunological methods.

Some research areas in which both practical and theoretical advances are occurring include the study of microbial species and viruses that infect animals, including man, plants, and other microbes; the use of 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.

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. For the graduate with a bachelor’s degree in microbiology, positions are available in government, hospitals, public health laboratories, research laboratories, and industrial laboratories (food, dairy, chemical, pharmaceutical, and genetic engineering companies).

Students who continue beyond the bachelor’s degree have more advanced career opportunities in these same areas as well as college and university teaching.

Undergraduate Program

The College of Liberal Arts administers undergraduate programs and grants undergraduate degrees in microbiology. See the College of Liberal Arts introductory section of the Catalog for general information about undergraduate study at the University.

Bachelor of Science

Undergraduate students majoring in microbiology at The University of Iowa must complete the General Education Program of the College of Liberal Arts. They must complete a minimum of 21 semester hours in microbiology to obtain a B S. degree. Of these, at least 12 must be taken at The University of Iowa in courses numbered 061:147 and above. No more than 2 semester hours of 061:161 or 061:171 and 1 semester hour of 061:163 may be counted toward the 21-semester-hour requirement. Students may count 061:218, but not 061:220, toward this requirement.

Students may take microbiology courses more advanced than 061:157 General Microbiology only if they receive a grade of C or above in 061:157 (and have the instructor’s consent for specified courses). Mathematics and science courses required by the department for the B.S. degree may not be taken pass/nonpass.

Microbiology Seminar (061:163) should be taken for credit only once during the senior year. Students are encouraged to take the course for 0 semester hours during other semesters after they have taken 061:157.

Microbiology majors must take the following courses in addition to required microbiology courses.

- 002:010-011 Principles of Biology I-II 8 s.h.
- 004:013-014 Principles of Chemistry I-II 6 s.h.
- 004:016 Principles of Chemistry Lab 2 s.h.
- 004:121-122 Organic Chemistry I-II 6 s.h.
- 004:141 Organic Chemistry Laboratory 3 s.h.
- 029:011-012 College Physics 8 s.h.
- 099:120 Biochemistry and Molecular Biology I 3 s.h.
- 099: 130 Biochemistry and Molecular Biology II 3 s.h.

One of these:

- 22M:016 Calculus for the Biological Sciences 4 s.h.
- 22M:021 Calculus and Modeling I 4 s.h.
- 22M:025 Calculus I 4 s.h.
- 22M:035 Engineering Calculus I 4 s.h.
- 22M:045 Accelerated Calculus with Applications I 4 s.h.

In addition, the following courses are recommended.

- 08N:080 Nonfiction Writing 3 s.h.
- 22C:001 Survey of Computing 3 s.h.
- 22C:005 Problem Solving and Computing 3 s.h.

Four-Year Graduation Plan

The following checklists 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: 002:010; 004:013, 004:014, and 004:016; an approved calculus class; and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: 002:011; 004:121, 004:122, and 044:141; 061:157; and at least one-half of the semester hours required for graduation

Before the seventh semester begins: five more courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: 10-12 more semester hours 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

Microbiology majors who are members of the University Honors Program may enroll in the honors program in microbiology. Honors students must have a grade-point average of at least 3.20 overall and in microbiology courses. The program requires 25 semester hours of course work in microbiology, including 6 semester hours in 061:171 Honors Undergraduate Research in Microbiology, which constitutes an introduction to experimental research. At the end of the research, students present a written report. Students who successfully complete these requirements receive the B.S. degree with honors.

Minor

An undergraduate minor in microbiology requires at least 15 semester hours of credit in microbiology courses with a grade-point average of at least 2.00. Of these 15 semester hours, at least 12 must be taken at The University of Iowa in courses numbered 061:147 and above.

No more than 2 semester hours of 061:161 or 061:171 and 1 semester hour of 061:163 may be counted toward the 15-semester-hour requirement. Students may count 061:218, but not 061:220, toward this requirement.

Graduate Programs

The College of Medicine administers graduate programs in microbiology; graduate degrees are granted through the Graduate College. See the College of Medicine introductory section and the Graduate College section of the Catalog for general information about study in medicine and graduate study at the University.

The objectives of the graduate programs in microbiology are to help students become highly qualified in research and in teaching of microbiology.

Five areas are included in the program: pathogenic bacteriology, microbial genetics, immunology, microbial physiology, and animal virology. Several of these specialized areas involve interdisciplinary training both within and outside of the department, so students receive broad experience during their course of study. Interdisciplinary Ph.D. programs in genetics, immunology and molecular biology are also available.

Students working for the Ph.D. may obtain an M.S. during their graduate work or proceed directly toward the Ph.D.

All students admitted as candidates for advanced degrees are expected to assist in departmental teaching.

Incoming students choose a research supervisor who serves as chair of their advisory committee. This committee assists students in planning a program of study and, from time to time, reviews students’ progress.

The department cooperates with other departments in the various colleges on campus, affording ample opportunity for students to avail themselves of diverse course offerings, seminars, and research programs. For example, courses
and seminars in clinical laboratory microbiology, immunology, genetics, cellular and molecular biology, biocatalysis/biotechnology, and electron microscopy are taught on an interdepartmental basis.

**Master of Science**

Candidates for the M.S. are required to take a minimum of 12 semester hours of microbiology courses in three of the five different subdisciplines available in microbiology. Students may substitute a course taken previously (at The University of Iowa or elsewhere) for the course requirements, upon obtaining approval from the M.S. committee. Additional course requirements or selections 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.

**Doctor of Philosophy**

The minimum course requirements for the Ph.D. are one course in each of four subdisciplines (of the five subdisciplines available in microbiology) or 15 semester hours of core courses in two different areas. Students may substitute a course taken previously (at The University of Iowa or elsewhere) for the course requirements, upon obtaining approval from the Ph.D. committee. Students also must pass a comprehensive examination and write a thesis based on their own research. The thesis must be defended satisfactorily in an oral examination.

**Admission**

Prospective graduate students should become familiar with the general admission requirements of the Graduate College. Departmental requirements include a review and formal vote by the faculty before students are admitted. Before beginning graduate work, students must have completed courses in biological sciences, chemistry (inorganic and organic), mathematics including calculus, and physics. Students admitted without the above course work must take it during the first year of graduate school. Students should have at least a 2.70 grade-point average to be admitted to the graduate program in microbiology. Preference is given to students applying for the Ph.D. program.

**Facilities**

The department shares the Bowen Science Building with the Departments of Anatomy and Cell Biology, Biochemistry, Pharmacology, and Physiology. Laboratory space and modern equipment are available for teaching and research.

**Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>061:104</td>
<td>Principles of Infectious Diseases</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>061:112</td>
<td>Health Sciences Microbiology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>061:147</td>
<td>Survey of Immunology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:157</td>
<td>General Microbiology</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>061:160</td>
<td>Microbial Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:161</td>
<td>Undergraduate Research in Microbiology</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>061:162</td>
<td>Seminar: Microbiology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>061:166</td>
<td>Introduction to Animal Viruses</td>
<td>2.4 s.h.</td>
</tr>
<tr>
<td>061:170</td>
<td>Microbial Genetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:175</td>
<td>Microbial Biotechnology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:201</td>
<td>Immunology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:202</td>
<td>Immunology II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:216</td>
<td>Microbial Physiology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>061:217</td>
<td>Graduate Immunology Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>061:220</td>
<td>Advanced Microscopy Techniques</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:223</td>
<td>Topics: Molecular Pathogenesis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:225</td>
<td>Graduate Microbial Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:245</td>
<td>Graduate Microbial Genetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:246</td>
<td>Seminar: Microbiology</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>061:263</td>
<td>Patient's Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>061:268</td>
<td>Biology and Pathogenesis of Viruses</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:270</td>
<td>Graduate Microbial Genetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:271</td>
<td>Graduate Microbial Genetics Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:275</td>
<td>Perspectives in Biotechnology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:277</td>
<td>Bacterial Diversity</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>
The Military Science Program administers the Army ROTC program. Although it does not grant degrees, its courses provide students with education in the role of the military and instruction in leadership and management. Army science gives students who want to serve on active or reserve status in the armed forces the opportunity to earn commissions as Army officers. It also administers financial assistance and merit scholarships from the U.S. government to qualified students.

Courses are open to all students. Course credit that may be applied toward graduation varies. In the College of Liberal Arts, up to 20 semester hours may be applied toward graduation.

**Undergraduate Program**

**BASIC COURSE**
The ROTC basic course is designed primarily for first-year and sophomore students. It provides the fundamentals of leadership and management and introduces the roles of the military as affected by national and foreign policy. Students incur no obligation to the military for participation in the basic course. The following courses satisfy the basic course requirement.

**023:098 Leadership Laboratory** 0 s.h.

**023:091 Officership in Today’s Army** 1 s.h.

**023:093 Military Skills and Communication** 2 s.h.

The basic course requirements may be taken over a one-year or two-year period or during a six-week paid camp during the summer. Students with prior military training normally are exempt from the basic course requirements.

**ADVANCED COURSE**
The ROTC advanced course, though open to any student who meets the prerequisites, is designed primarily for students 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 students in the advanced course incur an obligation with the military that can be satisfied in the Active Army, Army Reserve, or Army National Guard.

A tax-free grant of $200 per month is provided to students who agree to serve in the armed forces. Additional financial assistance may be provided through participation in training with an Army Reserve or Army National Guard unit.

To enter the advanced course, students must satisfy the basic course requirements, be academic juniors, and have a grade-point average of at least 2.00. A five-week paid camp, normally completed the summer before the senior year, is required for all students wishing to become Army officers. The following courses are the academic requirements for completion of the advanced course.

**023:095 Advanced Military Fitness Training** (concurrent with 023:117) 1 s.h.

**023:116 Challenges of Leadership** 3 s.h.

**023:117 Small Unit Tactics** 3 s.h.

**023:118 Military Management** 3 s.h.

**023:119 Service Orientation** 3 s.h.

**ADDITIONAL COURSE WORK**

Students desiring a commission must complete one course from each of the following categories. These courses may be the same as those used to complete the College of Liberal Arts General Education Program. Students earning a degree in nursing or engineering normally are exempt from these requirements.

**Written Communications**

010:002 Rhetoric II 4 s.h.

010:003 Accelerated Rhetoric (or equivalent) 4 s.h.

**Human Behavior**

026:061 Introduction to Philosophy 3 s.h.

026:102 Introduction to Ethics 3 s.h.

030:001 Introduction to American Politics 3 s.h.

031:001 Elementary Psychology 3 s.h.

032:002 Religion and Society 3 s.h.

034:001 Introduction to Sociology: Principles 3 s.h.

045:001 American Values 3 s.h.

113:003 Introduction to the Study of Culture and Society 4 s.h.

113:010 Anthropology and Contemporary World Problems 3 s.h.

**Math Reasoning**

07P:025 Elementary Statistics and Inference 3 s.h.

22M:001 Basic Algebra I (no degree credit) 3 s.h.

22M:002 Basic Algebra II (no degree credit) 3 s.h.

22M:003 Basic Geometry (no degree credit) 3 s.h.

22M:010 Finite Mathematics 4 s.h.

22M:011 Introduction to Calculus with Applications 4 s.h.

22M:017 Calculus and Matrix Algebra for Business 4 s.h.

22M:025 Calculus I 4 s.h.

22S:002 Statistics and Society 3 s.h.

22S:008 Statistics for Business 4 s.h.

026:036 Principles of Reasoning 3 s.h.
MOLECULAR BIOLOGY
Graduate degree: Ph.D. in Molecular Biology
The Ph.D. program in molecular biology is interdepartmental, involving members of the Departments of Biochemistry, Biological Sciences, Internal Medicine, Microbiology, Pathology, Pediatrics, Pharmacology, and Physiology and Biophysics. Faculty members and students in the College of Liberal Arts participate in the Molecular Biology Program. For information about the program, see the Graduate College section of the Catalog.

MUSEUM STUDIES
Interim director: Julia Golden
Assistant professor emeritus: George D. Schrimer
Adjunct assistant professor: Mille Caldecott
Adjunct instructors: Julia Golden, Bruce A. Scherting
Web site: http://www.uiowa.edu/-nathist

Iowa’s Museum Studies Program is the oldest of more than 100 university- and college-based museum curricula in the United States, having offered courses continuously since 1910. Its students have become directors, curators, educators, and exhibit specialists in museums throughout the country. The program offers courses that provide a fundamental background in the history, organization, function, and management of museums, affording special emphasis on exhibit design, collection management, and education outreach development.

A major in one of the natural sciences (biological sciences or geology), anthropology, science education, art history, American studies, or history is recommended for students preparing for museum careers. Courses are offered during the summer session as well as during the regular academic year. These elective courses count as credit toward any undergraduate degree. An area of specialization (administration, curation, exhibit design and graphics, educational programming) also can be tailored to the student’s museum career objective with appropriate elective courses in other departments.

Courses
024:000 Cooperative Education Internship 0 s.h.
024:102 Introduction to Museology 3 s.h.

Museum Facilities
The museum studies program has access to several excellent museum facilities. The Museum of Natural History shares its collections, galleries, and exhibit production facilities with the Museum Studies Program. Founded in 1858, it is the oldest university museum west of the Mississippi River. It houses exhibits on North American and Iowa geology, biological sciences, and Native American cultures. Students can gain first-hand experience through supervised participation in its programs, as well as in other departmental programs at The University of Iowa and at other institutions.

The University of Iowa Museum of Art houses significant collections of more than 9,000 objects and several outstanding collections, among them the Stanley Collection of African art, the Maurice Lasansky print collection, and the Elliott Collection of pre-Columbian and 19th and 20th-century art. The Historic building that was Iowa’s first territorial and state capitol from 1842 to 1857 has become the Old Capitol Museum. The University Hospitals and Clinics houses the Medical Museum, with artifacts and displays on the history of medicine. Not only are these resources important to museum students, they enrich campus life by providing added dimension to the learning experience. Museum studies students also can learn from a number of smaller collections that are available on campus and in the Iowa City area.

Courses
024:000 Cooperative Education Internship 0 s.h.
024:102 Introduction to Museology 3 s.h.

024:104 Principles of Exhibit Design 2 s.h.
Conceptual design and execution of museum exhibits and galleries, including planning and drafting; uses of space, objects, composition, color; graphics, lighting, typography; evaluation strategies. Prerequisite: 024:102 or consent of instructor.

024:106 Museum Laboratory Methods 2 s.h.
Techniques used to prepare classroom teaching materials and museum exhibit accessories; instruction in casting, mold-making, and modeling procedures used in replication or preservation of archaeological, historical, geological, or biological materials. May be repeated.

024:113 Introduction to Conservation of Museum Objects 2 s.h.
Theory and methods of museum collections conservation; handling, exhibition, repository preservation; emphasis on composition of museum objects and how objects react with their exhibition and storage environments.

024:120 Collection Care and Management 2 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 012:120.

024:146 Organization of Information Resources 1 s.h.
Same as 012:122.

024:150 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. May be repeated. Prerequisite: 024:102, 024:104, or 024:120.

024:160 Role of Cultural Institutions in America 3 s.h.
Mission, organization, and financing of diverse cultural organizations; government policies and financial support, private support, earned income, special events, advocacy organizations, marketing. Prerequisite: 024:102 or consent of instructor. Same as 025:161, 049:110.

024:180 Museum Internship arr.
Working experience in functions, departments, programs of the sponsoring museum; relation to museum’s overall mission and museum field in general.

MUSIC
Director: Kristin Thelander
Associate directors: David Gier, Maurita Murphy Mead
Professors: Elizabeth Aubrey, Lowell Cross, Delbert Disselboist, Diana Gannett, Kate Geller, David Greenhow, William LaRue Jones, Leopold La Fosse, Maurita Murphy Mead, David Nelson, Kenneth Phillips, Kristin Thelander, Ingo Tinze, Uriel Teacher, Mark Weiger, Myron D. Welsh, Charles Windt
Associate professors: Richard J. Bloesch, Tadeu Coelho, Don Coffman, Katherine Ebere, Michael Eckert, David Gier, David K. Gomper, Kevin Kastens, Rene Lecona, Roberta Marvin, Dan Moon, John Rapson, Christie Rutledge, Timothy Stalter, Sally Stunkel, Stephen Swanson, Carole Thomas, Robert Yeats
Assistant professors: Gregory Barnett, Michael Buchler, Benjamin Coelho, Lawrence Fritts, Christine Getz, Rachel Joselson, Ksenia Nosikova, T.M. Scruggs, Annette-Barbara Vogel
Adjunct assistant professor: Susan Jones
Clinical assistant professor: Mary Adamek
Adjunct instructor: Barbara Deur
Undergraduate degrees: B.A. in Music; B.M. Undergraduate nondegree program: minor in Music
Graduate degrees: M.A., M.F.A., Ph.D. in Music; D.M.A. Graduate nondegree program: certificate in Sacred Music
Web site: http://www.uiowa.edu/-music
The School of Music and the Departments of Dance and Theatre Arts belong to the University's Division of Performing Arts. For information about the division, see “Division of Performing Arts” in this section of the Catalog.

A primary element in a fine arts community of international repute, The University of Iowa School of Music has long been recognized as one of the excellent university-based schools of music in the United States.

The school's on-campus enrollment of approximately 450 students majoring in music 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 area of specialization and scholars of international distinction. Faculty ensembles in residence include the Iowa Wind 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 curricula 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. See “Music for Nonmajors,” below.

The graduate curricula are designed primarily as preparation 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 published standards of the National Association of Schools of Music.

Undergraduate Programs

The school offers Bachelor of Arts and Bachelor of Music degrees. Candidates for the B.M. degree may count more than 50 semester hours of course work in music toward the 124 semester hours required for graduation; candidates for the B.A. may not. Areas of concentration for the B.M. degree are composition, jazz studies, music therapy, and performance. B.A. program concentrations are composition, music history, and performance.

Teacher licensure may be earned in music education (B.M.). Professional certification is available through the music therapy (B.M.) program.

All undergraduate enrollments require School of Music approval. Entering first-year and transfer students who plan to major in music are expected to audition either in person or by tape recording in advance of registration. Students seeking admission to the composition or music history program should also submit examples of creative and/or written work (see “Composition Concentration” and “Music History Concentration” in this section of the Catalog).

Transfer students must consult with a representative from the theory area to determine their level of competence in that area.

Bachelor of Music

GENERAL COURSE REQUIREMENTS

All Bachelor of Music candidates must complete the College of Liberal Arts General Education Program as well as the following School of Music course requirements.

025:001 Fundamentals of Music for Majors (or successful completion of the undergraduate theory examination) 3 s.h.
025:002-005 Musicanship and Theory I-IV 16 s.h.
025:071-072 Group Instruction in Piano I-II (or successful completion of proficiency exams I and II) 2 s.h.

Registration in Group Instruction in Piano I-II is corequisite with 025:002-005 Musicanship and Theory I and II, unless exempted by proficiency exam. Transfer students should complete this requirement in their first year of residence, unless exempted by proficiency exam.

025:074 Recital Attendance 7 s.h.

Seven semesters of 025:074 are required for all candidates for the B.M. degree, 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.

025:107 Techniques of Conducting 2 s.h.
025:144 History of Music I 3 s.h.
025:146 History of Music II 3 s.h.
025:154 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” for upper-level course approval. Entering students substitute 025:099 Bachelor’s Thesis Project for the senior recital. The senior recital, research project, or thesis must be completed at The University of Iowa.

One of these:
025:104 Music of Latin America and the Caribbean 3 s.h.
025:141 History of Jazz 3 s.h.
025:178 Music, Culture, and Identity 3 s.h.
025:179 Nationalism and Music 3 s.h.

At least 4 semester hours chosen from these:
025:101 Introduction to Improvisation 3 s.h.
025:102 Jazz Improvisation 2 s.h.
025:117 Arranging for Band 2 s.h.
025:118 Jazz Theory 2 s.h.
025:145 Counterpoint Before 1600 3 s.h.
025:147 Counterpoint After 1600 3 s.h.
025:148 Instrumentation 2 s.h.
025:153 Keyboard Harmony 2 s.h.
025:155 Composition 2 s.h.
025:157 Orchestration 2 s.h.
025:243 Advanced Jazz Improvisation 2 s.h.
025:244 Transcription 2 s.h.
025:247 Analysis of Music Literature 3 s.h.
025:249 Analysis of Tonal Music 3 s.h.
025:256 Analysis of Music Literature Special Topics 3 s.h.

APPLIED MUSIC

Four years of applied music are required. Instruction is separated into 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 in the student's areas of instruction, usually by a jury examination in the area. The eighth semester of applied music may be waived for students who are enrolled in the music education program and are student teaching. Students are allowed a maximum of 6 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.

Music therapy students who complete a senior research project rather than a senior recital are required to take three years of applied music.

ENSEMBLE PARTICIPATION

Eight semesters of major ensemble participation are required. Students normally enroll in major ensemble participation during consecutive semesters, beginning early in their degree work, to ensure completion of the requirement in a timely manner. 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 the Symphony Band/Concert Band/University Band. Voice students participate in Camerata Singers, University Choir, Kantorei, and/or University Chorale. Keyboard students may substitute accompanying for major ensemble participation for two semesters during their junior and/or senior years, with their major applied teacher’s consent. Composition and music history students may, with their advisor’s consent, substitute other ensembles.

Music therapy students who complete a senior research project rather than a senior recital are required to complete 6 semester hours of major ensemble participation.

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 ensemble director(s) involved, the major teacher, and the associate director for undergraduate studies.

Major ensembles are as follows.

025:142 Camerata Singers 1 s.h.
025:181 University Choir 1 s.h.
025:185 Kantorei 1 s.h.
025:191 University Chorale 1 s.h.
025:192 Orchestra 0-1 s.h.
025:194 Symphony Band/Concert Band/University Band 0-1 s.h.

BECAMS

Students may take advanced electives in performance (including chamber music and piano accompanying), theory, composition, cultural diversity, music education, music therapy, music history, music literature, conducting, and orchestra.
Performance Concentrations
A performance concentration is available in each of the orchestral areas—strings, brass, woodwinds, and percussion—and in voice and keyboard. Students must take at least 17 additional semester hours beyond the School of Music general course requirements. This course work is chosen from a list of electives unique to each performance area. Course listings for each of the respective areas are available from the School of Music academic office.

Jazz Studies Emphasis
Students are admitted to this program only by audition, which occurs after they complete the freshman year. When admitted, they are assigned to the jazz studies adviser in addition to their regular faculty adviser.

Senior recital and recital attendance requirements are the same as those for the B.M. degree. Course requirements are the same as those for the B.M. degree plus an additional 22 semester hours of jazz courses. Students in the jazz studies emphasis program must attend a weekly jazz seminar.

Music Therapy
Admission to the program in music therapy is based on successful completion (grade of C+ or higher) of 025:114 Orientation to Music Therapy. In addition to the core courses in music therapy listed below, specific courses are required in biological sciences, sociology, abnormal psychology, social psychology, and music.

A six-month internship in an approved off-campus clinical facility is required before completion of the degree. Following successful completion of the internship, students are eligible to sit for the board certification examination of music therapy. To increase their job opportunities in the education sector, students are encouraged to complete music teacher licensure requirements. Complete information on the program is available in the music education office.

Specific course requirements for music therapy are as follows.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>078:144 Psychology of Music</td>
<td>2</td>
</tr>
<tr>
<td>078:149 Behavioral Research in Music</td>
<td>2</td>
</tr>
<tr>
<td>025:017 Secondary Performance-Voice (2 s.h. required)</td>
<td>1</td>
</tr>
<tr>
<td>025:071 Group Instruction in Piano I</td>
<td>1</td>
</tr>
<tr>
<td>025:072 Group Instruction in Piano II</td>
<td>1</td>
</tr>
<tr>
<td>025:073 Group Instruction in Piano III</td>
<td>1</td>
</tr>
<tr>
<td>025:074 Recital Attendance (four semesters required)</td>
<td>4</td>
</tr>
<tr>
<td>025:091 Music Foundations in Therapy I</td>
<td>2</td>
</tr>
<tr>
<td>025:092 Music Foundations in Therapy II</td>
<td>2</td>
</tr>
<tr>
<td>025:094 Music Therapy Practicum (three semesters, for 1, 2, and 2 s.h., respectively)</td>
<td>5</td>
</tr>
<tr>
<td>025:096 Music Techniques in Special Education and Recreation</td>
<td>3</td>
</tr>
<tr>
<td>025:114 Orientation to Music Therapy</td>
<td>2</td>
</tr>
<tr>
<td>025:138 Music Therapy Techniques: Atypical Children</td>
<td>3</td>
</tr>
<tr>
<td>025:139 Music Therapy Techniques: Adult Clients</td>
<td>3</td>
</tr>
<tr>
<td>025:140 Internship in Music Therapy</td>
<td>2</td>
</tr>
<tr>
<td>025:117 Arranging for Band</td>
<td>2</td>
</tr>
<tr>
<td>025:148 Instrumentation</td>
<td>2</td>
</tr>
<tr>
<td>025:098 Senior Project in Music Therapy</td>
<td>1</td>
</tr>
<tr>
<td>025:154 Senior Recital</td>
<td>1</td>
</tr>
<tr>
<td>Music therapy students who elect the senior recital option must take four years of applied music and attain upper-level status; they also must take 8 semester hours of major ensemble participation. Those who elect the senior research project option must take three years of applied music, 6 semester hours of major ensemble, and two additional courses, as follows.</td>
<td></td>
</tr>
<tr>
<td>025:147 Counterpoint After 1600</td>
<td>3</td>
</tr>
<tr>
<td>or 025:155 Composition</td>
<td>2</td>
</tr>
<tr>
<td>025:101 Introduction to Improvisation</td>
<td>3</td>
</tr>
<tr>
<td>025:118 Jazz Theory</td>
<td>2</td>
</tr>
</tbody>
</table>

Composition Concentration
Applicants should submit examples of creative work for evaluation by the composition faculty. Upon admission to the program, students are assigned a faculty adviser. Accomplished students may gain admission as entering freshmen; in such cases the approval of submitted work waives the necessity of a performance audition. If the composition faculty advises postponement of admission until further study has been undertaken, the entering freshman or transfer student must audition to be admitted to the School of Music.

Students fulfill the general requirements of the Bachelor of Music degree as stated earlier in this section of the Catalog. Beyond these requirements, composition students must complete additional course work in composition, music theory, and electives. An appropriate plan of study is designed by students in consultation with their adviser.

The Bachelor’s Thesis (025:099) 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 on regularly scheduled School of Music recitals.

Teacher Licensure (Music Specialist)
Students seeking teacher certification must be admitted to the School of Music by auditioning for a performance studio. Before taking required professional education courses, undergraduate students must be admitted to the College of Education’s teacher education program (TEP). Guidelines for admission and licensure are listed under “Curriculum and Instruction” in the College of Education section of the Catalog.

In addition to the B.M. requirements in music, TEP students must take College of Liberal Arts General Education courses that fulfill licensure requirements. They also must take music education methods courses and professional education courses.

The following courses are required of all TEP students.

- One college-level math course (excluding 22M:001, 22M:002, or 22M:003)
- One biological science course
- One physical science course
- One social science course
- One behavioral science course

Additional course work as follows.

STRING STUDENTS
The following course are required.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>07E:145 Methods and Materials: Elementary School General Music</td>
<td>3</td>
</tr>
<tr>
<td>07S:142 Methods and Materials: Secondary School General Music</td>
<td>3</td>
</tr>
<tr>
<td>07E:192 Special Area Student Teaching</td>
<td>6</td>
</tr>
<tr>
<td>07S:096 Introduction and Practicum: Music</td>
<td>2</td>
</tr>
<tr>
<td>07S:139 Child and Adolescent Voice Production</td>
<td>2</td>
</tr>
<tr>
<td>07S:143 Instrumental Techniques (one each of brass, woodwind, and percussion)</td>
<td>3</td>
</tr>
<tr>
<td>07S:145 Instrumental Conducting</td>
<td>2</td>
</tr>
<tr>
<td>07S:150 String Methods and Materials</td>
<td>4</td>
</tr>
<tr>
<td>07S:187 Seminar: Curriculum and Student Teaching</td>
<td>1</td>
</tr>
<tr>
<td>07S:191 Observation and Laboratory Practice in the Secondary School</td>
<td>6</td>
</tr>
<tr>
<td>Secondary Performance Instruction for Majors (violin and viola majors take one year of 025:023 Cello, cello and bass majors take one year of 025:021 Violin)</td>
<td>2</td>
</tr>
<tr>
<td>025:100 Class Strings</td>
<td>1</td>
</tr>
</tbody>
</table>

BRASS, WOODWIND, AND PERCUSSION STUDENTS
Brass, woodwind, and percussion students in the TEP program participate in marching band for one semester. Exceptions to this policy must be approved by the music area head.

The following courses are required.

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>07E:145 Methods and Materials: Elementary School General Music</td>
<td>3</td>
</tr>
<tr>
<td>07S:142 Methods and Materials: Secondary School General Music</td>
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<tr>
<td>07E:192 Special Area Student Teaching</td>
<td>6</td>
</tr>
<tr>
<td>07S:096 Introduction and Practicum: Music</td>
<td>2</td>
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<tr>
<td>07S:138 Practicum: Band Instrument Care and Repair</td>
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<tr>
<td>07S:139 Child and Adolescent Voice Production</td>
<td>2</td>
</tr>
<tr>
<td>07S:140 Band Methods and Materials</td>
<td>3</td>
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<tr>
<td>07S:143 Instrumental Techniques</td>
<td>7</td>
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<tr>
<td>07S:145 Instrumental Conducting</td>
<td>2</td>
</tr>
<tr>
<td>07S:187 Seminar: Curriculum and Student Teaching</td>
<td>1</td>
</tr>
<tr>
<td>07S:191 Observation and Laboratory Practice in the Secondary School</td>
<td>6</td>
</tr>
<tr>
<td>Secondary Performance Instruction for Majors</td>
<td>2</td>
</tr>
<tr>
<td>025:100 Class Strings</td>
<td>1</td>
</tr>
<tr>
<td>025:182 Marching Band Techniques</td>
<td>1</td>
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<tr>
<td>025:193 Marching Band</td>
<td>1</td>
</tr>
<tr>
<td>025:196 Jazz Band Techniques</td>
<td>2</td>
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</tbody>
</table>
VOCAL AND KEYBOARD STUDENTS

The following courses are required.

07E:145 Methods and Materials: Elementary School General Music 6 s.h.
07E:192 Special Area Student Teaching 3 s.h.
073:096 Introduction and Practice: Music 2 s.h.
07S:139 Child and Adolescent Voice Production 2 s.h.
07S:142 Methods and Materials: Secondary School General Music 3 s.h.
07S:143 Instrumental Techniques (one each of brass, woodwind, and percussion) 3 s.h.
07S:147 Choral Methods 3 s.h.
07S:148 Choral Conducting and Literature 3 s.h.
07S:191 Observation and Laboratory Practice in the Secondary School 6 s.h.
025:100 Class Strings 1 s.h.


KEYBOARD STUDENTS (NONVOCAL)

Keyboard students who elect to teach in the nonvocal area must complete the requirements in either the brass-woodwind-percussion or string areas.

Bachelor of Arts

The Bachelor of Arts degree in music is a nonprofessional degree for students who have strong abilities and interest in music but are not planning on a career as a musician. It is recommended for students who want to combine a major in music with another major in a liberal arts discipline. 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 like American studies and literature, science, and the arts. Some students combine a B.A. in music with undergraduate preparation to study law or medicine.

Students who seek the B.A. may choose an emphasis in performance, music history, or composition. The performance emphasis requires 39 semester hours in music course work and is offered in all areas of performance listed under the B.M. degree. The music history emphasis requires 50 semester hours in music course work, as does the composition emphasis. Students interested in music therapy, music education, or jazz cannot earn a B.A.; these emphasis areas are offered only for the B.M. degree.

Specific applied music and ensemble requirements for each B.A. emphasis area are available from the School of Music academic office. Students may enroll in lower-level applied instruction for a maximum of six semesters (not including summer). Those who wish to continue lessons for more than six semesters must be approved for upper-level applied instruction or must register under the nonmajor category (music majors may not count nonmajor instruction toward the elective requirement). String students participate in orchestra; wind and percussion students participate in bands; and voice students participate in choral organizations.

Any student who wants to request adjustment of the ensemble requirement must submit his or her request in writing to a review committee consisting of the ensemble director(s) involved, the major teacher, and the associate director for undergraduate studies.

Major ensembles are listed under "Bachelor of Music," "Ensemble Participation."

All B.A. students must complete the College of Liberal Arts General Education Program and satisfy all other collegiate requirements. Specific requirements for each emphasis area are available from the School of Music and the Academic Advising Center.

Music History Concentration

All applicants should submit examples of written work (term paper, senior thesis) for evaluation to the music history faculty. Upon acceptance to the music history program, students who already are enrolled as music majors are assigned a faculty adviser in music history. Incoming first-year students, in addition to being accepted by the music history area, must pass a studio audition before they can be admitted to the School of Music. All students, in consultation with their adviser, design an appropriate plan of study, which includes assignment to an applied studio.

Bachelor’s Thesis (025:099) replaces the recital. It consists of a major research paper, approved by a committee of three faculty members.

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 semester hours in applied music and 1 semester hour in a major ensemble each semester.

Four-year graduation plan agreements for music therapy and music education are not available.

Bachelor of Arts

The bachelor of arts degree with a performance concentration requires 39 semester hours earned in School of Music courses. The B.A. with a music history or composition emphasis requires 50 semester hours earned in School of Music courses.

Before the third semester begins: 15-18 semester hours of course work in the major including 025:002, 025:003, 025:071, and 025:072; and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least 23-32 semester hours of course work in the major, including 025:004 and 025:005; and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least 33-46 semester hours of course work in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: at least 36-50 semester hours 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 50 semester hours earned in School of Music courses toward the 124 semester hours required for the B.M. degree.

Before the third semester begins: 18 semester hours of course work in the major, including 025:002, 025:003, 025:071, and 025:072 and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least 34 semester hours of course work in the major and at least three-quarters of the semester hours required for graduation

Before the seventh semester begins: at least 50 semester hours of course work in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: at least 56 semester hours 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

First-year and sophomore music majors with an interest in scholarship and a grade-point average of at least 3.20 are invited to become members of the University Honors Program. They also may take part in the School of Music’s honors program. Some entering first-year students are invited to join on the basis of their high school record and ACT scores.

Throughout undergraduate residence, honors music students may enroll in honors sections of courses in the school and in the College of Liberal Arts. They also may seek honors designation for any course, with the instructor’s consent. All honors course work must be approved by the School of Music honors adviser.
Honors students with junior or senior standing may undertake work leading to the bachelor's degree (B.M. or B.A.) with honors. Graduation with honors is awarded after completion of 6-8 semester hours of honors work, students must earn a minimum of 3 semester hours in 025:097 Honors in Music. Honors projects for which credit is given in 025:097 include honors performances (solo and/or ensemble); honors compositions (or transcriptions, orchestrations, arrangements); and honors essays, research papers, editions, or translations. A combination of at least two of these types of projects is required. None of the projects may duplicate projects assigned in other courses, nor may they be required for graduation (e.g., 025:154 Senior Recital).

Honors students in music are encouraged to take graduate-level courses. Advanced courses in music history, music theory, and languages are particularly recommended. An honors committee appointed by the adviser and the student's faculty sponsor evaluates the student's work.

Consult the music honors adviser for more information.

National Honor Society

The School of Music sponsors a chapter of Pi Kappa Lambda, the national music honor society. Students of exceptional ability are recommended for membership by faculty members. For more information, consult the School of Music honors adviser.

Minor

Students may minor in music by completing 15 semester hours in the School of Music, 12 of which must be taken at The University of Iowa in advanced courses. Lower-level music lessons (025:040 through 025:058) and musicianship and theory classes (025:002 through 025:005) are considered advanced for the minor. Auditions are required for lower-level applied music study in the minor. Consult the department for a complete list of requirements for the music minor.

Financial Aid

A number of music activity scholarships are available to qualified undergraduate music majors. For information, write to the School of Music.

Graduate Programs

Students may work toward a Master of Arts, Master of Fine Arts, Doctor of Philosophy, or Doctor of Musical Arts. The school also offers a theory pedagogy minor.

Before applicants can be considered for admission to any of the graduate programs, they must submit supporting materials in their indicated area of concentration. Information about specific admission and curriculum requirements for each area is available from the academic office of the School of Music.

GENERAL REQUIREMENTS

Before they register, entering graduate students must take two School of Music advisory examinations: one in music theory, and one in music history and literature. These examinations are given at the beginning of fall and spring semesters on the two days (except Sunday) immediately preceding the opening of classes, and at the beginning of the summer session on the day (except Sunday) immediately preceding the opening of classes. A leaflet describing the general content of these tests is available from the School of Music academic office. General graduate admission, degree, and examination requirements are stated in the Graduate College section of the Catalog.

ENSEMBLE PARTICIPATION

Candidates for the Master of Arts and Master of Fine Arts (performance tracks) and Doctor of Musical Arts in performance and pedagogy 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. For a list of major ensembles, see "Ensemble Participation" under "Bachelor of Music" in this section of the Catalog.

Keyboard majors may substitute accompanying for major ensemble participation, at their major applied teacher's discretion. Theory, composition, musicology, music education, and music therapy majors have no major ensemble requirement.

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 of graduate studies.

Master of Arts

The Master of Arts is offered in performance, including conducting, and in composition, music theory, musicology, music therapy, music education, and opera theater direction. Performance majors present a public recital in lieu of a written thesis. The Master of Arts without thesis is offered in music education and as an option in music therapy. Both thesis/recital and nonthesis degrees require a minimum of 30-33 semester hours of postbaccalaureate study. All M.A. programs must include the following requirements. (Music therapy requirements differ; consult the music therapy program for information.)

025:321 Introduction to Graduate Study in Music 2 s.h.

Music Theory

Students must earn 6 semester hours.

025:240 Analytical Techniques (unless exempt through advisory examination) 3 s.h.

Students exempted from 025:240 through the advisory examination in music theory must substitute an additional theory elective from the following:

025:145 Counterpoint before 1600 3 s.h.
025:147 Counterpoint after 1600 3 s.h.
025:247 Analysis of Music Literature 1900-Present 3 s.h.
025:249 Analysis of Tonal Music 3 s.h.
025:256 Analysis of Music Literature: Special Topics 3 s.h.

One elective chosen from these:
025:145 Counterpoint Before 1600 3 s.h.
025:147 Counterpoint After 1600 3 s.h.
025:241 History of Music Theory I 3 s.h.
025:242 History of Music Theory II 3 s.h.
025:247 Analysis of Music Literature 1890-Present 3 s.h.
025:249 Analysis of Tonal Music 3 s.h.
025:256 Analysis of Music Literature: Special Topics 3 s.h.
025:311 Theory and Analysis of Atonal Music 3 s.h.
025:312 Schenkerian Theory and Analysis 3 s.h.

Music History

Students must earn 6 semester hours.

025:301 Advanced History and Literature of Music I 3 s.h.
025:302 Advanced History and Literature of Music II 3 s.h.

Students exempted from 025:301 and/or 025:302 through the advisory examination in music history must substitute a music history course from the following list for each of the exemptions.

025:303 Medieval Music 3 s.h.
025:304 Renaissance Music 3 s.h.
025:305 Seventeenth-Century Music 3 s.h.
025:306 Eighteenth-Century Music 3 s.h.
025:307 Nineteenth-Century Music 3 s.h.
025:308 Music 1900-1945 3 s.h.
025:309 Music 1945-Present 3 s.h.
025:310 American Music 3 s.h.
025:313 Major Composers 3 s.h.
025:314 Genres of Music 3 s.h.
025:319 Foundations of Ethnomusicology 3 s.h.
025:323 Medieval Music Notations 3 s.h.
025:324 Renaissance Music Notations 3 s.h.
025:330 Seminar in Musicology 3 s.h.
025:331 Performance Practice; of Medieval and Renaissance Music 3 s.h.
025:332 Performance Practices of Seventeenth and Eighteenth-Century Music 3 s.h.

Master of Fine Arts

The M.F.A. is for students of superior ability in instrumental or vocal performance. It requires a minimum of 60 postbaccalaureate semester hours, to include at least two full-length recitals or programs (025:401 M.F.A. Thesis), for a maximum of 8 semester hours of credit.

Students may earn a Master of Arts degree while working toward the Master of Fine Arts degree, but all requirements for each degree—including two final examinations—must be met separately, (see the Graduate College section of the Catalog.)
Doctoral Degrees

All doctoral study in music includes the following.

Minimum course requirements listed under the M.A. degree
One or more additional music theory course(s) listed in the master’s degree requirements
One or more additional course(s) in music history, chosen from those listed in the master’s degree requirements

One of these:

Proficiency in one or more foreign languages is required in some areas.

Doctor of Philosophy

Areas of concentration for the Ph.D. include composition, musicology, music education, music theory, and music literature. The music literature program is designed for students who already have achieved a professional level of musical performance. These students are required to audition in their major performance area.

Information about specific admission and curricular requirements for each area is available from the School of Music academic office.

Doctor of Musical Ark

Requirements for the D.M.A. degree in performance and pedagogy are the same as the school’s general doctoral requirements, except that the D.M.A. requires three full-length recitals. At the performance area’s discretion, a concerto performance with orchestra or other appropriate ensemble may be substituted for one of the recitals. Singers may substitute the execution of one or more major roles in a large-scale work for one of their recitals. Conductors present two programs. See the associate director of graduate studies for specific area requirements.

D.M.A. candidates also must complete a scholarly investigation of limited scope in a written essay or thesis.

Certificate in Sacred Music

The certificate is more extensive than a minor but less than a major, with a broad focus on areas of study related to sacred music. It may be earned during work toward a graduate degree. The certificate also may be completed apart from the pursuit of a graduate degree, with prior admission to the Graduate College and consent of the faculty adviser for the certificate.

Theory Pedagogy Minor

Any student admitted to a graduate degree program in the School of Music may take this minor by completing the required courses. Students whose advisory examination places them in required courses must successfully complete those courses before being admitted to the minor.

 REQUIRED COURSES
- 025:145 Counterpoint before 1600 3 s.h.
- 025:147 Counterpoint after 1600 3 s.h.
- 025:236 Methods and Techniques of Teaching Basic Theory 3 s.h.
- 025:237 Music Theory Colloquium (concurrent with 025:236) 0-1 s.h.
- 025:249 Analysis of Tonal Music or 3 s.h.
- 025:312 Schenkerian Theory and Analysis 3 s.h.

Six semester hours from these:
- 025:241 History of Music Theory I 3 s.h.
- 025:242 History of Music Theory II 3 s.h.
- 025:247 Analysis of Music Literature: 1890-Present 3 s.h.
- 025:256 Analysis of Music Literature: Special Topics 3 s.h.
- 025:311 Theory and Analysis of Atonal Music 3 s.h.

Graduate Awards

Qualified graduate students are invited to apply for teaching and research assistantships. Inquiries should be directed to the academic office of the School of Music.

Music for Nonmajors

Courses recommended for interested students who are not majoring in music include the following.

- 025:000 Cooperative Education Internship - 0 s.h.
- 025:010 Fundamentals of Music 3 s.h.
- 025:013 Concepts and Contexts of Western Music 3 s.h.
- 025:014 Great Musicians 3 s.h.
- 025:059 Performance Instruction for Non-Majors 1 s.h.
- 025:064 Recital Attendance for Non-Majors 1 s.h.
- 025:082 Group Piano I: Non-Music 1 s.h.
- 025:084 Group Piano II: Non-Music 1 s.h.
- 025:104 Music of Latin America and the Caribbean 3 s.h.
- 025:106 History of Black Music 3 s.h.
- 025:141 History of Jazz 3 s.h.
- 025:144 History of Music I 3 s.h.
- 025:146 History of Music II 3 s.h.
- 025:178 Music, Culture, and Identity 3 s.h.
- 025:179 Nationalism and Music 3 s.h.

Group Piano I: Non-Music (025:082) is available for nonmajors who wish to develop elementary performance skills for personal musical growth and enjoyment.

Participation in School of Music ensembles is open to all University students with the ensemble director’s approval (for a list of major ensembles, see “Ensemble Participation” under “Bachelor of Music” in this section of the Catalog).

Applied music instruction is offered to nonmajors as instructors are available. Nonmajors interested in registering for 025:059 Performance Instruction for Non-Majors should consult music advisers.

Center for New Music

The Center for New Music (CNM) is a vital component of the School of Music’s composition program. Since its founding in 1966, CNM has been both laboratory and showcase for late 20th-century music. It presents several 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, and it commissions and produces new works. Audition, rehearsal, and programming information is available on request.

Facilities

The Iowa Center for the Arts has one of the nation’s finest facilities for teaching and performance in music. In addition to classrooms, the Voxman Music Building includes 55 teaching studios, 73 practice rooms, a library, three electronic music laboratories, ear training and listening facilities with 30 listening posts, four large rehearsal halls, ensemble rooms, professional recording facilities, an Instructional Technology Center with 30 microcomputers with MIDI equipment and music-related software, seven practice and recital organs, the 80-seat Krapf Organ Studio, and the 720-seat Clapp Recital Hall. Hancher Auditorium seats 2,680 people for concerts and 2,400 for operas and other stage productions.

Resources of the Rita Benton Music Library include more than 80,000 volumes of music and books, some 3,000 titles in microformats, more than 14,000 sound recordings and videos (cassettes and laserdiscs), and 300 current periodicals in several languages. The collection of reference materials is particularly strong, supporting research in many areas of musical study. The rare book holdings include a large number of late 18th and 19th-century scores. The library’s quarters in the Voxman Music Building provide seating for 100 people in the reading room and 35 at the listening stations in the sound recordings room. Physical facilities also include a combined rare book and seminar room and spaces for microform readers, computers, and video machines.

Courses

General

Other courses appropriate for nonmajors are 025:104, 025:144, and 025:146, described under the heading “Music History;” 025:141 under the heading “Jazz Studies;” and most ensembles under the heading “Ensembles.”

*Instruction in 025:059 Performance Instruction for Non-Majors consists of a half-hour lesson per week. The course is offered on a fee-per-course basis, in addition to tuition. It is intended for both undergraduate and graduate students. Students register under separate section numbers for different instruments.

- 025:000 Cooperative Education Internship 0 s.h.
Lower Level Organ
Applied Music
a fee-per-course basis, in addition to tuition.

LOWER-LEVEL UNDERGRADUATE MAJORS

025:014 Great Musicians 3 s.h.
Lives and works of important composers, performers. GE: fine arts humanities.
*025:059 Performance Instruction for
Non-Majors 1 s.h.
Bassoon, cello, clarinet, euphonium, flute, horn, oboe, organ, percussion, piano, saxophone, string bass, trombone, trumpet, tuba, viola, Violin, or voice. Open only to nonmajors. GE: fine arts humanities.
025:064 Recital Attendance for Non-Majors 1 s.h.
May be repeated.
025:074 Recital Attendance 1 s.h. For majors.
025:082 Group Piano I: Non-Music 1 s.h.
Reading, technical study, chording, playing by ear, improvisation; for beginners. Closed to music students. GE: fine arts or humanities.
025:084 Group Piano II: NonMusic 1 s.h.
Continuation of 025:082. Closed to music majors.
025:106 History of Black Music 3 s.h.
same as 129:130.
025:161 Role of Cultural Institutions in America 3 s.h.
Mission, organization, and financing of diverse cultural organizations; government policies and financial support, private support, earned income, special events, advocacy organizations, marketing. Same as 024:160, 049:110.
025:166 Ballet Accompaniment 1 s.h.
Same as 137:161.
025:177 Music, Media and Popular Culture 3 s.h.
Same as 304:175.
025:178 Music, Culture and Identity 3 s.h.
Use of music as marker of social identity; focus on popular music in the United States and interplay among Latino, African and European-American musical cultures; listening skills.
025:179 Nationalism and Music 3 s.h.
Role of music in the construction of national consciousness; theoretical perspectives, case studies from around the world. Advanced undergraduate or graduate standing required.
025:222 Twentieth-Century Intermedia Arts 3 s.h.
Development of 20th-century performance art, environments, event scores, sound poetry, other avant-garde intermedial art actions.

Applied Music

Instruction consists of individual and/or class lessons, at the instructor’s option, for a minimum of one hour per week. Majors are required to attend weekly performance and pedagogy seminars in applied music. Offered on a fee-per-course basis, in addition to tuition.

LOWER-LEVEL UNDERGRADUATE MAJORS

025:040 Lower Level Voice
025:041 Lower Level Piano
025:042 Lower Level Organ
025:044 Lower Level Violin
025:045 Lower Level Viola
025:046 Lower Level Cello
025:047 Lower Level String Bass
025:048 Lower Level Flute
025:049 Lower Level Oboe
025:050 Lower Level Clarinet
025:051 Lower Level Bassoon
025:052 Lower Level Saxophone
025:053 Lower Level Horn
025:054 Lower Level Trumpet
025:055 Lower Level Euphonium
025:056 Lower Level Trombone
025:057 Lower Level Tuba
025:058 Lower Level Percussion

SECONDARY PERFORMANCE INSTRUCTION FOR MAJORS

Instruction consists of one half-hour lesson per week. Offered on a fee-per-course basis, in addition to tuition.

SECONDARY PERFORMANCE INSTRUCTION FOR MAJORS

025:017 Secondary Performance-Voice 1 s.h.
025:018 Secondary Performance-Piano 1 s.h.
025:019 Secondary Performance-Organ 1 s.h.
025:021 Secondary Performance-Violin 1 s.h.
025:022 Secondary Performance-Viola 1 s.h.
025:023 Secondary Performance-Cello 1 s.h.
025:024 Secondary Performance-String Bass 1 s.h.
025:025 Secondary Performance-Flute 1 s.h.
025:026 Secondary Performance-Oboe 1 s.h.
025:027 Secondary Performance-Clarinet 1 s.h.
025:028 Secondary Performance-Bassoon 1 s.h.
025:029 Secondary Performance-Saxophone 1 s.h.
025:030 Secondary Performance-Horn 1 s.h.
025:032 Secondary Performance-Euphonium 1 s.h.
025:033 Secondary Performance-Trombone 1 s.h.
025:034 Secondary Performance-Tuba 1 s.h.
025:035 Secondary Performance-Percussion 1 s.h.

Choral literature

025:225 Score Reading 1 s.h.
025:261 Advanced Choral Literature I 3 s.h.
Choral music of the Renaissance and Baroque eras. Offered fall semesters.
025:262 Advanced Choral Literature II 3 s.h.
Choral music of Classical, Romantic, 20th-century eras. Offered spring semesters.
025:341 Seminar: Choral Literature and Analysis I 3 s.h.
025:342 Seminar: Choral Literature and Analysis IV 3 s.h.
Choral music of the Renaissance.
025:343 Seminar: Choral Literature and Analysis V 3 s.h.
Choral music of the Baroque era.
025:344 Seminar: Choral Literature and Analysis VI 3 s.h.
Choral music of the Classical and Romantic eras.
025:345 Seminar: Choral Literature and Analysis VII 3 s.h.
Choral music of the 20th-century.

Composition

025:148 Instrumentation 2 s.h.
Basic techniques of writing for orchestral instruments; ranges, transpositions, sound production, notating scores and parts. Prerequisite: 025:065.
025:155 Composition 2 s.h.
May be repeated. Prerequisite: 025:065 or consent of instructor.
025:156 Composition Seminar 0-1 s.h.
May be repeated. Corequisite: 025:223.
025:157 Orchestration 2 s.h.
Instrumental capabilities and combinations in solo, chamber, and large ensemble literature; application in composition. Prerequisite: 025:148 or consent of instructor.
025:223 Advanced Composition arr.
May be repeated. Consent of instructor required. Corequisite: 025:156. Prerequisite: 025:155 or equivalent.
025:250 Composition: Electronic Media I 3 s.h.
Composition using analog, digital technology. Offered fall semesters. Consent of instructor required.
025:251 Composition: Electronic Media II 3 s.h.
Advanced experimental composition in association with analog, digital technologies. Offered spring semesters. Consent of instructor required.
025:300 Words and Music 3 s.h.
Workshop based on collaboration between Writer's Workshop poets and School of Music composers, emphasis on creation of new performance works. Consent of instructor required. Same as 09W:497.

Conducting
See also 025:108, 025:109, and 025:110, under the heading “Music Education.”

025:107 Techniques of Conducting 2 s.h.
Basic elements, score analysis.

025:158 Advanced Conducting 2 s.h.
Prerequisite: elementary conducting skills.

025:203 Advanced Choral Conducting I 3 s.h.
Literature, style, conducting techniques, and methods of Renaissance and Baroque eras. Offered fall semesters. Corequisite: 025:261.

025:204 Advanced Choral Conducting II 3 s.h.

025:205 Advanced Choral Conducting III 3 s.h.

025:206 Advanced Choral Conducting IV 3 s.h.

025:207 Advanced Choral Conducting V 3 s.h.

025:208 Advanced Choral Conducting VI 3 s.h.

025:291 Orchestral Literature arr.

Ensembles
Courses may be repeated; consent of instructor required.

025:095 Old Gold Singers 0.2 s.h.

025:142 Camera Singers 1 s.h.

025:162 All-University String Orchestra 1 s.h.
Repertoire, rehearsal pacing, and performance expectations geared to general students. May be repeated. Open to all UI students with no audition.

025:163 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. May be repeated. Consent of instructor required.

025:180 Large Pep Band 1 s.h.
Performing ensemble for men's basketball games during spring semester. Prerequisite: membership in marching band (025:193) and audition.

025:181 University Choir 1 s.h.

025:183 Chamber Orchestra 0-1 s.h.

025:184 Collegium Musicum 1 s.h.
Ensembles dedicated to performance of medieval, renaissance, and baroque music.

025:185 Kantorei 1 s.h.

025:186 Piano Accompaniment arr.

025:187 Piano Chamber Music arr.

025:188 String Chamber Music arr.

025:190 Wind Chamber Music arr.
Preparation, performance of representative literature; sections for woodwinds, brass, flute, clarinet, horn, double reed, trumpet, trombone.

025:191 University Chorale 1 s.h.

025:192 Orchestra 0-1 s.h.

025:193 Marching Band 0-1 s.h.
Offered fall semesters.

025:194 Symphony Band/Concert Band/University Band 0-1 s.h.

Range of styles and idioms, primarily written during the 20th century; historical or cultural aspects such as ancient rudimental drumming styles, ragtime, jazz, popular music, and music from Africa, the Caribbean, Brazil, Cuba. Consent of instructor required.

Jazz Studies
025:101 Introduction to Improvisation 3 s.h.
Prerequisite: 025:002 or consent of instructor.

025:102 Jazz Improvisation 2 s.h.
May be repeated. Prerequisites: 025:002 and 025:101, or consent of instructor. Corequisite: 025:224.

025:118 Jazz Theory 2 s.h.
Rhythm, melody, harmony in jazz practice; ear training, keyboard skills, dictation, transcription. Prerequisite: 025:002 or consent of instructor.

025:141 History of Jazz 3 s.h.
Offered spring semesters. GE: cultural diversity.

025:196 Jazz Band Techniques 2 s.h.
Consent of instructor required.

025:197 Jazz Band arr.
Prerequisite: 025:101 or 025:102, 025:224 Small Jazz Ensembles 1 s.h.
Prerequisite: 025:102.

025:231 Jazz Composition and Arranging 2 s.h.

025:243 Advanced Jazz Improvisation 2 s.h.
May be repeated. Prerequisite: 025:102 or consent of instructor. Corequisite: 025:224.

025:244 Transcription 2 s.h.
Transcriptions of improvisations, small ensemble arrangements, large ensemble compositions; computer/realization. Prerequisite: 025:118 or consent of instructor.

Music Education
Other music education courses are offered by the Division of Curriculum and Instruction in the College of Education. See that section of the Catalog for listings and descriptions. Where dual numbers are indicated, students preparing for music teacher licensure should register under the education number. See also 025:196 listed under the heading “Jazz Studies.”

025:100 Class Strings 1 s.h.
For teacher education students in music.

025:105 Instrumental Techniques 1-3 s.h.
Fundamental skills in wind, percussion instruments. Same as 07S:143.

025:108 Instrumental Conducting 2 s.h.
Advanced skills; score analysis, rehearsal techniques, literature selection. Same as 07S:145. Prerequisite: 025:107.

025:109 Choral Methods 3 s.h.
Effective choral music programs for all ages. Same as 07S:147.

025:110 Choral Conducting and Literature 3 s.h.
Prerequisite: 025:107. Same as 07S:148.

025:111 Child and Adolescent Voice Production 2 s.h.
Teaching children, adolescents to sing; emphasis on principles, techniques of voice production, pedagogy. Same as 07S:139.

025:112 String Methods and Materials 2-4 s.h.
Same as 07S:150.

025:117 Arranging for Band 2 s.h.
Scoring and arranging techniques for concert, marching bands. Offered spring semesters.

025:182 Marching Band Techniques 1 s.h.
Administration, charting. Offered spring semesters.

Band literature; history.

025:220 Music Education Workshop 1 s.h.
For inservice music teachers; topics vary. Same as 07S:241.

Music History
Note: Courses 025:303-025:309, 025:313-025:314, 025:323-025:324, and 025:331-025:332 deal with periods and special topics in music history. They are offered about every two years. All of them have as prerequisites 025:301 and 025:302, or the equivalents, or consent of instructor.

This listing includes several courses appropriate for nonmajors. Other music history courses appropriate for nonmajors are listed under the heading “General.”

025:104 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. Offered spring semesters. GE: fine arts or humanities.

025:137 Literature, Music, and Aesthetics 2-4 s.h.
Interdisciplinary connections between literature and music with attention to specific cultural, ideological contexts. Same as 033:145, 041:162.

025:144 History of Music I 3 s.h.
GE: fine arts or historical perspectives. Prerequisites: 025:003 and 025:004, or equivalents, for majors; consent of instructor for nonmajors.

025:146 History of Music II 3 s.h.
GE: fine arts or historical perspectives. Prerequisites: 025:003 and 025:004, or equivalents, for majors; consent of instructor for nonmajors.

025:238 Musicology Colloquium 0 s.h.

025:301 Advanced History and Literature of Music I 3 s.h.
History and style of Medieval, Renaissance, and Baroque music (750-1700). Offered fall semesters.

025:302 Advanced History and Literature of Music II 3 s.h.
History and style of Classical, 19th-century, and 20th-century music (1750-present). Offered spring semesters.

025:303 Medieval Music 3 s.h.

025:304 Renaissance Music 3 s.h.

025:305 Seventeenth-Century Music 3 s.h.

025:306 Eighteenth-Century Music 3 s.h.

025:307 Nineteenth-Century Music 3 s.h.

025:308 Music 1900-1945 3 s.h.

025:309 Music 1945-Present 3 s.h.

025:310 American Music 3 s.h.

025:313 Major Composers 3 s.h.
Life and works of one important composer (announced before registration). May be repeated.

025:314 Genres of Music 3 s.h.
One major genre in the history of music (announced before registration). May be repeated.

025:315 Topics in the History of Opera 3 s.h.
History, style, ideology, and cultural context of operatic works from one or more eras, countries, or composers. May be repeated. Prerequisites: 025:301 and 025:302, or consent of instructor.

025:318 Topics in Ethnomusicology 3 s.h.
Perspectives on analysis and representation of selected musical cultures from around the world. Consent of instructor required.

025:319 Foundations of Ethnomusicology 3 s.h.
Ethnomusicology in relation to domains of musical, humanistic, social science scholarship on expressive culture and artistic processes, Senior standing and consent of instructor required. Same as 113:208.

025:320 Introduction to Musicology 1-3 s.h.
Methods, materials of research in historical musicology; field of musicology. Offered fall semesters. Prerequisite: for 1 s.h., credit, 025:321 or equivalent. Corequisite: for 3 s.h. credit, 025:321.
Music Therapy
025:091 Music Foundations in Therapy I 2 s.h.
Skill development on social instruments such as guitar, autoharp, piano; song-leading skills and repertoire development for use in clinical music therapy sessions. Open only to music therapy students. Prerequisite: 025:114 or consent of instructor.

025:092 Music Foundations in Therapy II 2 s.h.
Advanced skill development for guitar use in clinical music therapy sessions; movement, percussion techniques; music technology, related skills used in therapeutic settings. Open only to music therapy students. Prerequisite: 025:091 or consent of instructor.

025:094 Music Therapy Practicum 1-2 s.h.
Supervised clinical training with adult clients and children in various of health care settings. Open only to music therapy majors. Prerequisite: 025:114.

025:096 Music Techniques in Special Education and Recreation 2-3 s.h.
Music methods and materials appropriate for disabled clients in special education and recreational settings; overview of individualized educational planning for students with disabilities. Open only to music therapy and music education majors or to others with consent of instructor.

025:098 Senior Project in Music Therapy 1 s.h.

025:114 Orientation to Music Therapy 2 s.h.
Theory; practice; typical clients, places of employment.

025:138 Music Therapy Techniques: Atypical Children 3 s.h.
Techniques, procedures for use in clinical, educational settings. Open only to music therapy students. Prerequisite: 025:114.

025:139 Music Therapy Techniques: Adult Clients 3 s.h.
Techniques, procedures for work with disabled adult clients. Open only to music therapy student. Prerequisite: 025:114.

025:140 Internship in Music Therapy 2 s.h.
Clinical training under direction of board certified music therapist.

025:221 Special Studies in Music Therapy 2-3 s.h.
Individual research. Open only to music therapy students. May be repeated. Consent of instructor required.

025:285 Research in Music Therapy 1 s.h.
Research methodology: foundation for subsequent studies of research on capstone project in music therapy. Consent of instructor required.

025:286 College Teaching and Clinic Supervision in Music Therapy 2 s.h.
Principles of college teaching, curriculum development, clinical supervision in music therapy. Professional registration/certification in music therapy and consent of instructor required.

025:290 Advanced Woodwind Pedagogy and Literature I 2 s.h.
Clarinet and saxophone solo and study literature; integration of pedagogical topics.

025:291 Advanced Woodwind Pedagogy and Literature II 2 s.h.
Study of flute, oboe, and bassoon solo and study literature; integration of pedagogical topics.

025:292 Singing String Methods and Literature 2 s.h.
Pedagogy for orchestral stringed instruments. Graduate standing or consent of instructor required.

025:293 Piano Literature II 2 s.h.
Pedagogy for orchestral piano. Graduate standing or consent of instructor required. May be repeated.


Orchestral and Band Instruments
See also 025:112, under the heading “Music Education.”

025:132 Recording Techniques 3 s.h.
Offered spring semesters.

025:214 Recording Techniques 3 s.h.
Offered fall semesters. Consent of instructor required.

025:218 Art and Technology I 3 s.h.
Offered fall semesters. Consent of instructor required.

025:219 Art and Technology II 3 s.h.
Offered spring semesters. Consent of instructor required. Prerequisite: 025:218.

025:254 Band Camp Literature I 2 s.h.

025:255 Band Camp Literature II 2 s.h.
Practicum on passages frequently requested at professional auditions; mock auditions scheduled once a year. Consent of studio instructor required.

025:256 Advanced String Pedagogy and Literature 3 s.h.
Pedagogy for string instruments. Graduate standing or consent of instructor required.

025:275 Advanced Brass Pedagogy and Literature 2 s.h.
Orchestral and solo literature; integration of pedagogical topics.

025:276 Advanced Bassoon Pedagogy and Literature 2 s.h.
Study of bassoon literature; integration of pedagogical topics.

025:284 Organ and Sacred Music 2 s.h.
Elementary to early intermediate instruction for music majors whose principal performing medium is voice or an orchestral or band instrument; skill development in sight reading, technical proficiency, harmonization, transposition, improvisation, simple literature. Open only to music majors. Conquisite: 025:002.

025:297 Piano Literature II arr.
Intermediate instruction for music majors whose principal performing medium is voice or an orchestral or band instrument; continued skill development from 025:297; introduction of easy solo and ensemble literature. Prerequisite: 025:071 or successful completion of proficiency examination. Conquisite: 025:003.

025:298 Trumpet Literature I 2 s.h.
Baroque era to Mozart; Chopin through 1900. May be repeated.

025:299 Trumpet Literature II arr.
Beethoven through Schumann, 20th century. May be repeated.

025:361 Special Studies in Organ Literature arr.
Individual research in special aspects of organ literature; primarily for D.M.A. students. May be repeated.

025:362 Special Studies in Chamber Music arr.
Performance by pianists taking course for credit.

025:390 M.F.A. Thesis 1-2 s.h.
Honors performance; accompanying, basic improvisation techniques. May be repeated. Organ major or consent of instructor required.

025:401 M.F.A. Thesis 1-2 s.h.
Honors performance; accompanying, basic improvisation techniques. May be repeated. Organ major or consent of instructor required.

025:402 M.A. Recital arr.

Theory

025:001 Fundamentals of Music for Majors 3 s.h.
Music fundamentals through writing, hearing, performance; notation of pitch and rhythm; intervals, scales, triadic harmony; elements of tonality, key signatures, major and minor modes; sight-singing, dictation. Offered fall semesters. Corequisite: 025:071 or successful completion of piano proficiency exam.

025:002 Musician and Theory I 4 s.h.
Principles of harmony: emphasis on aural skills, theoretical concepts, notation. Offered fall semesters. Prerequisite: 025:001 or equivalent, or successful completion of music fundamentals exam. Corequisite: 025:071 or successful completion of piano proficiency examination.

025:003 Musician and Theory II 4 s.h.
Continuation of 025:002. Offered spring semesters. Corequisite: 025:072 or successful completion of piano proficiency exam.

025:004 Musician and Theory III 4 s.h.
Continuation of 025:002-003: focus on common-practice repertory. Offered fall semesters.

025:005 Musician and Theory IV 4 s.h.
Continuation of 025:002-003: focus on 20th-century repertories. Offered spring semesters.

025:145 Counterpoint before 1600 3 s.h.
Two- and three-part counterpoint: Renaissance polyphony. Prerequisite: 025:005 for undergraduate students; 025:240 for graduate students.

025:147 Counterpoint after 1600 3 s.h.
Two- and three-part writing in the style of J.S. Bach, fugue. Prerequisite: 025:005 for undergraduate students; 025:240 for graduate students.

025:153 Keyboard Harmony 1-2 s.h.
Melody harmonization and figured-bass realization at the keyboard. May be repeated. Keyboard proficiency required. Prerequisite: 025:005 for undergraduate students; 025:240 for graduate students.

025:236 Methods and Techniques of Teaching Basic Theory 3 s.h.

025:237 Music Theory Colloquium May be repeated.

025:240 Analytical Techniques 3 s.h.
Theories, strategies of analysis applied to classic/romantic and post-tonal music.

025:241 History of Music Theory I 3 s.h.
Offered fall semesters. Prerequisite: 025:240.

025:242 History of Music Theory II 3 s.h.
Offered spring semesters. Prerequisite: 025:240.

025:247 Analysis of Music Literature 1890–Present 3 s.h.
May be repeated. Prerequisite: 025:005 for undergraduate students; 025:240 for graduate students.

025:249 Analysis of Tonal Music 3 s.h.
Analysis of tonal repertories from the 17th through 20th centuries. May be repeated. Prerequisite: 025:005 for undergraduate students; 025:240 for graduate students.

025:256 Analysis of Music Literature: Special Topics 3 s.h.
May be repeated. Prerequisite: 025:005 for undergraduate students; 025:240 for graduate students.

025:311 Theory and Analysis of Atonal Music 3 s.h.
Reading, application of current analytical approaches (e.g., Lewin, Morris, Mead, Cohn). Prerequisite: 025:247 or consent of instructor.

025:312 Schoenberg Theory and Analysis 3 s.h.
Application of Heinrich Schenker’s theories to music 1700-1900. Prerequisite: 025:240 or consent of instructor.

025:380 Readings in Music Theory May be repeated.

Voice and Opera

025:115 Diction for Singers I 2 s.h.
Italian; theory of correct pronunciation for singing; no previous background necessary.

025:116 Diction for Singers II 2 s.h.
German; theory of correct pronunciation for singing; no previous background necessary.

025:159 Diction for Singers III 2 s.h.
French; theory of correct pronunciation for singing; no previous background necessary.

025:160 History of Art Song 2 s.h.
Historical survey of development of major Western art song styles. Offered fall semesters of odd years.

025:165 Opera Workshop 2 s.h.
Opera performance techniques, including acting, aria interpretation, scene work. May be repeated.

025:201 Principles of Voice Production 3 s.h.
Physical, physiological, pedagogical principles in professional, nonprofessional, and impaired voice production; anatomy, voice classification, control of loudness, pitch, register, quality; efficient, inefficient use of voice; instrumentation for voice analysis, synthesis. Offered fall semesters. Same as 003:201.

025:202 Methods of Teaching Voice 3 s.h.
Audition, musicianship, foreign language aptitude, physical and emotional characteristics; mental images used to modify respiratory, pharyngeal, articulatory behavior; vocal hygiene; performance anxiety; student-teacher relationships; administration in vocal schools, professional organizations. Offered spring semesters. Same as 003:202.

025:212 Acting for Graduate Voice Students 2 s.h.
Fundamentals of acting technique; attention to demands on performers in opera and musical theater. Open only to graduate-level vocal music majors.

025:224 Advanced Vocal Pedagogy Seminar 2 s.h.
May be repeated. Prerequisites: 025:230 and 025:202.

025:235 Graduate Voice Performance Seminar 0 s.h.
May be repeated.

025:245 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. May be repeated. Audition required.

025:246 Opera Theater: Chorus 1 s.h.
Chorus roles from vocal, dramatic standpoint. May be repeated. Offered spring semesters.

025:248 Opera Theater: Directing Seminar May be repeated.
Experience in directing scenes and/or one-act operas. May be repeated.

025:339 Survey of Operatic Literature 3 s.h.
Important operatic scores examined from standpoint of performers, directors, production problems.

025:351 Survey of Song Literature I 3 s.h.
Italian, Scandinavian, Spanish, Slavic, and Russian art song repertoire. Offered spring semesters of even years.

025:352 Survey of Song Literature II 3 s.h.
German language Lieder from Schubert to present. Offered fall semesters of even years.

025:353 Survey of Song Literature III 3 s.h.
French art song repertoire. Offered spring semesters of odd years.

025:354 Survey of Song Literature IV 3 s.h.
Nineteenth and 20th-century British and North American songs. Offered fall semesters of odd years.

NEUROSCIENCE

Graduate degree: Ph.D. in Neuroscience

The Ph.D. program in neurosciences is interdepartmental, involving members of the Departments of Anatomy, Biological Sciences, Pharmacology, Physiology and Biophysics, and Psychology as well as a number of faculty members from clinical departments. Faculty members and students in the College of Liberal Arts participate in the Neuroscience Program. For information about the program, see the Graduate College section of the Catalog.

DIVISION OF PERFORMING ARTS

Director: David Nelson

The Division of Performing Arts includes the Department of Dance, the School of Music, and the Department of Theatre Arts. 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 Performance Art Production Unit.

The division’s individual academic units offer undergraduate and graduate courses and degree programs in creative, performance, scholarly, and theoretical areas. They present an extensive schedule of dance productions, faculty and student recitals, ensemble concerts, and mainstage and gallery theater productions.

For information about degree programs and courses offered by the division’s units, see “Dance,” “Music,” and “Theatre Arts” in this section of the Catalog.

PHILOSOPHIES AND ETHICS OF POLITICS, LAW, AND ECONOMICS

Director: Diane Iske

Undergraduate nondegree program: certificate in Philosophies and Ethics of Politics, Law, and Economics

Web site: http://www.uiowa.edu/people

The College of Liberal Arts offers an interdisciplinary program that leads to a certificate in Philosophies and Ethics of Politics, Law, and Economics (PEOPLE).

The PEOPLE program is based on the assumption that societies institutionalize values; they guide conduct by regulating opportunities, prescribing behavior, and influencing beliefs and attitudes. The goal of the PEOPLE program is to help students understand and evaluate these complex relationships by examining them from a variety of perspectives.

Certificate

The PEOPLE program may be especially attractive to students who are planning to...
attend law school after graduation. Students considering a career in planning, politics, or public administration may find the PEOPLE program highly useful.

Undergraduates in economics, philosophy, political science, and sociology may discover that they will meet many of the PEOPLE program requirements in the process of completing the requirements for their major or minor. However, a major or minor in one of these disciplines is not a requirement of the program.

Students who complete the PEOPLE program earn a certificate, and the notation “Certificate in the Philosophies and Ethics of Politics, Law, and Economics” appears on their transcripts. The certificate is awarded upon completion of a bachelor’s degree. Holders of Iowa baccalaureate degrees may return to complete the requirements for a certificate.

Students must complete a 36 semester-hour course of study with a grade-point average of at least 2.00 to earn the PEOPLE certificate. The final 18 semester hours used to complete the certificate must be taken at The University of Iowa.

Because of the program’s multiple requirements, students are encouraged to begin the program as first-year students or sophomores; however, with careful planning, students who join the program as juniors can complete the requirements by their normal graduation date, especially if they already have taken several courses that satisfy PEOPLE requirements.

Students interested in enrolling in the PEOPLE program should contact the program director.

The program consists of two parts: the foundation, made up of six courses (18 semester hours), and the fields, also made up of six courses (18 semester hours). The foundation is the common element in the program. The five fields—economics, law, philosophy, political science, and sociology—provide opportunities for specialization.

**Foundation**

Students must take the following six courses. The first two (026:036, and 026:034 or 026:102) are best satisfied during the first or sophomore year.

026:036 Principles of Reasoning 3 s.h.

One of these:

026:034 Philosophy and the Just Society 3 s.h.

026:102 Introduction to Ethics 3 s.h.

One of these:

026:132 Introduction to Political Philosophy 3 s.h.

026:135 Philosophy of Law 3 s.h.

One of these:

030:030 Introduction to Political Thought and Political Action 3 s.h.

030:050 Introduction to Political Behavior 3 s.h.

030:070 Introduction to Political Communication 3 s.h.

One of these:

06E:001 Principles of Microeconomics 3-4 s.h.

06E:002 Principles of Macroeconomics 3-4 s.h.

One of these:

026:149 Undergraduate Seminar in Philosophy (requires consent of PEOPLE program director) 3 s.h.

033:151 Individuals and Institutions 3-4 s.h.

033:153 (091:345) Hard Cases: Science Policy and Values 3 s.h.

033:155 (091:343) Risk Technology and the Public 3-4 s.h.

033:157 (091:246) Democracy and the Rule of Law 3 s.h.

**ECONOMICS**

One of these:

06E:104 Microeconomic Theory (if 06E:001 was taken for foundation requirement) 3 s.h.

06E:105 Macroeconomics (if 06E:002 was taken for foundation requirement) 3 s.h.

Two of these:

06E:150 Introduction to Economic History 3 s.h.

06E:172 (091:295) Law and Economics (cannot be used to satisfy both the economics and the law field requirements) 3 s.h.

06E:178 116A:1441 American Economic History 3 s.h.

06E:179 History of Economic Thought 3 s.h.

06E:187 Introduction to Mathematical Economics 3 s.h.

**PHILOSOPHY**

One of these:

026:104 Introduction to Philosophy of Science 3 s.h.

026:133 Philosophy of History 3 s.h.

026:196 Philosophy of the Human Sciences 3 s.h.

Two of these:

026:102 Introduction to Ethics (if not taken for the foundation requirement) 3 s.h.

026:132 Introduction to Political Philosophy (if not taken for the foundation requirement) 3 s.h.

026:135 Philosophy of Law (if not taken for the foundation requirement) 3 s.h.

026:180 Analytic Ethics 3 s.h.

026:182 History of Ethics 3 s.h.

026:185 Political Philosophy 3 s.h.

**POLITICAL SCIENCE**

One of these:

030:116 American Constitutional Law and Politics 3 s.h.

030:118 Law and Social Change 3 s.h.

One of these:

030:133 Postmodern Political Theory 3 s.h.

030:135 Introduction to Positive Political Theory 3 s.h.

030:136 Strategy in Politics 3 s.h.

030:138 Current Political Theory 3 s.h.

One of these:

030:152 The Legislative Process 3 s.h.

030:153 The Judicial Process 3 s.h.

030:156 Politics of Ethnic and Cultural Conflict 3 s.h.

030:170 The Politics of International Economics 3 s.h.

**LAW**

One of these:

026:135 Philosophy of Law (if not taken for foundation or another field requirement) 3 s.h.

144:143 (091:288) Jurisprudence 3 s.h.

Two of these:

06E:172 (091:295) Law and Economics (if not taken for economics field requirement) 3 s.h.

16A:110 (091:293) Law in American History I 3 s.h.

030:116 American Constitutional Law and Politics (if not taken for political science field requirement) 3 s.h.

030:118 Law and Social Change (if not taken for political science field requirement) 3 s.h.


091:195 (030:173/047:195) Introduction to Public International Law 3 s.h.

091:319 (149:170) Native American Law I 3 s.h.

091:335 (129:141) Race, Racism, and American Law 3 s.h.


144:142 (091:224) Comparative Law 3 s.h.

Semester hours earned in PEOPLE courses taught by College of Law faculty members normally do not count toward requirements for a law degree.

**SOCIOLOGY**

One of these:

034:001 Introduction to Sociology 3 s.h.

034:009 Sociological Theory 3 s.h.

Two of these:

034:140 Criminology 3 s.h.

034:141 Juvenile Delinquency 3 s.h.

034:149 Sociology of Criminal Law and Punishment 3 s.h.

034:150 Political Sociology 3 s.h.

034:166 Social Inequality 3 s.h.

**Courses**

144:141 Law, Litigation, and Science arr.

Basic concepts, skills for evaluating influences and effects of scientific evidence, advocating or attacking such evidence, and understanding the law that governs use of scientific information in courts, legislatures, regulatory agencies. Same as 091:652.

144:142 Comparative Law 2.3 s.h.

Comparative study of the world’s main legal systems, emphasis on origins, development, characteristic features of civil law tradition, which includes most modern legal systems. Same as 091:224.

144:143 Jurisprudence 2.3 s.h.

Selected legal philosophies with emphasis on legal positivism and natural law, nature of jurisprudence, relationship between law and morality, authority, normativity, institutional nature of law, political obligation. Same as 091:288
PHILOSOPHY

Chair: Gregory Landini
Professors: Laird Addis, Panayot Butchvarov, Phillip Cummins, James Duerringer, Richard Funerton, Gunter Zoller
Associate professors: Evan Fales, Diane Jeske, Gregory Landini, David Stern
Assistant professors: Sarah Buss, Thomas Williams

Undergraduate degree: B.A. in Philosophy
Graduate programs: M.A., Ph.D. in Philosophy

Web site: http://www.uiowa.edu/~phi1

Undergraduate Programs

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 graduate or professional work in many fields—law, for example—and for any situation requiring clear, systematic thinking. A graduate degree is necessary for college teaching in philosophy.

Bachelor of Arts

The B.A. degree requires at least 27 semester hours of credit in courses numbered from 026:061 through 026:198 and must include the following:

026:103 Introduction to Symbolic Logic 3 s.h.
026:111 Ancient Philosophy 3 s.h.
026:114 Seventeenth-Century Philosophy 3 s.h.
026:116 Eighteenth-Century Philosophy 3 s.h.

or

026:111 Ancient Philosophy 3 s.h.
026:116 Eighteenth-Century Philosophy 3 s.h.

The final 12 semester hours of philosophy courses used to complete the departmental requirement must be taken at The University of Iowa. In addition to prerequisites listed for individual courses, considerations such as the order in which historical courses are taken are relevant to the effective structuring of a major's undergraduate education. The director of undergraduate studies can provide more information.

Four-Year Graduation Plan

The following checklists 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: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: at least one course in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: at least five courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: at least six courses in the major

Before the sixth semester begins: at least six courses in the major

Samples of course work which historical courses are taken are relevant to the effective structuring of a major’s undergraduate education. The director of undergraduate studies can provide more information.

Honors

The department administers an honors program for undergraduate students of superior ability. In order to be admitted to the honors program in philosophy, a student must be a member of the University Honors Program and must have taken and passed at least three philosophy courses in the major. In order to graduate with honors in philosophy, the student must complete the regular requirements for an undergraduate major in philosophy with a grade-point average of at least 3.40 in philosophy courses and must write an acceptable honors thesis on a significant topic in philosophy that interests him or her. The honors adviser can provide more information.

Minor

The minor in philosophy requires students to complete a minimum of 15 semester hours in philosophy courses with a grade-point average of at least 2.00. Of these, a minimum of 12 semester hours must be taken at The University of Iowa in Department of Philosophy courses numbered above 100. For information contact the director of undergraduate studies.

Graduate Programs

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, ethics, logic, and philosophy of science.

Master of Arts

The M.A. degree requires a minimum of 30 semester hours and may be taken without thesis. Requirements include courses in metaphysics, epistemology, history of philosophy, logic and philosophy of science, and ethics. An oral final examination also is required. There is no foreign language requirement. The director of graduate studies can provide more information.

Doctor of Philosophy

The Ph.D. degree requires a minimum of 72 semester hours of graduate credit. Candidacy for the doctoral program is determined by a formal vote of the entire faculty of the Department of Philosophy, usually after the student has completed three semesters of graduate study in residence. Requirements include courses in metaphysics and epistemology, history of philosophy, logic and philosophy of science, and ethics. A written comprehensive examination covering the student’s area of specialization and a prospectus of the dissertation also are required. The comprehensive examination may be taken only after the student has shown competence in an approved foreign language. The director of graduate studies can provide more information.

Courses

More detailed descriptions of undergraduate and graduate courses offered during a given semester or summer session are available in the Department of Philosophy main office shortly before early registration.

For Undergraduates Only

026:001 Problems of Moral Reasoning 3 s.h.
Ethical thought, with emphasis on its implications for contemporary moral controversies.

026:033 Philosophy and Human Nature 3 s.h.
Human nature and its relation to society, knowledge, religion, science, and freedom; philosophical and historical examination of 20th-century theories. GE: historical perspectives.

026:034 Philosophy and the Just Society 3 s.h.
The nature of individuals and governments and the obligations they have to each other; philosophical and historical examination of theories from Plato through the 19th century. GE: historical perspectives.

026:036 Principles of Reasoning 3 s.h.
Elementary logic and its applications. GE: quantitative or formal reasoning

026:061 Introduction to Philosophy 3 s.h.
Issues and arguments; topics may include rational belief, evidence, the self, causation, and the presuppositions of religion. GE: humanities.

For Undergraduate and Graduate Students

Not open to first-year students.

026:102 Introduction to Ethics 3 s.h.
Analytical and historical introduction to ethical theories about issues such as the nature of goodness, the nature of right conduct. GE: humanities.

026:103 Introduction to Symbolic Logic 3 s.h.
Main ideas and techniques of formal deduction.

026:104 Introduction to Philosophy of Science 3 s.h.
Fundamental issues in scientific method, inductive reasoning, explanation, the distinctive nature of science.

026:111 Ancient Philosophy 3 s.h.
Main trends and major figures, such as Plato and Aristotle.

026:112 Medieval Philosophy 3 s.h.
Main trends and major figures, such as Augustine and Aquinas.

026:114 Seventeenth-Century Philosophy 3 s.h.
Main trends, central arguments, major positions; Bacon and Descartes to Leibniz and Locke.

026:116 Eighteenth-Century Philosophy 3 s.h.
Main trends, central arguments, major positions; Berkeley to Kant.

026:117 Nineteenth-Century Philosophy 3 s.h.
Main trends and major figures.

026:118 Twentieth-Century Philosophy 3 s.h.
Main trends and major figures.

026:131 Aesthetics 3 s.h.
Major problems in philosophy of the arts.

026:132 Introduction to Political Philosophy 3 s.h.
Major problems.

026:133 Philosophy of History 3 s.h.
Major problems: objectivity, historicist methods and theory of interpretation, nature of historical explanations, reduction.

026:134 Philosophy of Religion 3 s.h.
Medieval to contemporary treatments of central issues: the nature of faith; the existence and nature of God; religion and ethics; the interpretation of religious texts. Same as 032:146.
026:135 Philosophy of Law 3 s.h.
Introduction; the nature of law, legal authority, legal reasoning; issues in criminal law, such as punishment, responsibility; issues in property law; constitutional law. Not open to first-year students. Prerequisite: 026:034 or 026:102 or 026:132 or consent of instructor.

026:136 Philosophy of Literature 3 s.h.
Philosophical dimensions of literature and literary criticism. Same as 048:136.

026:138 Philosophical Problems of Artificial Intelligence 3 s.h.
Major issues and controversies.

026:141 Existentialist Philosophy 3 s.h.
Main ideas of existentialism; emphasis on Kierkegaard, Nietzsche, Heidegger, Sartre.

026:143 Philosophy East and West 3 s.h.
Comparative analysis of ideas in Eastern and Western philosophy.

026:144 Indian Philosophy 3 s.h.
Main ideas, major texts. Same as 026:174.

026:145 Buddhist Philosophy 3 s.h.
Introduction to main ideas. Same as 026:175.

026:147 Philosophical Issues 3 s.h.
A philosophical topic or controversy. Not open to first-year students. Same as 014:147.

026:148 Readings in Philosophy arr.
For honors students. May be repeated.

026:149 Undergraduate Seminar in Philosophy 3 s.h.
Selected problems. Consent of instructor required.

026:150 Topics in Indian Philosophy 3 s.h.
A single Indian philosopher or philosophical problem. May be repeated. Consent of instructor required.

026:151 Topics in Ancient Philosophy 3 s.h.
A single ancient philosopher or philosophical problem. Consent of instructor required.

026:152 Plato 3 s.h.
Main ideas, major texts. Consent of instructor required.

026:153 Aristotle 3 s.h.
Main ideas, major texts. Consent of instructor required.

026:154 Augustine, Anselm, and Abelard 3 s.h.
Views of one or more of these three philosophers; other important philosophers and general philosophical trends of the early Middle Ages. Consent of instructor required.

026:155 Aquinas, Scotus, and Ockham 3 s.h.
Views of one or more of these three philosophers; other important philosophers and general philosophical trends of the Middle Ages. Consent of instructor required.

026:158 Descartes 3 s.h.
Major works, such as the Discourse on Method, as well as lesser known works, such as The World. Consent of instructor required.

026:160 Spinoza and Leibniz 3 s.h.
Main ideas, major texts. Consent of instructor required.

026:162 Locke 3 s.h.
Locke’s metaphysical and epistemological views in their historical context. Consent of instructor required.

026:163 Berkeley 3 s.h.
Immaterialism and its development. Consent of instructor required.

026:164 Hume I 3 s.h.
Hume’s epistemology and metaphysics as developed in A Treatise of Human Nature (book 1) and An Enquiry Concerning Human Understanding. Consent of instructor required.

026:165 Hume II 3 s.h.
Hume’s ethics, political theory, and philosophy of religion; A Treatise of Human Nature (books 2 and 3); An Enquiry Concerning the Principles of Morals, Dialogues Concerning Natural Religion. Consent of instructor required.

026:166 Kant I 3 s.h.
Main ideas, major texts of Kant’s metaphysics and epistemology. Consent of instructor required.

026:167 Kant II 3 s.h.
Main ideas, major texts of Kant’s ethics and aesthetics. Consent of instructor required.

026:169 Fichte, Schelling, and Hegel 3 s.h.
Main ideas, major texts. Consent of instructor required.

026:171 Nietzsche 3 s.h.
Main ideas, major texts. Consent of instructor required.

026:172 Brentano, Meinong, and Husserl 3 s.h.
Main ideas, major texts. Consent of instructor required.

026:173 Heidegger 3 s.h.
Heidegger’s major writings in relation to metaphysical and epistemological traditions. Consent of instructor required.

026:174 Sartre 3 s.h.
Phenomenological and existentialist works. Consent of instructor required.

026:177 Wittgenstein 3 s.h.
Main ideas, major texts. Consent of instructor required.

026:180 Analytic Ethics 3 s.h.
Topics in contemporary ethical. Consent of instructor required.

026:182 History of Ethics 3 s.h.
Topics in the history of philosophical ethics. Consent of instructor required.

026:184 Moore, Prior, and Ross 3 s.h.
Twentieth-century intutionist ethics; emphasis on epistemological questions. Consent of instructor required.

026:185 Political Philosophy 3 s.h.
Selected topics. Consent of instructor required.

026:186 Metaphysics 3 s.h.
Fundamental topics; seminal works, both classical and contemporary. Consent of instructor required.

026:187 Epistemology 3 s.h.
Problems in contemporary theory of knowledge. Consent of instructor required.

026:188 Philosophy of Mind 3 s.h.
Contemporary topics. Consent of instructor required.

026:189 Philosophy of Language 3 s.h.
Contemporary topics. Consent of instructor required. Same as 103:163.

026:191 Mathematical Logic 3 s.h.
Presentation of central metalogics relating to decidability, completeness, model theory; second-order logic. Consent of instructor required.

026:192 Modal Logic 3 s.h.
Formal techniques developed and applied to problems in linguistic analysis and modal semantics; related philosophical issues. Consent of instructor required.

026:194 Philosophy of Science 3 s.h.
Central topics—for example, scientific explanation, confirmation, the meaning of scientific theories; survey of major 20th-century developments. Consent of instructor required.

026:196 Philosophy of the Human Sciences 3 s.h.
Explanation and understanding; theories and reduction, values and ideology, freedom and causality. Consent of instructor required.

026:198 Topics in Philosophy 3 s.h.
A single philosopher or philosophical problem. Consent of instructor required.

026:247 Research: Metaphysics and Epistemology arr.

026:249 Research Logic and Philosophy of Science arr.


026:253 Thesis arr.

PHYSICAL EDUCATION SKILLS

Coordinator: Carolyn W. Lara-Beaud

The Physical Education Skills Program offers courses that may be used to satisfy a portion of the General Education Program requirements of the College of Liberal Arts. These requirements are discussed in the College of Liberal Arts introductory section of the Catalog.

Students also may take these courses for elective credit.

The faculty members of this program are drawn from the Departments of Exercise Science and Health, Leisure, and Sport Studies.

Courses

28S:005 Fitness and Wellness for Life 2 s.h.
Lecture material applied to the design of a personalized fitness/wellness program in discussion, laboratory sessions. GE: physical education.

28S:006 Abdominal Toning 1 s.h.
GE: physical education.

28S:007 Aerobics: Low Impact 1 s.h.
GE: physical education.

28S:008 Aerobics: High Impact 1 s.h.
GE: physical education.

28S:009 Aquatic Exercise 1 s.h.
GE: physical education.

28S:011 Badminton I 1 s.h.
GE: physical education.

28S:012 Badminton II 1 s.h.
GE: physical education. Prerequisite: 28S:011 or consent of instructor.

28S:013 Bowling I 1 s.h.
GE: physical education. Prerequisite: 28S:033 or consent of instructor.

28S:014 Bowling II 1 s.h.
GE: physical education. Prerequisite: 28S:033 or consent of instructor.

28S:020 Fitness Walking 1 s.h.
GE: physical education.

28S:021 Flexibility 1 s.h.
GE: physical education.

28S:023 Golf 1 s.h.
GE: physical education.

28S:025 Hatha Yoga 1 s.h.
GE: physical education.

28S:026 Hockey: Field 1 s.h.
GE: physical education.

28S:027 Hockey: Floor 1 s.h.
GE: physical education.

28S:028 Hockey: Indoor 1 s.h.
GE: physical education.

28S:032 Jogging 1 s.h.
GE: physical education.

28S:031 Karate I 1 s.h.
GE: physical education.
28S:032 Karate II 1 s.h.
GE: physical education. Prerequisite: 28S:031 or consent of instructor.

28S:033 Kick Boxing I 1 s.h.
GE: physical education.

28S:034 Kick Boxing II 1 s.h.
GE: physical education. Prerequisite: 28S:033 or consent of instructor.

28S:037 Lap Swimming I 1 s.h.
GE: physical education. Prerequisite: 28S:064 or consent of instructor.

28S:038 Lap Swimming II 1 s.h.
GE: physical education. Prerequisite: 28S:037 or consent of instructor.

28S:039 Lifeguard Training I 1 s.h.
Completion of 28S:039 leads to American Red Cross lifeguard certification. Open only to students who pass swimming competency test on first day of class. GE: physical education.

28S:040 Lifeguard Training II 1 s.h.
Continuation of 28S:039, which is prerequisite. GE: physical education.

28S:042 Personal Fitness 1 s.h.
GE: physical education.

28S:045 Racquetball I 1 s.h.
GE: physical education.

28S:047 Relaxation Techniques 1 s.h.
GE: physical education.

28S:049 Rugby 1 s.h.
GE: physical education.

28S:052 Self Defense 1 s.h.
GE: physical education.

28S:053 Slow-Pitch Softball I 1 s.h.
GE: physical education.

28S:054 Slow-Pitch Softball II 1 s.h.
GE: physical education. Prerequisite: 28S:053 or consent of instructor.

28S:055 Soccer I: Outdoor 1 s.h.
GE: physical education.

28S:056 Soccer II: Outdoor 1 s.h.
GE: physical education. Prerequisite: 28S:055 or consent of instructor.

28S:057 Soccer: Indoor 1 s.h.
GE: physical education.

28S:060 Squash 1 s.h.
GE: physical education.

28S:061 Stretch & Tone 1 s.h.
GE: physical education.

28S:063 Swimming I 1 s.h.
GE: physical education.

28S:064 Swimming II 1 s.h.
GE: physical education. Prerequisite: 28S:063 or consent of instructor.

28S:066 Table Tennis 1 s.h.
GE: physical education.

28S:067 Tae Kwon Do I 1 s.h.
GE: physical education.

28S:068 Tae Kwon Do II 1 s.h.
GE: physical education. Prerequisite: 28S:067 or consent of instructor.

28S:069 Tai Chi 1 s.h.
GE: physical education.

28S:070 Tai Chi With Sword 1 s.h.
GE: physical education. Prerequisite: 28S:069 or consent of instructor.

28S:071 Tennis I 1 s.h.
GE: physical education.

28S:072 Tennis II 1 s.h.
GE: physical education. Prerequisite: 28S:071 or consent of instructor.

28S:075 Ultimate Frisbee 1 s.h.
GE: physical education.

28S:077 Volleyball I 1 s.h.
GE: physical education.

28S:078 Volleyball II 1 s.h.
GE: physical education. Prerequisite: 28S:077 or consent of instructor.

28S:079 Weight Control 1 s.h.
GE: physical education.

28S:081 Weight Training I 1 s.h.
GE: physical education.

28S:082 Weight Training II 1 s.h.
GE: physical education. Prerequisite: 28S:081 or consent of instructor.

28S:083 Water Safety Instruction I 1 s.h.
Completion of 28S:083 leads to American Red Cross certification. GE: physical education. Prerequisites: 28S:039 and 28S:040, or equivalents.

28S:084 Water Safety Instruction II 1 s.h.
Continuation of 28S:083, which is prerequisite. GE: physical education.

28S:090 Rhythm Ballroom Dance 1 s.h.
Triple swing, jitterbug, rumba. GE: physical education.

28S:091 Smooth Ballroom Dance 1 s.h.
Fox-trot, waltz, polka, schottische. GE: physical education.

28S:092 Rhythm Country Dance 1 s.h.
Huston shuffle, jitterbug, triple swing, line and novelty dances. GE: physical education.

28S:093 Smooth Country Dance 1 s.h.
Two-step, waltz, polka, line and novelty dances. GE: physical education.

28S:094 Cuban Style Latin Dance 1 s.h.
Rumba, cha-cha, salsas. GE: physical education.

28S:095 South American Latin Dance 1 s.h.
Tango, samba, merengue, paso doble. GE: physical education.

28S:096 Line Dancing I 1 s.h.
GE: physical education.

28S:097 Line Dancing II 1 s.h.
GE: physical education.

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 individual scholarly work at an advanced level.

Total departmental enrollment is approximately 1,700 each semester of the academic year and 150 during the summer session. All courses and advanced laboratories are taught by faculty members. Faculty members also supervise associated laboratories taught by graduate students.

Beyond the elementary level, typical course enrollment is 20-25; there is ample opportunity for individual work. Special introductory courses are offered for majors in physics and astronomy and for others with special interest in these subjects. There are about 70 undergraduate majors, one-quarter of whom are honors students, and 55 graduate students in physics or astronomy.

About 50 percent of graduates with bachelor’s degrees pursue advanced study. Others find positions in secondary school teaching and in government and industrial laboratories. Some use their training as the basis for careers in other fields.

Graduates with M.S. or Ph.D. degrees in physics or astronomy have opportunities for employment in universities, colleges, and research laboratories in government and industry.

**Undergraduate Programs**

The department offers the following programs in both physics and in astronomy: bachelor of science, bachelor of arts, and undergraduate minor. It also offers a double major in physics and astronomy and a bachelor of science in applied physics. Each program is described here.

**Bachelor of Science in Physics**

The B.S. program provides preparation for a career in industry, for employment in research laboratories, or for graduate study in physics and related sciences.

The following courses or their equivalents are required for the Bachelor of Science with a major in physics. Students satisfy the following mathematics and laboratory requirements as well as the “Other Required Courses.” The department encourages students to do additional work.

**MATHEMATICS REQUIREMENT**

Students take all courses in Group A or Group B.

**Group A:**

- **22M:025-026 Calculus I-II** 8 s.h.
- **22M:045-046 Accelerated Calculus With Applications I-II** 8 s.h.

**Group B:**

- **22M:027 Introduction to Linear Algebra** 4 s.h.
- **22M:028 Calculus III** 4 s.h.
Bachelor of Arts in Physics

The B.A. program is designed for students who wish to gain knowledge of physics but do not plan a research-oriented career in physics. This degree program is appropriate for those planning careers in medicine, law, science-related administration, business, technical writing, or secondary-school science teaching (see “Science Education” in this section and in the College of Education section of the Catalog). The B.A. program requires fewer courses in physics and mathematics than the B.S. program, and thus provides for a wider choice of electives.

The following courses or their equivalents (total of 14 courses) are required for the Bachelor of Arts with a major in physics. The department encourages students to do additional work.

22M:025-026 Calculus I-II 8 s.h.
22M:035-036 Engineering Calculus I-II 8 s.h.

Other Required Courses

029:027-028 Physics I-II 8 s.h.
029:029-030 Physics III-IV 8 s.h.
029:115 Intermediate Mechanics 3 s.h.
029:116 Statistical Physics 3 s.h.
029:120-130 Electricity and Magnetism 6 s.h.
029:140 Introduction to Quantum Mechanics I 3 s.h.
029:141 Introduction to Quantum Mechanics II 3 s.h.

Two of these:

029:117 Optics 3 s.h.
029:119 Introduction to Astrophysics I 3 s.h.
029:120 Introduction to Astrophysics II 3 s.h.
029:128 Electronics (may not be repeated) 4 s.h.
029:133 Advanced Laboratory (third semester) 3 s.h.
029:171-172 Mathematical Methods of Physics 6 s.h.
029:174 Introduction to Laser Principles 3 s.h.
029:180 Electromagnetic Foundations of Optics 3 s.h.
029:182 Electra-Optics 3 s.h.
029:184 Optical Signal Processing 3 s.h.
029:186 Radio Astronomy 3 s.h.
029:192 Elementary Particles and Nuclear Physics 3 s.h.
029:193 Introductory Solid State Physics 3 s.h.
029:194 Plasma Physics 3 s.h.
029:195 Plasma Physics 3 s.h.
029:196 Fluid Mechanics 3 s.h.

Additional course work in another science or engineering field, including computer science but not mathematics 5 s.h.

Bachelor of Science in Applied Physics

The B.S. 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 an applied 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 sufficient exposure to physics to allow the student to continue with graduate studies in either physics or astronomy.

The program offers three areas of concentration: optics, solid-state electronics, and computer science. In close consultation with his or her adviser, and with departmental approval, a student also may design a customized concentration area.

An essential component of each concentration is successful completion of a one-semester industrial internship or practicum experience in a research laboratory (an applied physics thesis is required for the latter option). This requirement may result in the need for a ninth semester to fulfill all college requirements.

Because of this, the Four-Year Graduation Plan is not available for the B.S. in applied physics. Well-prepared students will be able to complete the degree in four years. Students should work closely with their advisers on a graduation plan.

The following courses are required.

Common Requirements

In addition to satisfying either Group A or Group B mathematics requirements (see listings under “Bachelor of Science in Physics”), students must successfully complete the following courses or their equivalents.

029:027-028 Physics I-II 8 s.h.
029:029-030 Physics III-IV 8 s.h.
029:118 Statistical Physics 3 s.h.
029:128 Electronics 4 s.h.
029:129 Electricity and Magnetism 3 s.h.
029:132 Intermediate Laboratory 3 s.h.
029:140 Introduction to Quantum Mechanics I 3 s.h.

Computer Science Concentration

22C:016/020/030 Computer Science I, II, III 11 s.h.
22C:040 Computer Organization and Hardware 4 s.h.
029:130 Electricity and Magnetism 3 s.h.

One additional 100-level course chosen from physics or electrical and computer engineering

Optics Concentration

029:117 Optics 3 s.h.
029:130 Electricity and Magnetism 3 s.h.
or
029:180 Electromagnetic Foundations of Optics 3 s.h.

Three of these:

029:174 Introduction to Laser Principles 3 s.h.
029:182 Electra-Optics 3 s.h.
029:184 Optical Signal Processing 3 s.h.
029:193 Introductory Solid State Physics 3 s.h.

Solid-State Electronics Concentration

029:193 Introductory Solid State Physics 3 s.h.
055:032 Introduction to Digital Design 3 s.h.
055:041 Electronic Circuits 4 s.h.
057:006 Engineering II 3 s.h.
057:008 Electrical Circuits 3 s.h.
057:017 Computers in Engineering 3 s.h.
057:018 Principles of Electronic Instrumentation 4 s.h.

Students are encouraged to take additional course work. Advisers can suggest electives that will enrich programs and help students prepare for graduate work.

Bachelor of Science in Astronomy

A balanced and integrated program of astronomy, mathematics, and physics courses is required for the B.S. degree in astronomy. This program prepares students for advanced study in astronomy or astrophysics or serves as an interesting choice of major for a liberal arts education.

The following courses or their equivalents are required for the Bachelor of Science with a major in astronomy. Students satisfy the requirements listed for either Group 1 or Group 2, as well as the “Other Required Courses.”
GROUP 1
22M:025-026 Calculus I-II 8 s.h.
or
22M:045-046 Accelerated Calculus
With Applications I-II 8 s.h.
22M:027 Introduction to Linear Algebra 4 s.h.
22M:028 Calculus III 4 s.h.

GROUP 2
22M:035-036 Engineering Calculus I-II 8 s.h.
or
22M:045-046 Accelerated Calculus
With Applications I-II 8 s.h.
22M:040 Matrix Algebra for Engineers 2 s.h.
22M:041 Differential Equations for Engineers 3 s.h.
22M:042 Vector Calculus for Engineers 3 s.h.

OTHER REQUIRED COURSES
029:027-028 Physics I-II 8 s.h.
or
029:029-030 Physics III-IV 8 s.h.
or
029:061-062 General Astronomy 8 s.h.
or
029:117 Optics 3 s.h.
or
029:118 Statistical Physics 3 s.h.
or
029:119-120 Introduction to Astrophysics-I-II 6 s.h.
or
029:128 Electronics 4 s.h.
or
029:129 Electricity and Magnetism
(requires Calculus III as prerequisite) 3 s.h.
or
029:132 Intermediate Laboratory 3 s.h.
or
029:137 Astronomical Laboratory 2 s.h.
or
029:140 Introduction to Quantum Mechanics I 3 s.h.
or
029:141 Introduction to Quantum Mechanics II 3 s.h.
or
029:194 Plasma Physics 3 s.h.

*Classes are offered alternate years. Students are responsible for registering for these classes when they are available.
Undergraduate majors who plan to pursue graduate study are advised to go as far beyond the minimum requirements listed above as feasible, by taking one or more of the courses listed below. However, only 50 semester hours of 029-prefix courses count toward a single-major bachelor’s degree. Students who complete a double major in physics and astronomy may count up to 68 semester hours of 029-prefix courses toward the degree.

029:117 Optics 3 s.h.
or
029:118 Statistical Physics 3 s.h.
or
029:137 Astronomical Laboratory (additional semester) 3 s.h.
or
029:141 Introduction to Quantum Mechanics II 3 s.h.
or
029:171-172 Mathematical Methods of Physics 6 s.h.
or
029:174 Introduction to Laser Principles 3 s.h.
or
029:186 Radio Astronomy 3 s.h.
or
029:194-195 Plasma Physics 6 s.h.
or
029:196 Fluid Mechanics 3 s.h.

Bachelor of Arts in Astronomy
The B.A. program is designed for students who wish to gain considerable knowledge of astronomy but who do not plan a research-oriented career in the field. This degree program is appropriate for those planning careers in secondary school science teaching or science-related administration (see *Science Education* in this section and in the College of Education section of the Catalog). It also is appropriate for those preparing for professional school. The B.A. program requires fewer courses in physics and mathematics than the B.S. program, and thus provides for a wider choice of electives.

The following courses or their equivalents are required for the B.A. with a major in astronomy.

22M:025-026 Calculus I-II 8 s.h.
or
22M:035-036 Engineering Calculus I-II a s.h.
029:027-028 Physics I-II 8 s.h.
or
029:029-030 Physics III-IV 8 s.h.
or
029:061-062 General Astronomy 8 s.h.
or
029:115 Intermediate Mechanics 3 s.h.
or
029:117 Optics 3 s.h.
or
029:118 Statistical Physics 3 s.h.
or
029:119-120 Introduction to Astrophysics-I-II 6 s.h.
or
029:128 Electronics 4 s.h.
or
029:129 Electricity and Magnetism
(requires Calculus III as prerequisite) 3 s.h.
or
029:132 Intermediate Laboratory 3 s.h.
or
029:137 Astronomical Laboratory 2 s.h.

Double Major in Physics and Astronomy
Students working toward a double major in physics and astronomy must earn a minimum of 56 semester hours in course work outside physics and astronomy. They also may apply up to 68 semester hours earned in physics and astronomy course work toward the 124 semester hours required for graduation. Students interested in the double major should consult with their advisor. For general requirements of the College of Liberal Arts, see the College of Liberal Arts introductory 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.)

B.A. in Astronomy
Before the third semester begins: math through calculus I and II, physics I and II, and at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: physics III and IV, at least one more course in the major, and at least one-half of the semester hours required for graduation
Before the seventh semester begins: three more courses in the major and at least three-quarters of the semester hours required for graduation

B.S. in Astronomy
Before the third semester begins: calculus I and II, physics II, and at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: math through calculus III, physics III and IV, linear algebra, two other courses in the major, and at least one-half of the semester hours required for graduation
Before the seventh semester begins: four more courses in the major and at least three-quarters of the semester hours required for graduation
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. and B.S. in Physics
Before the third semester begins: calculus II, physics II, and at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: physics III and IV, calculus III, linear algebra, up to two more courses in the major, and at least one-half of the semester hours required for graduation
Before the seventh semester begins: two to four more courses in the major and at least three-quarters of the semester hours required for graduation
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
Junior and senior majors who are members of the University Honors Program may take 6-8 semester hours of 029:099 Honors Seminar and conduct an investigation with the guidance of a faculty member as part of their programs for the B.A. or B.S. with honors in physics, applied physics, or astronomy. They must present a written research report (honors thesis) and describe the results of the research at a departmental seminar.

Minor in Physics
A minor in physics requires 15 semester hours with a grade-point average of at least 2.00. Those 15 hours must include 12 semester hours taken at The University of Iowa, chosen from 029:029 (prerequisites: 029:017 and 029:018,
or 029:027 and 029:028), 029:030, and any 100-level physics courses.
There is no minor offered in applied physics.

Minor in Astronomy
A minor in astronomy requires 15 semester hours of credit in astronomy and physics courses with a grade-point average of at least 2.00; 12 semester hours must be taken at The University of Iowa. The 15 semester hours must include 12 semester hours of upper-level course work with 6 semester hours chosen from the following.

029:119-120 Introduction to Astrophysics-I-II 6 s.h.
029:137 Astronomical Laboratory 2 s.h.
The remaining course work may be chosen from any 100-level astronomy or physics courses.

Graduate Programs
Two advanced degrees are offered in physics: the Master of Science and the Doctor of Philosophy. One is offered in astronomy: the Master of Science. Students who wish to pursue a program in astronomy beyond the M.S. may qualify for a Ph.D. in physics with specialization and a dissertation in astronomy or astrophysics. An M.S. is not prerequisite to the Ph.D.

All graduate students who intend to pursue a Ph.D. in physics must pass the qualifying exam, usually taken before the fall semester of the second year of graduate study (see “Doctor of Philosophy in Physics”).

Each entering graduate student is assigned a faculty adviser, who assists in preparing a plan of study and in guiding the student’s progress.

The Department of Physics and Astronomy participates in an interdisciplinary doctoral program with the Program in Applied Mathematical Sciences (see the Graduate College section of the Catalog).

Master of Science in Physics
The M.S. in physics is offered with either thesis or critical essay. The program for the M.S. with thesis requires a thesis based on an original experimental or theoretical investigation by the candidate. The program for the M.S. with critical essay requires an independent study of the literature on a chosen topic, and a critical essay on that topic.

The degree may be terminal or an intermediate step toward a Ph.D. In either case the final examination is oral, conducted by a committee of three faculty members.

The M.S. with thesis requires a minimum of 30 semester hours of graduate work in courses numbered 170 or above, with at least 15 semester hours at the 200 level, and a grade-point average of at least 3.00 (B). The 30 semester hours must include at least 6 chosen from 029:232, 029:233, 029:234, and 029:235. No more than 6 of the required 30 semester hours may be in 029:220 and 029:282. Seminars do not count for credit toward the 30 semester-hour requirement. Up to one-third of the course work may be in graduate courses in related fields, such as meteorology and electrical engineering; selection of such courses is encouraged.

The M.S. with critical essay requires a minimum of 30 semester hours of graduate work in courses numbered 170 or above, with at least 15 semester hours at the 200 level, and a grade-point average of at least 3.00 (B). No more than 4 semester hours may be in 029:220 and 029:282. Seminars do not count toward the required 30 semester hours. Up to one-third of the course work may be in graduate courses in related fields, such as meteorology and electrical engineering; selection of such courses is encouraged.

Doctor of Philosophy 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 first-year graduate work. The examination, which may be repeated only once, is given each year before the beginning of the fall semester and normally is taken before the beginning of the second year of graduate study.

All Ph.D. candidates 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. with a major in physics includes thorough course work in both classical and quantum physics for all candidates, whether their specialized research is to be in an experimental or a theoretical area.

Students must take at least 24 semester hours of 200-level courses in the department, excluding 029:220, 029:281, 029:282, and seminars. The following program is strongly recommended as minimum preparation for the qualifying examinations.

029:205 Classical Mechanics 3 s.h.
029:212 Statistical Mechanics I 3 s.h.
029:213-214 Classical Electrodynamics 6 s.h.
029:245-246 Quantum Mechanics I-II 6 s.h.

Advanced mathematics, such as complex variables and tensor analysis, is used freely in these courses. An introduction is given in 029:171-172 Mathematical Methods of Physics. The selection of less advanced course work depends on the adequacy of the students’ preparation for graduate work; students’ choice of more advanced and specialized courses depends on the direction in which their interests develop.

After a 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 adviser 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 adviser, to a widely distributed, refereed scientific journal.

Financial Support
Students qualified for graduate study are encouraged to apply for fellowships and assistantships. Inquiries should be directed to the department 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. National supercomputers are accessed via the Internet. The central machine shop is fully equipped and staffed with skilled instrument makers and machinists, and there are several electronics and machine shops for the use of advanced students and the research staff.

Experimental research is conducted in astronomy (optical and radio), atomic and molecular physics, elementary particle physics, laser physics, medical physics, nuclear physics,
plasma physics, solid state physics, and space physics. Extensive facilities are available for construction of specialized research equipment and for processing and analysis of data.

Experiments in nuclear physics, which study nuclear reactions by colliding heavy ions, are carried out at large national accelerators in the United States and Europe.

Experiments on fundamental thermal, electrical, optical, and magnetic properties of metals, alloys, compounds, semiconductors, and high-temperature superconductors are included in the experimental solid state program, as are surface studies of metals and semiconductors.

State-of-the-art semiconductor materials and devices are grown in two molecular beam epitaxy machines.

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 semiconductor materials, and for plasma diagnostics.

Experimental research in elementary particle physics is carried out at Fermi National Accelerator Laboratory, Los Alamos National Laboratory, Stanford Linear Accelerator Center, CERN in Switzerland, DESY in Germany, 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 20-inch telescope at a dark-sky site in Arizona. There also is a fully automated 7-inch refractor on the roof of Van Allen Hall. Both instruments are equipped with CCD cameras and a variety of filters, and are used for research projects as well as instructional laboratories at all levels.

There is a 4.5-meter radio telescope on the roof of Van Allen Hall, which is used for instruction and student research projects.

Research programs in galactic and extragalactic radioastronomy 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 extragalactic radio sources; the formation of powerful winds in young, luminous stars; radiowave scattering in the interstellar and interplanetary media; and interacting binary stars.

Active theoretical research is carried on in astrophysics; atomic, molecular, and optical physics; elementary particle physics; laser physics; mathematical physics; nuclear physics; plasma physics; solid-state 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, and Polar.

Physics - Primarily for Undergraduates

Courses

Prerequisites and corequisites are specified as guides and may be waived by the instructor. Courses 029:003, 029:005, 029:008, 029:009, 029:011-012, 029:017-018, 029:027-028, 029:050, 029:051, 029:052, and 029:061-062 are approved for College of Liberal Arts General Education in the natural sciences.

Physics - for Undergraduate and Graduate Students

029:000 Cooperative Education 0 s.h.
029:001 College Physics 4 s.h.
029:002 College Physics 4 s.h.
029:003 Introductory Physics I 3-4 s.h.
029:004 Introductory Physics II 3-4 s.h.
029:005 Basic Physics 3-4 s.h.
029:006 Principles of Physics 3 s.h.
029:007 Dynamics of Matter 3 s.h.
029:008 Electricity and Magnetism 3 s.h.
029:009 Quantum Mechanics 3 s.h.
029:010 Thermal Physics 3 s.h.
029:011 College Physics 4 s.h.
029:012 College Physics 4 s.h.
029:017 Introductory Physics I 3-4 s.h.
029:018 Introductory Physics II 3-4 s.h.
029:019 Modern Physics 3 s.h.
029:020 Advanced Physics 3 s.h.
029:021 Mechanics 3 s.h.
029:022 Electromagnetism 3 s.h.
029:023 Modern Physics 3 s.h.
029:024 Quantum Mechanics 3 s.h.
Astronomy: Primarily for Undergraduates

029:204 Advanced Plasma Physics I 3 s.h.
Microscopic plasma behavior; statistical mechanics of plasmas; Landau theory; bumps; Boltzmann-Plank equation; relaxation processes; Balasue-Lenard equation; Vlasov equation and linearized wave motion; shocks, nonlinear plasma waves, and instabilities; fluctuations and radiation processes; topics from recent literature. May be repeated. Consent of instructor required.

Astronomy-Primarily for Undergraduates

029:050 Modern Astronomy 3-4 s.h.
Survey for nonscience majors; topics from visible phenomena in the sky to the latest astronomical findings; properties of planets, stars, and solar system objects; life cycle of stars, galaxies, and quasars; origin of the universe. Open only to non-physics or astronomy majors. GE: natural sciences.

029:051 Introductory Astronomy Laboratory 1 s.h.
Laboratory for 029:050. Prerequisite: 3 semester hours in 029:050 or equivalent. GE: natural sciences.

029:052 Characteristics and Origins of the Solar System 3 s.h.
Well-defined topics in solar system astronomy, such as celestial mechanics, structure and energy source of sun, production of craters on moon and other solar system objects, formation of solar system, properties of planetary atmospheres including human modification of Earth’s atmosphere, astronomical perspectives on origin of life; for nonmajors. GE: natural sciences.

029:061 General Astronomy 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. GE: natural sciences. Prerequisite: four years of high school math or consent of instructor.

029:062 General Astronomy 4 s.h.
Continuation of 029:061; qualitative and quantitative introduction to properties and evolution of sun, stars, interstellar matter, galaxies; cosmology; laboratory emphasis on observation with telescopes. GE: natural sciences. Prerequisite: four years of high school math or consent of instructor.

029:064 Reading in Astronomy arr.

Astronomy-for Undergraduate and Graduate Students

029:104 Reading in Astronomy arr.

029:106 Special Topics in Astronomy arr.

029:119 Introduction to Astrophysics I 3 s.h.
Fundamentals of astrophysical processes in solar system Objects, stars, nebulae, interstellar medium, galaxies; topics include stellar spectra, binary stars, interstellar gas and dust, stellar and galactic kinematics, stellar evolution, HI regions, radiation processes in galaxies and quasars, stochastic processes in astrophysics. Prerequisites: 029:029, 029:061, 029:062, and 22M:018 or 22M:036. Recommended: computer programming experience.

029:120 Introduction to Astrophysics II 3 s.h.
Continuation of 029:119. Prerequisites: 029:029, 22M:026 or 22M:036; and 029:119.

029:137 Astronomical Laboratory 2 s.h.
Techniques and instrumentation in optical and radioastronomy. May be repeated. Prerequisite: 029:062 or consent of instructor.

029:186 Radio Astronomy 3 s.h.
Survey of radio astronomy, emphasizing technical aspects; radiation, antennas, receivers, radio spectrometry, interferometer arrays and aperture synthesis, emission mechanisms, pulsars, supernova remnants, radio galaxies.

Astronomy-Primarily for Graduate Students

029:232 Theoretical Astrophysics I 3 s.h.
Radiative transfer, theory of stellar photospheres and continuous spectra of stars, formation of absorption lines in spectra of stars.

029:233 Theoretical Astrophysics II 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.

029:234 Stellar Structure and Evolution 3 s.h.
Structure of stellar interiors; nucleosynthesis in stars and evolution of stars.

029:235 Special Topics in Astrophysics 1-3 s.h.
Advanced lectures. May be repeated.

Current research.

029:282 Research: Astronomy arr.
Original research in observational, theoretical astronomy.

POLITICAL SCIENCE

Chair: John S. Nelson
Professors emeriti: Lane Davis, Russell M. Ross

Adjunct professor: Tom Rice

Visiting professors: Alfonso J. Damian

Associate professors: Gary R. Covington, Douglas Dion, Timothy M. Hagle, Vicki L. Hehl, Charles R. Shipan

Assistant professors: Frederick Boehmke, Rodney B. Hall, Kelly M. Kadera, Denise V. Powers, David P. Redlawsk

Undergraduate degrees: B.A., B.S. in Political Science

Undergraduate nondegree program: minor in Political Science

Graduate degrees: M.A., Ph.D. in Political Science

Web site: http://www.uiowa.edu/-polisci

Undergraduate Programs

For more detailed descriptions of the undergraduate programs in political science, see the Guide to Undergraduate Study in Political Science, available in the departmental office and on the web site. Also available is the brochure Careers and the Study of Political Science: A Guide for Undergraduates.

Bachelor of Arts

Students seeking the B.A. degree with a major in political science must complete 33 semester hours of course work. Rule of grades and grade-point average requirements for the B.S. are the same as those for the B.A. degree. Credit for 030:029 First-Year Seminar, 030:193 Undergraduate Research, and 030:194 Senior Research Project/Paper cannot be applied to the major. Students must take at least 12 of the required 33 semester hours in political science at The University of Iowa.

Students must maintain a grade-point average of at least 2.00 in all political science courses overall and in all political science courses taken at The University of Iowa.

Bachelor of Science

Students seeking the B.S. degree with a major in political science must complete 33 semester hours of course work. Residence rules and grade-point average requirements for the B.S. degree are the same as those for the B.A. degree. Credit for 030:029 First-Year Seminar, 030:193 Undergraduate Research, and 030:194 Senior Research Project/Paper cannot be applied to the major.

The following course work is required.

030:001 Introduction to American Politics 3 s.h.

Four of these:
030:030 Introduction to Political Thought and Political Action 3 s.h.
030:040 Introduction to the Politics of the Industrial Democracies 3 s.h.
030:041 Introduction to the Politics of Russia and Eurasia 3 s.h.
030:042 Introduction to the Politics of Developing Areas 3 s.h.
030:050 Introduction to Political Behavior 3 s.h.
030:060 Introduction to International Relations 3 s.h.
030:061 Introduction to American Foreign Policy 3 s.h.
030:070 Introduction to Political Communication 3 s.h.

All of these:
030:100 Undergraduate Political Research 3 s.h.
030:193 Undergraduate Research Tutorial (honors students may substitute 030:185 with B.S. adviser’s consent) 3 s.h.

Additional political science courses at the 100 level 12 s.h.

At least 12 semester hours of 100-level courses must be taken in regularly scheduled classroom work; 030:100 is included in these hours; 030:185, 191, 192, 193, and 194 may not be included in these hours.

One of the sets of three mathematics courses listed under “Approved Math/Statistics Courses” 10-11 s.h.

Recommended but not required: 030:194 Senior Research Project/Paper 3 s.h.
**APPROVED MATHEMATICS/STATISTICS COURSES**

The following sets of mathematics/statistics courses are approved for the B.S. Other sets of courses may be used with written approval of the B.S. adviser.

Set 1:
- 22M:017 Calculus and Matrix Algebra for Business (22M:021, 22M:025, 22M:035, or 22M:045 can be substituted) 4 s.h.
- 22S:102 Introduction to Statistical Methods 3 s.h.
- 22S:148 Intermediate Statistical Methods 3 s.h.

Set 2:
- 06E:071 Statistics for Strategy Problems (06E:050 can be substituted) 3 s.h.
- 22M:017 Calculus and Matrix Algebra for Business 4 s.h.
- 22M:100 Statistics for Business 4 s.h.

Set 3:
- 22M:025 Calculus I (22M:021, 22M:035, or 22M:045 can be substituted) 4 s.h.
- 22M:026 Calculus II (22M:022, 22M:036, or 22M:046 can be substituted) 4 s.h.
- 22S:102 (07P:143) Introduction to Statistical Methods 3 s.h.

**Concentrations in Political Science**

Students may elect to complete one or two concentrations while fulfilling the requirements for the B.A. or B.S. degree. Students who complete a concentration area and request recognition from the department receive a document validating their accomplishment.

Each concentration consists of four courses. Concentrations are available in American institutions, international relations, law and politics, political communication, political economy, political processes, political theory, politics of democratization, politics of developing areas, and politics of industrial democracies. Lists of courses approved in each area are available in the department. For more information consult the Guide to Undergraduate Study.

**Teacher Licensure**

Undergraduates planning to emphasize political science in their teacher training should consult the College of Education for requirements.

The courses 030:001 Introduction to American Politics and 030:110 The American Political System fulfill the requirement for Iowa teacher licensure.

**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: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: two courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: six courses in the major and at least three-quarters of the semester hours required for graduation

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

**Bachelor of Science**

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: two courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester: eight courses in the major, including two of the three required mathematics/statistics courses and 030:100, and at least three-quarters of the semester hours required for graduation

Before the eighth semester: 11 courses in the major, including 030:193 and all courses listed before it

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's Degrees with Honors**

In addition to the checkpoints for the B.A. and B.S. degrees, honors candidates must complete 030:180 before the seventh semester begins.

**Honors**

The program leading to a B.A. or a B.S. with honors is open to students with a minimum cumulative grade-point average of at least 3.20 overall and in political science. To graduate with honors, students must maintain a grade-point average of at least 3.50 in political science and a cumulative grade-point average of at least 3.20. Students are encouraged to take 100-level honors seminars as often as possible, although the program requires only 9 semester hours of 100-level honors course work with a grade of B or higher in each course.

Honors students must complete 030:180 Honors Seminar on the Study of Politics, preferably as sophomores. They also must take at least one additional honors seminar, 030:180 Honors Seminar on American Politics, 030:182 Honors Seminar on Political Theory, 030:183 Honors Seminar on Comparative Politics, or 030:184 Honors Seminar on International Politics. The last 3 semester hours required for graduation with honors in political science may be earned by completing 030:185 Honors Research Project or 030:186 Honors Senior Thesis. Contact the department honors adviser for more information.

**National Honor Society**

The department sponsors a chapter of Pi Sigma Alpha. Students who have a cumulative grade-point average of at least 3.30, have attained junior standing, and have completed 15 semester hours of course work in political science are considered for membership. Consult the departmental honors adviser for more information.

**Minor**

To receive a minor in political science, students must take 15 semester hours in political science courses, 12 of which must be taken in courses at The University of Iowa numbered 030:100 and above (credit from 030:029 First-Year Seminar, 030:191 Government Internship, and 030:192 Washington Internship cannot be applied to the minor). Students may complete an area concentration (see “Concentrations in Political Science”).

Students must have a grade-point average of at least 2.00 in all course work in the minor. No course taken pass/nonpass can be counted toward the minor.

**Graduate Programs**

For students planning academic careers, the department has a program leading to a Doctor of Philosophy in political science. The department usually offers the master’s degree only as a preliminary step toward the Ph.D.

**Master of Arts without Thesis**

The requirements for the M.A. without thesis include completion of at least 30 semester hours of graduate work with a grade-point average of at least 3.25 and review of the student’s record by a final examination committee, which may waive the final oral examination. If the evaluation committee convened at the end of the student’s first year of courses 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 a 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 Ph.D. program in political science 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.

About seven Ph.D. students are admitted 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.

**Curriculum**

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 today’s political scientist must understand thoroughly. Special attention is given to research design, collection of observations, analysis and interpretation of data.

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 comprehensive examinations by the end of the third 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.

Five fields of study are available: American politics, comparative politics, international relations, political theory, and for those who wish to go beyond the basic methodology training, research methods. Each student chooses three fields of study for the comprehensive examination.

A comprehensive statement of departmental requirements is set forth in *Guide to Doctoral Study in Political Science*, available in the departmental office and on the web site. For general graduate admission and degree requirements, see the Graduate College section of the Catalog.

**Courses**

**For Undergraduates**

Courses numbered below 100 are introductory; those numbered 100 to 199 are advanced.

*Courses 030:029, 030:191, and 030:192 do not count toward the major or minor in political science; 030:191 and 030:192 are offered only satisfactory/fail.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>030:000</td>
<td>Cooperative Education Training Assignment</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>030:001</td>
<td>Introduction to American Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:010</td>
<td>First-Year Seminar</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>030:030</td>
<td>Introduction to Political Thought and Political Action</td>
<td>3 s.h.</td>
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<tr>
<td>030:040</td>
<td>Introduction to the Politics of the Industrial Democracies</td>
<td>3 s.h.</td>
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<tr>
<td>030:041</td>
<td>Introduction to the Politics of Russia and Eurasia</td>
<td>3 s.h.</td>
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<tr>
<td>030:042</td>
<td>Introduction to the Politics of Developing Areas</td>
<td>3 s.h.</td>
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<tr>
<td>030:050</td>
<td>Introduction to Political Behavior</td>
<td>3 s.h.</td>
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<tr>
<td>030:055</td>
<td>Introduction to International Relations</td>
<td>3 s.h.</td>
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<tr>
<td>030:061</td>
<td>Introduction to American Foreign Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:070</td>
<td>Introduction to Political Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:100</td>
<td>Understanding Political Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:110</td>
<td>The American Political System</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:111</td>
<td>Municipal Government and Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:112</td>
<td>Minority Representation in American Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:113</td>
<td>American State Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:114</td>
<td>Political Parties</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:115</td>
<td>The Presidency</td>
<td>3 s.h.</td>
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</tbody>
</table>

**For Graduates**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>030:116</td>
<td>American Constitutional Law and Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:117</td>
<td>Law and Social Change</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:119</td>
<td>Problems in American Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:120</td>
<td>Public Administration and Bureaucratic Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:121</td>
<td>American Elections</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:122</td>
<td>Government Regulation of Business</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:123</td>
<td>Politics and American Economy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:125</td>
<td>Government and Public Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:134</td>
<td>Postmodern Political Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:135</td>
<td>Introduction to Positive Political Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:137</td>
<td>Strategy in Politics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:138</td>
<td>Current Political Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>030:139</td>
<td>Political Issues</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
030:140 Government and Politics of Europe 3 s.h.
Political institutions, processes of selected European countries. Prerequisite: 030:040.

030:141 Russian/PostSoviet Politics 3 s.h.
How Soviet political system developed and functioned 1917-1985: transformations leading to 1991 break-up; emerging forms of governance, politics in former Soviet republics; GE: foreign civilization and culture. Prerequisite: 030:041 or consent of instructor.

030:142 Tracking Democration in Post-Communist States 3 s.h.
Democracy's varied experience in post-communist countries (Central Europe to Central Asia) that have similar political/economic pasts, distinctive cultures/geographies; causes of success, failure. Prerequisite: 030:041 or consent of instructor.

030:143 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: foreign civilization and culture. Same as 039:178.

030:144 Latin American Government 3 s.h.
Governmental institutions, major interest groups; focus a" area as a whole. GE: foreign civilization and culture.

030:146 African Development 3 s.h.
Problems of economic, political, spatial integration in Africa; patterns of economic development and nation building. GE: foreign civilization and culture or social sciences. Same as 044:161, 141:146.

030:147 Ethnicity, Nationalism, and States in Transition 3 s.h.
Ethnic identities in modern societies; nationalism and the rise and fall of nation-states; constitutional mechanisms and state policies for reducing conflict within divided states, between minority and majority populations.

030:148 The Politics of Southern Africa 3 s.h.
Major forces of political conflict, especially in South Africa; implications for development, stability of Africa and the West. GE: foreign civilization and culture. Same as 141:148.

030:149 Problems in Comparative Politics 3 s.h.
Structures, functions, behaviors of different political systems. May be repeated with consent of instructor.

030:150 Politics of Emerging Market Economies 3 s.h.
Politics and international economic relations of a select group Of countries in Africa, Asia, and Latin America that have achieved rapid economic growth and/or successful democratization (e.g., Taiwan, Thailand, South Africa, Brazil, Mexico).

030:151 Political Leadership 3 s.h.
Foundations, effects of leadership in different political systems.

030:152 The Legislative Process 3 s.h.
Comparative legislative processes, behavior; focus on legislative systems analysis, legislative institutionalization, legislature and its environment, organizational constraints on legislative behavior, recruitment of legislators, web of legislative interactions, legislative voting behavior. May be repeated with consent of instructor.

030:153 The Judicial Process 3 s.h.
Role of courts, lawyers, judges, interest groups in the American political system.

030:154 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.

030:155 Social Movements and Collective Action 3 s.h.
Rival theories of the occurrence, timing, form, and success of collective political behavior: revolutions, rebellions, social movements.

030:156 Politics of Ethnic and Cultural Conflict 3 s.h.
Origins, nature, political consequences of communal cleavage and conflict in selected contemporary societies and international settings.

030:157 Voting Behavior and Elections 3 s.h.
Determinants of voting behavior; correlates of political participation, political apathy; political socialization processes; nature and functions of elections.

030:158 The Criminal Justice System 3 s.h.
Role of actors, institutions that constitute and participate in the American criminal justice system.

030:159 Government and Politics of Eastern Europe 3 s.h.
Political institutions, processes in countries of central and eastern Europe; challenges of social, political, and economic transition and impact of different historical legacies.

030:160 International Politics 3 s.h.
Concepts and problems war, conflict resolution, political economy. Prerequisite: 030:060 or consent of instructor.

030:161 International Organization and World Order 3 s.h.
How and why states have developed regularized patterns of interaction in the spheres of economics and security through international organizations and international regimes; regional integration processes, multilateralism.

030:162 American Foreign Policies 3 s.h.
Ends pursued, problems encountered, means employed by the United States in relations with other states and international organizations. Prerequisite: 030:061 or 098:067 of instructor.

030:163 American Foreign Policy Institutions 3 s.h.
Foreign policy process in the United States; focus on national security law, the White House, state and defense departments, the Central Intelligence Agency, Congress, news media, public opinion.

030:164 Continuity and Change in the International System 3 s.h.
Continuity and change in patterns of international politics; usefulness of literature on international relations in explaining historically continuous and historically distinct international behaviors.

030:165 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.

030:166 Global Political Communication 3 s.h.
How television and the internet are creating a global culture within which political leaders and nations interact.

030:167 Politics and the Multinational Enterprise 3 s.h.
Political factors affecting a firm's decision to go multinational; effects on home and host countries; political risk management; bargaining between states and corporations; regulation of multinationals by nation-states and international organizations; political implications of global flows.

030:168 Russian Foreign Policy 3 s.h.
Russian foreign policy between former USSR or Eastern European states and between them and other states; sources of foreign policy goals, strategies; similarities, differences between these states' objectives, strategies, capabilities. Prerequisite: 030:060.

030:169 Problems of International Politics 3 s.h.
Problems in studying international system, structures, functions, behavior. May be repeated.

030:170 The Politics of International Economics 3 s.h.
Political, historical, economic, and social aspects of trade, monetary systems, foreign investment, aid, dependency, global interdependence.

030:171 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 044:153.

030:172 Political Communication and Cognition 3 s.h.
Representative topics: structures, processes of political thinking and talking, especially in electronic societies; ads, experts, hearings, ideologies, media, news, publics, schemas, speeches, symbols.

030:173 Introduction to Public International Law 3 s.h.
Principles of law that determine rights and duties of nations in their dealings with each other; contemporary international problems, controversies. Same as 047:193, 091:195.

030:174 Multimedia Politics 3 s.h.
America's" politics and communication via multimedia channels; television, World Wide Web.

030:175 Politics of Film 3 s.h.
Issues in the popular politics of aesthetics, communication, culture, and myth, explored through analysis of films. May be repeated.

030:176 French Politics and Society 3 s.h.
Modem French history, politics, society, geography, culture.

030:177 Human Rights in the World Community: Problems of Law and Policy 3 s.h.
Human rights, their moral and legal basis, their promotion and protection through governments and international organizations; comparative and international analysis of equality and nondiscrimination. Junior or senior standing required. Same as 047:193, 091:193.

030:178 The Challenge of Federalism 3 s.h.
Difficulty of maintaining federal stability, illustrated by the experience of several federations; challenges such as ethnic diversity, protection of minority rights, secession, the role of institutions.

030:179 Transitions to Democracy 3 s.h.
Comparative examination of transitions from authoritarian rule to democracy in Eastern and Southern Europe, Latin America, Asia. Prerequisite: 030:060 or 030:060 or 030:060 or 030:041 or 030:042 or 030:05 or 030:060 or 030:061 or 030:062.

030:180 Honors Seminar on the Study of Politics 3 s.h.
History, scope, methods; diverse issues, theories, techniques in systematic study. Honors standing in political science or consent of instructor required.

030:181 Honors Seminar on American Politics 3 s.h.
Ideas, issues, methods in selected area. Junior or senior honors standing in political science or consent of instructor required. May be repeated.

030:182 Honors Seminar on Political Theory 3 s.h.
Intensive study of ideas, issues, methods in a" area of political theory. Junior or senior honors standing in political science or consent of instructor required. May be repeated.

030:183 Honors Seminar on Comparative Politics 3 s.h.
Ideas, issues, methods in selected area. Junior or senior honors standing in political science or consent Of instructor required. May be repeated.

030:184 Honors Seminar on International Politics 3 s.h.
Ideas, issues, methods in selected area. Junior or senior honors standing in political science or consent of instructor required. May be repeated.

030:185 Honors Research Project 3 s.h.
Special research assistance to political science faculty. Junior or senior honors standing in political science and consent Of instructor required.

030:186 Honors Senior Thesis 3 s.h.
Supervised research and writing. Open only to honors students in political science who are not in their last semester of course work before graduation. Consent of instructor required.

030:190 Independent Study arr.
Supervised special projects. Consent of instructor required.

030:191 Government Internship 1-3 s.h.
Undergraduate internships in state or national legislative office, executive agency, or with election campaign official. May be repeated. Consent of instructor required.

030:192 Washington Internship arr.
Open only to students participating in the Washington Center. Consent of instructor required.

030:193 Undergraduate Research Tutorial 3 s.h.
Individual training in applied research. Consent of supervising faculty member required.

030:194 Senior Research Project/Paper 3 s.h.
Supervised research and writing. Open only to political science students not in their last semester of course work before graduation. Consent of instructor required.

For Graduate Students

Courses numbered 200 to 299 are core courses; those numbered 300 and above are advanced.

030:200 Introduction to Political Analysis 4 s.h.
Conceptual problems of political analysis; empirical research strategies, philosophy of science. Doctoral standing in political science or consent of instructor required.

030:201 Introductory Methodology 4 s.h.
Observational methods, data analysis; critical analysis of applied social research; laboratory on computing in political science. Doctoral standing in political science or consent of instructor required.
030:204 Computational Methods 3 s.h.
Methods for political analysis; calculus, matrix algebra, set theory. Doctoral standing in political science or consent of Instructor required.

030:205 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.

030:210 American Politics 3-4 s.h.
Major literature of American politics, emphasis on comparative, systems, and formal studies. Doctoral standing in political science or consent of instructor required.

030:231 Applications of Spatial Models 3-4 s.h.
Use of spatial voting models to analyze elections, legislatures, other collective choice mechanisms.

030:240 Comparative Politics 3-4 s.h.
Current approaches analysis of systems; emphasis on conceptual, methodological issues. Doctoral standing in political science or consent of instructor required.

030:241 Crossing Borders Seminar: Introductory 3-4 s.h.

030:242 Crossing Borders Seminar 3-4 s.h.

030:260 International Politics 3-4 s.h.
Analyzes the study of international politics. Doctoral standing in political science or consent of instructor required.

030:300 Philosophy of Political Inquiry 3-4 s.h.
Purposes, methods in study of politics.

030:301 Intermediate Methodology 3-4 s.h.
Techniques of data analysis; statistical models and their relationship to hypotheses tested. Doctoral standing in political science required. prerequisite: one semester of intermediate statistics.

030:302 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. Doctoral standing in political science or consent of instructor required.

030:303 Linear and Nonlinear Models in Political Science 3-4 s.h.
Statistical inference in regression models; matrix approach; simultaneous equation models; models with limited dependent variables; GLS, GLS, IV, ML, estimation; emphasis on interpretation, application in political science.

030:304 Experimental Methods 4 s.h.
Methods, techniques used in political science experiments.

030:305 Advanced Nonlinear Models 4 s.h.
Extension of 030:303; Logit, Probit, Tobit models by maximum likelihood; event count and duration models, dynamic models including unit roots, VARs, error correction models; simultaneous equation models and identification. Prerequisite: 030:303 or consent of instructor.

030:310 Applications of Formal Models to 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.

030:315 The Presidency 3-4 s.h.
American chief executive: history, recruitment, behavior, roles, responsibilities, powers, relationships with other institutions.

030:319 Problems in American Politics 3-4 s.h.
Problems in study of American political system; structures, functions, behavior. May be repeated.

030:337 Game-Theoretic Models of Collective Choice 4 s.h.
Techniques for analyzing game-theoretic models of political science literature.

030:338 Colloquium in Political Theory 1-4 s.h.
Issues and works; no subject repetition in six consecutive semesters. May be repeated.

030:339 Problems in Political Theory 1-4 s.h.
Prescriptive and explanatory political theory. May be repeated.

030:340 Politics of Europe 3-4 s.h.
Selected systems or common political phenomena.

030:341 Democracy and Democratization 4 s.h.
Competing conceptions of democratic governance and competing theoretical frameworks for the study of successful or attempted regime change from authoritarian rule towards democracy; emphasis on reading and critically analyzing diverse approaches.

030:342 Nationalism: Theory and Practice 4 s.h.
Theories of nationalism and nature of ethnicity; national identities in modern society; nationalism, rise and fall of nation states; constitutional mechanisms for reducing ethnic-based political and violent conflict.

030:343 Asian Political Systems 3-4 s.h.
Democratic, transitional, and totalitarian types of government; emphasis on leadership recruitment, social control, political participation.

030:349 Problems of Comparative Politics 3-4 s.h.
Problems in study of comparative political systems; structures, functions, behavior. May be repeated.

030:350 Political Economy and Public Policy in Developing Countries 3-4 s.h.
Relationships between economic, political change in developing countries, their bearing on formulation of development policy; emphasis on significance of social theory for resolving dilemmas posed by alternative development strategies.

030:352 Legislative Behavior 3-4 s.h.
Institutions, processes, behavior in the United States, Europe, or developing countries. May be repeated.

030:353 Political Psychology 3-4 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.

030:354 Political Socialization 3-4 s.h.
Development of political roles, attitudes, orientations; emphasis on theoretical, comparative approaches. May be repeated.

030:356 Political Alienation 4 s.h.
Comparative and cross-cultural literature of political alienation; focus on relationship of political alienation and political support to various causes, consequences.

030:357 Public Opinion and Electoral Behavior 3-4 s.h.
Political attitudes and beliefs in mass publics; voting behavior; how electoral systems function.

030:361 Foreign Policy 3-4 s.h.
Foreign policy making and international behavior in relation to theories; findings from; selected countries.

030:362 International Conflict and Cooperation 4 s.h.
Recent theoretical and empirical debates in international relations literature; emphasis on formal and quantitative research.

030:367 Theories of International Political Economy 3-4 s.h.
Theories focusing on international system, the state, bureaucrats, interest groups, international organizations, bargaining processes, distributive norms.

030:369 Problems in International Politics 3-4 s.h.
Issues of international politics, emphasis on problems of theoretical analysis. May be repeated.

030:390 Readings Tutorial 1-4 s.h.
Independent study. May be repeated. Consent of supervising faculty member required.

030:391 Research Tutorial 1-4 s.h.
Individual training in applied research. May be repeated. Consent of supervising faculty member required.

030:398 Ph.D. Dissertation 1-4 s.h.
Individual training in applied research. May be repeated.

PSYCHOLOGY
Chair: Gregg C. Oden
Adjunct professor: James N. Marchman
Associate professors: Erling A. Anderson (Anesthesiology), Mark S. Blumberg, Alan J. Christensen, Steven J. Luck, Lisa M. Oakes, Jane S. Pauslen (Psychiatry), Jodie M. Plamett, Scott R. Robinson, Scott P. Stuart (Psychiatry)
Associate professors emeriti: Dee W. Norton, Sue R. Roser
Adjunct associate professors: Robert F. Kirby, Richard J. Roberts, Nils R. Varney
Assistant professors: John H. Freeman, Prablad Gupta, Eva C. Klohen, Susan K. Lutgendorf, Rochelle S. Newman, Larisa K. Samuelson, John P. Spencer, Shaun P. Vecera, Paul D. Windschall
Adjunct assistant professors: Debra L. Johnson, Robert D. Jones, Rene E. Martin, Robert L. Thunhorst
Graduate degrees: B.A., B.S. in Psychology
Graduate programs: minor in Psychology
Psychology Undergraduate nondegree program: minor in Psychology

Undergraduate Programs
The department offers the Bachelor of Arts and the Bachelor of Science in Psychology. Both programs are designed to contribute to students’ general liberal education and to provide a foundation for postbaccalaureate training in psychology and closely related disciplines, and in areas such as business, medicine, law, and communications. Students who intend to enter the job market immediately after completing an undergraduate degree are well-advised to 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 B.S. program is intended for students who plan to pursue advanced work in psychology or in a related discipline. It includes an admission grade-point average requirement and specific courses in statistics, experimental psychology, mathematics, and natural science. The B.A. program has fewer specific requirements and puts less emphasis on methodology. Both programs leave ample time for students to combine psychology with another discipline or program.

Students who shift to a psychology major after two years of undergraduate work may find they do not have the background for the B.S. program. They may wish to enroll 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 statistics and methodology courses and introductory courses in several broad areas: behavioral and cognitive neuroscience, developmental psychology, clinical psychology, cognition and perception, and personality and social psychology. These courses are followed by upper-level psychology course work selected by the 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 Student Psychology Association, which is open to all interested students. The group sponsors speakers, films, career days, and student symposia.

Undergraduate psychology students may use Saturday & Evening Classes and/or Guided Correspondence Study to meet B.A. and B.S. program requirements. However, they also must satisfy all requirements of the College of Liberal Arts concerning the use of correspondence credit within the degree.

Selective Admission

Admission to the B.A. program in psychology is open; admission to the B.S. program is restricted. To be eligible for admission to the B.S. program, students must have completed 30 semester hours of college course work (excluding any credit by exam) and must have a cumulative grade-point average of 2.67 or higher. There is no limit to 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 any additional evidence of their qualifications.

Any University student may enter the B.A. program. Entering first-year and transfer students with fewer than 30 semester hours of course work who are interested in 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

The B.A. program is designed for students who wish to gain considerable knowledge in psychology but do not necessarily plan a professional career in the discipline. The program is appropriate for students preparing for careers in law, business, technical writing, or secondary school teaching (see the College of Education section of the General Catalog for social science teaching certification requirements). The B.A. program requires fewer psychology courses than the B.S. program and can more easily be combined with a second major.

Students interested in pursuing graduate study in psychology or other social sciences may wish to enrich their B.A. program by taking courses in mathematics, statistics, research methods, and the natural sciences.

Students must satisfy College of Liberal Arts requirements for the B.A. and must complete at least 28 semester hours in psychology plus a 3-hour-semester statistics course. Students also must complete at least 9 semester hours of course work at The University of Iowa in a second area of concentration. Concentrations used to satisfy the College of Liberal Arts General Education Program requirements may not be used to satisfy the second area of concentration, but a second major or a minor in any discipline will satisfy the requirement.

Transfer students must complete at least 15 semester hours of the major at The University of Iowa.

The B.A. program must include the following courses or their equivalents.

PSYCHOLOGY CORE REQUIREMENTS

0TP:025 (22S:025) Elementary Statistics and Inference (or a more advanced course) 3 s.h.
031:001 Elementary Psychology 3 s.h.
031:043 Evaluating Psychological Research 4 s.h.
or
031:120 Experimental Psychology I 3 s.h.

LOWER-LEVEL ELECTIVES

Students take four of the following after completing 031:001 (total of 12 semester hours).

031:012 Introduction to Brain and Behavior 3 s.h.
031:013 Introduction to Clinical Psychology 3 s.h.
031:014 Introduction to Child Development 3 s.h.
031:015 Introduction to Social Psychology 3 s.h.
031:016 Introduction to Cognitive Psychology 3 s.h.

UPPER-LEVEL ELECTIVES

Students take three upper-level courses after completing the psychology core courses and specified lower-level prerequisites (of total of 9 semester hours).

A list of approved upper-level courses and their prerequisites is available from the department and on the department’s web site. Courses offered vary from semester to semester. Before each registration period, students should check the latest version of the brochure Undergraduate Psychology at Iowa, available from the department and at the department's web site, and the current Schedule of Courses.

SELECTED TOPICS COURSES

Students take both of these.
031:121 Experimental Psychology II 3 s.h.
031:190 Psychology Seminar 3 s.h.

ADDITIONAL REQUIRED COURSES

Candidates for the B.S. in psychology also are required to complete one of the following pairs of specified natural science courses: one semester each of chemistry and biological sciences; two semesters of chemistry; two semesters of physics; or one semester each of chemistry and physics. All of these combinations satisfy the General Education Program requirement in natural sciences. B.S. majors also

Bachelor of Science

The B.S. program is designed to be more rigorous than the B.A. Accordingly, the B.S. may be the degree of choice for students who plan to do graduate work in psychology and related research fields. However, choice of a degree program should be dictated by the student’s personal career goals, and a B.S. is not required for graduate study in psychology.

Students must satisfy the College of Liberal Arts requirements for the B.S. and must complete at least 34 semester hours in psychology. Transfer students must complete at least 15 semester hours of the major at The University of Iowa.

The B.S. program must include the following courses or their equivalents.

PSYCHOLOGY CORE REQUIREMENTS

0TP:143 (22S:102) Introduction to Statistical Methods (or an approved substitute, such as 22S:101 Biostatistics) 3 s.h.
031:001 Elementary Psychology 3 s.h.
031:120 Experimental Psychology I 3 s.h.

LOWER-LEVEL ELECTIVES

Students take four of the following after completing 031:001 (total of 12 semester hours).

031:012 Introduction to Brain and Behavior 3 s.h.
031:013 Introduction to Clinical Psychology 3 s.h.
031:014 Introduction to Child Development 3 s.h.
031:015 Introduction to Social Psychology 3 s.h.
031:016 Introduction to Cognitive Psychology 3 s.h.

UPPER-LEVEL ELECTIVES

Students take three upper-level courses after completing the psychology core courses and specified lower-level prerequisites (total of 9 semester hours).

A list of approved upper-level courses and their prerequisites is available from the department and on the department’s web site. Courses offered vary from semester to semester. Before each registration period, students should check the latest version of the brochure Undergraduate Psychology at Iowa, available from the department and at the department’s web site, and the current Schedule of Courses.
must complete at least one semester of calculus; in most cases this entails at least one pre-calculus mathematics course. Students should consult with their advisers concerning specific courses that will satisfy these requirements.

Students also must complete at least one additional course in advanced mathematics, statistics, or computer science chosen from the following lists.

**Mathematics**
- 22M:022 Calculus and Modeling II 4 s.h.
- 22M:026 Calculus II 4 s.h.
- 22M:027 Introduction to Linear Algebra 4 s.h.
- 22M:036 Engineering Calculus II 4 s.h.
- 22M:046 Accelerated Calculus with Applications II 4 s.h.

**Statistics**
- 06E:071 Statistics for Strategy Problems 3 s.h.
- 22S:120 Probability and Statistics 4 s.h.
- 22S:148 Intermediate Statistical Methods 3 s.h.

**Computer Science**
- 06K:070 Computer Analysis 3 s.h.
- 22C:205 Problem Solving and Computing 3 s.h.
- 22C:016 Computer Science I 4 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 Ms**

In addition to courses in the major, the B.A. requires three courses in a second area.

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: 031:001, statistics, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: four courses in the major (including 031:043 or 031:120), one second-area course, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: two additional courses in the major and an additional second-area course

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 B.S. is open only to students who have earned 30 semester hours in course work and have a grade-point average of at least 2.67. Students must complete a natural science sequence, either as part of the General Education natural science requirement or in addition to it. Students also must complete a semester of calculus and an advanced math, statistics, or computer course, which may require some preliminary work.

Before the third semester begins: 031:001 and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: calculus, statistics, three additional courses in the major (including 031:120), and at least one-half of the semester hours required for graduation

Before the seventh semester begins: two more courses in the major, one course for the psychology natural science requirement, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: the advanced math/statistics/computer course and two more courses in the major

**Honors**

The department has an active honors program open to majors with a grade-point average of at least 3.30 in psychology courses and at least 3.20 overall. The program includes research seminars and individual research collaboration with faculty members. Students usually are chosen to participate in the department’s 031:195 Honors Seminar in Psychology during the spring semester of their sophomore or junior year. Interested majors should contact the department honors adviser.

**National Honor Society**

The department sponsors a chapter of Psi Chi, the national undergraduate honor society of the American Psychological Association. Students who have a grade-point average of at least 3.00 overall and 3.10 in psychology course work and who have completed 9 semester hours of psychology may request a membership application form. Consult the departmental academic coordinator for more information.

**Minor**

A minor in psychology is an attractive option to students from a variety of disciplines. A minor requires 15 semester hours of credit with a grade-point average of at least 2.00. At least 12 of those 15 semester hours must be in advanced courses in the psychology department at The University of Iowa (all graded psychology courses above 031:001). Departmental advisers can help students identify courses for a minor that complement the student's major.

**Graduate Program**

The graduate program in psychology is designed primarily for students seeking the Ph.D. Except in very special circumstances, applications are considered only for that degree. For students entering without previous graduate work, it is a four-year program; those entering with previous graduate training generally require three to four additional years in this department, depending on the nature of the earlier preparation.

The Ph.D. program has a 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 five broad areas: behavioral and cognitive neuroscience, clinical psychology, cognition and perception, developmental psychology, and personality and social psychology. 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. A joint program involves course work in two areas, and research supervision or co-supervision by faculty members from both areas.

**Doctor of Philosophy**

The Ph.D. requires satisfactory completion of at least 72 semester hours of graduate work in psychology, including at least 33 semester hours in the psychology department. 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: for example, 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 the adviser 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 programs. In addition, they develop a prospectus for the dissertation research and take...
the comprehensive examination, which covers material in the specialty and related areas. 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.

Master of Arts with Thesis

As indicated previously, the department does not offer a specific M.A. program. The M.A. with thesis requires satisfactory completion of at least 30 semester hours of graduate credit, 24 of which must be taken at The University of Iowa. The course work must include a statistics course and courses outside the primary specialty area and at least 8 additional semester hours earned in courses and seminars in the department. Students also must complete an acceptable scholarly thesis and conduct a successful oral defense of the thesis.

Master of Arts without Thesis

The M.A. without thesis requires satisfactory completion of at least 37 semester hours of graduate credit, 30 of which must be taken at The University of Iowa. The course work must include a statistics course and courses outside the primary area and at least 15 additional semester hours earned in courses and seminars in the department. Students also must perform successfully on a written examination covering their area of specialization.

Graduate Training Areas

Behavioral and Cognitive Neuroscience

The program in behavioral and cognitive neuroscience focuses on the analysis of attention, motivation, and learning, primarily in 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 neuromatomy. 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 neurosurgery, histology, and biochemical assay. Faculty members in the behavioral and cognitive neuroscience area interact extensively with colleagues from a number of basic science and clinical departments in the 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, fully approved by the American Psychological Association, strongly emphasizes a scientific approach to the study of mental and physical health. It is designed for students who are interested primarily in developing scholarly understanding of clinical phenomena and acquiring research skills necessary to the systematic investigation of such phenomena. Recognizing that students must become familiar with clinical material and competent in the application of clinical skills, the department closely integrates practicum experience in the Carl E. Seashore Psychology Clinic with course work and supervised research experience.

Students in the clinical program may develop special competence in areas such as aggression, personality and personality disorders, psychophysiology, anxiety disorders, affective disorders, behavioral and cognitive therapies, child psychopathology, and clinical health psychology. Faculty members collaborate actively with colleagues from departments such as otorhinolaryngology, psychiatry, pediatrics, obstetrics and gynecology, internal medicine, microbiology, neurology, and surgery, and from other units, such as the Center for Health Services Research and the Veterans’ Affairs Medical Center. Partly as a consequence of such collaboration, there are several topics in health psychology in which clinical faculty members are prepared to offer research supervision.

Advanced students have opportunities to gain additional practicum experience through placement in clinical facilities maintained by local, state, federal, and University agencies. Students in the clinical program who wish to have the designation “clinical psychology” on their official transcript must satisfactorily complete a one-year internship at an approved agency before receiving the doctoral degree. The internship ordinarily comes after completion of all course work and most, if not all, of the dissertation project.

Cognition and Perception

The cognition and perception training area is broadly concerned with perceptual and cognitive processes. Training in this area focuses on laboratory research conducted under the mentorship of one or more faculty advisers. Many students and faculty members in this area share research interests in the general areas of language and visual cognition, and collaborative research in these areas is common. Other areas of research include judgment and decision making, memory, computational models of cognition, cognitive neuroscience, attention, signal detection theory, and information processing. Students also are encouraged to take advantage of research links with other University of Iowa departments, such as neurology, linguistics, and marketing.

In addition to intensive laboratory research, students take courses representing core topics in cognition and perception, including visual and auditory perception, basic cognitive processes such as memory and attention, higher level aspects of cognition such as language and decision making, and quantitative approaches to cognition such as neural network models. They also take more specialized seminars in which they read and discuss the latest research findings in a specific area.

Developmental Psychology

Students in the developmental program are taught a broad range of developmental theory, and they acquire expertise in multiple research paradigms used in developmental psychology, such as observational research, experimentation, and field methods. Students also have the opportunity to study and collaborate with faculty members who are not primarily developmental psychologists but whose work has implications for developmental theory. This opportunity provides a unique breadth of training.

Students take courses in many areas of developmental psychology as well as in other areas of psychology. Currently available to students are research opportunities in cognitive development in infancy and childhood, social and emotional development, and developmental psychobiology. The developmental research group, composed of faculty members and students interested in issues related to developmental research, meets regularly to discuss ongoing research. These meetings provide both 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.

Personality and Social Psychology

The personality and social psychology program offers a variety of perspectives on interpersonal and intrapersonal processes. Students develop a broad familiarity with all of the major subareas but may focus their graduate training in any one, such as attribution, social influences on behavior, close relationships, adult attachment styles, health and stress, the social psychology of groups, social cognition, temperament and emotionality, and traits and individual differences.

Students in the personality and social psychology program also may acquire additional preparation for research and teaching in interest areas such as organizational and consumer behavior, communications, human factors, psychology and the law, and behavioral medicine. Such preparation, which ordinarily involves participation in special research projects and selected course work outside the department (e.g., in the Department of Communication Studies or the College of Law), will broaden students’ employment prospects.

Admission

Since the graduate program in psychology is designed primarily for students seeking the Ph.D. degree, all applicants are considered on this 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 deadline for applications is January 1. For all materials to be on file by that date, the Graduate Record Examination (GRE) General Test should be taken in October, certainly no later than in December. The subject test in psychology is not required. Applications may be submitted at any time but are considered only once each year-between January 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 sections of the GRE General Test, and the applicant’s statement about background and purpose. Admission materials are initially reviewed 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 remediate deficiencies through special course work or independent study prior to embarking on the regular graduate program.

**Financial Support**

All students admitted to the graduate training program in psychology automatically are considered, on the basis of merit, for available financial support in the form of fellowships, teaching assistantships, research assistantships, traineeships, and tuition scholarships. No separate application for financial aid is required.

**Faculty**

The widely recognized commitment of the faculty to research and scholarship is manifest in the publication of numerous articles, books, reviews, and book chapters each year. Many faculty members also are active as editors, associate editors, and regular consulting editors for major psychology journals.

**Facilities**

The department’s facilities for graduate training and research are among the finest in the country. The Kenneth W. Spence Laboratories of Psychology and adjoining space in Seashore Hall include 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 Carl E. Seashore Psychology Clinic; and well-equipped electronic, mechanical, and woodworking shops.

Microcomputers of many kinds are widely available. Office space for graduate students and faculty is provided in Seashore Hall. The psychology branch of the University’s Main Library, with major collections in all areas, is conveniently located in the west wing of Seashore Hall.

The research and teaching activities of the department greatly benefit from the facilities and staff of other University and local agencies, including The University of Iowa Hospitals and Clinics, the Psychiatric Hospital, the Veterans Affairs Medical Center, the University Counseling Service, the Child Development Clinic, the Wendell Johnson Speech and Hearing Clinic, the Center for Health Services Research, and the School of Social Work.

**Courses**

**Primarily for Undergraduates**

031:001 or equivalent is prerequisite to all other psychology courses.

031:012, 031:013, 031:014, 031:015, 031:016, and 031:019 are open to first-year students who have satisfactorily completed an introductory psychology course (031:001 or equivalent).

031:000 Cooperative Education Internship 0 s.h. Administered by Cooperative Education Program, filled on competitive basis. Open only to psychology majors. Consent of academic coordinator required. May be repeated.

031:001 Elementary Psychology 3 s.h. Psychology as a behavioral science. GE: social sciences.

031:012 Introduction to Brain and Behavior 3 s.h. Biological mechanisms of behavior; comparative study of behavior in animals (excluding humans), behavioral organization, animal intelligence, social behavior, communication; behavioral neuroscience, how brain systems control sensation, movement, homestasis, emotion, learning.

031:013 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. GE: social sciences.

031:014 Introduction to Child Development 3 s.h. Current research, theory in child psychology, including heredity and environment, development, attachment, language acquisition, thinking (Piaget), information processing, memory and concept development, intelligence, child rearing, peers, sex differences, moral development, aggression, child psychology. GE: social sciences.

031:015 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.

031:016 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. GE: social sciences.

031:019 Psychology in Business and Industry 3 s.h. Applications of psychology to problems in world of work with emphasis on personnel selection, training, attitudes, motivation, measurement of job performance.

032:029 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). Open only to first- and second-semester students.

033:043 Evaluating Psychological Research 4 s.h. Skills for critical evaluation of professional and public literature dealing with scientific study of behavior; philosophy of scientific psychology, experimental and nonexperimental methods of investigation, principles of experimental design and control, psychological testing, discussion of applications in several areas of research. Prerequisite: an approved statistics course.

031:063 Abnormal Psychology for Allied Health Professions 3 s.h. Abnormal psychopathology; description of psychopathology (e.g., anxiety, depression, substance abuse, antisocial behavior), and general issues in etiology, processes underlying psychopathology, treatment. For health professions nonmajors. Prerequisite: 031:008 or equivalent.

**For Undergraduate and Graduate Students**

Completion of the psychology core courses and specified lower-level prerequisites, or consent of instructor, is required before enrollment in individual upper-level courses.

031:102 Interpersonal Influence 3 s.h. Classic and contemporary theory and research on social influences of behavior; topics include social influences on self-concept, interpersonal comparisons, obedience, conformity. Prerequisite: 031:015 or equivalent.

031:103 Social and Personality Development 3 s.h. Emotional, social, and personality development from infancy to adolescence; child’s temperament characteristics, parent-child relationship, and social context in human growth. Prerequisite: 031:014 or 031:015 or equivalent.

031:105 Personality 3 s.h. Classic theoretical models and contemporary empirical research in personality, including influence of heredity and environment, consistency and stability of behavior. Prerequisite: 031:014 or 031:015 & equivalent.

031:106 Attitude Change 3 s.h. Current theoretical approaches; laboratory and field methods of research; basic processes of change considered within broader framework of psychology. Prerequisite: 031:015 or equivalent.

031:107 Environmental Stress 3 s.h. Social psychological aspects of urban living, crowding, control, institutionalization, energy utilization; theory and research on stress, arousal, emotion. Prerequisite: 031:015 or equivalent.

031:109 Psychology of Aggression 3 s.h. Major theories, research on aggressive behavior in human and nonhuman subjects; implications of research on aggression for understanding contemporary social problems. Prerequisite: 031:012 or equivalent.

031:110 Mood and Temperament 3 s.h. Current theoretical approaches and contemporary empirical research in emotions, emotional expression; environmental and biological influences on mood, including circadian, weekly, seasonal cycles; individual differences in temperament, happiness, life satisfaction. Prerequisite: 031:003 or equivalent.

031:111 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, schemata, person perception, stereotypes, attitudes. Prerequisite: 031:015 or equivalent.

031:113 Language Processing 3 s.h. Basic linguistic processes within context of cognitive psychology: speech perception, syntax, semantics; additional treatment of language acquisition. Prerequisite: 031:016 or equivalent. Same as 303:115.

031:114 Cognitive Development of Children 3 s.h. Developmental research, theory concerning children’s concepts, thinking, problem solving, memory, communication. Prerequisite: 031:014 or equivalent.

031:115 Theories of Developmental Psychology 3 s.h. Major theoretical approaches to the study of developmental change (e.g., social learning, information-processing, ethological, contextual); related topics such as perceptual development and attachment. Prerequisite: 031:014 or equivalent.

031:116 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.

031:117 Psychology of Prenatal Development 3 s.h. Behavior before and immediately after birth; embryology and development of fetus, preterm infant, and neonate; motor development, sensation, learning in utero. Prerequisite: 031:012 or 031:014 or equivalent.
031:118 Infant Development 3 s.h.
Cognitive and social development during first two years of life; development of perceptual abilities, early language acquisition, imitation, mother-infant attachment, temperament. Prerequisite: 031:014 or equivalent.

031:119 Human Memory 3 s.h.
Introduction to contemporary psychological theory and research on short-term and long-term memory acquisition processes, related topics in cognition. Prerequisite: 031:016 or equivalent.

031:120 Experimental Psychology I 3 s.h.
Logic and application of experimental methods to analysis of behavioral phenomena; major problem areas of experimental psychology. Prerequisite: 07P:143 or 22S:102 or equivalent.

031:121 Experimental Psychology II 4 s.h.
Laboratory study of a* aspect of behavior; topics in a particular area, learning, memory, perception, social behavior, operant behavior, physiological processes. May be repeated. Prerequisite: 031:120 or equivalent; additional prerequisites for sections in May be required.

031:122 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 psycholinguistics, phonetics, sociolinguistics, speech pathology. Prerequisite: 031:014 or 031:016 or equivalent.

031:125 Comparative Psychology 3 s.h.
Behavioral processes in humans, animals, intelligence, memory, attention, language, consciousness, behaviorism, mentalism, evolution, neuropsychology. Prerequisite: 031:012 or equivalent.

031:126 Behavioral Neuroscience 3 s.h.
Basic concepts and techniques in neurosciences, their application to analysis of sensory processes, arousal mechanisms, motivation, learning. Prerequisite: 031:012 or equivalent.

031:128 Psychopharmacology 3 s.h.
How drugs act to influence behavior; general principles of drug action on the nervous system; licit and illicit drugs, their use/abuse, historical perspective on drug use. Prerequisite: 031:012 or equivalent.

031:129 Neurobiology of Learning and Memory 3 s.h.
Major topics in the neurobiology of learning and memory; focus on anatomical, cellular, molecular bases of various learning and memory processes. Prerequisite: 031:012 or equivalent.

031:130 Psychology of Thinking 3 s.h.
Problem solving, reasoning, judgment and decision making, language and thought, intelligence, creativity. Prerequisite: 031:016 or equivalent.

031:131 Cognitive Science 3 s.h.
Introduction to cognitive science, a* interdisciplinary enterprise that investigates psychological processes using perspectives from psychology, computer science, linguistics, philosophy, neuroscience. Prerequisite: 031:016 or equivalent.

031:132 Biopsychology of Motivated Behaviors 3 s.h.
Survey, critique, analysis of motivational concepts in study of animal behavior; physiological neural bases of behavior, including sleep, sex, maternal behavior, eating, drinking, addiction. Prerequisite: 031:012 or equivalent.

031:133 Sensation and Perception 3 s.h.
Psychological and neurophysiological examination of humans' major sensory systems, especially vision. Prerequisite: 031:012 or 031:016 or equivalent.

031:134 Cognition and the Brain 3 s.h.
Analysis of the brain as a biological computational system that performs cognitive functions such as vision, language, and memory. Prerequisite: 031:012 or 031:016 or equivalent.

031:135 Principles of Behavioral Analysis 3 s.h.
Experimental analysis of behavior; application of behavior analysis to broad range of topics in psychology, including reflexive behavior, perception, learning, motivation and emotion, memory and cognition, language, abnormal behavior, drug addiction, social behavior; consideration of behaviorist philosophy. Prerequisite: 031:012 or 031:016 or equivalent.

031:136 Behavioral Endocrinology 3 s.h.
Basic concepts; sexual differentiation of brain, male and female physiology, sexual behavior and cognitive function; aggression; homostasis; biological rhythms; mood. Prerequisite: 031:012 or equivalent.

031:140 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. Prerequisite: 031:015 or equivalent.

031:141 Loss and Trauma 3 s.h.
How people deal with personal (e.g., aging) and interpersonal (e.g., death and divorce) loss. Prerequisite: 031:015 or equivalent.

031:150 Psychology of Aging 3 s.h.
The later years of human life viewed from perspectives of developmental psychology, biology, sociology. Same as 153:150.

031:152 Health Psychology 3 s.h.
Psychological concepts toward understanding etiology, prevention, treatment of physical illness; basic and clinical research that addresses reciprocal effects of behavior and physical health. Prerequisite: 031:012 or 031:013 or 031:015 or equivalent.

031:154 Psychology of Decision Making 3 s.h.
Psychological factors that influence the decisions we make; theories, methods, empirical research in areas such as risky decision making, health-related decisions, consumer decisions. Prerequisite: 031:016 or equivalent.

031:156 Psychology in Management 3 s.h.
Application of psychological principles to human relationships and supervision, personnel selection, leadership, communication, group pressures. Same as 056:145.

031:161 Schizophrenia 3 s.h.
Nature of schizophrenia, theories, research in topics such as clinical features, premorbid adjustment, genetic versus environmental influences, cognitive deficits, pharmacological and psychological treatment. Prerequisite: 031:013 or equivalent.

031:163 Abnormal Psychology 3 s.h.
Adult psychiatric disorders (e.g., anxiety disorders, affective disorders, antisocial personality, schizophrenia, substance abuse, etc.); emphasis on theories of etiology and of psychological processes underlying psychopathology. Prerequisite: 031:013 or equivalent.

031:166 Childhood Psychopathology 3 s.h.
Major forms of childhood psychopathology; current theoretical approaches and methodological issues in diagnosis, conceptualization and treatment of developmental psychopathology. Prerequisite: 031:013 or equivalent.

031:170 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. Prerequisite: 031:013 or equivalent.

031:171 Behavioral Medicine 3 s.h.
Role of psychological factors in physical health and illness: relationship between personality characteristics and physical conditions; behavioral processes in etiology and treatment of disorders; coping mechanisms, psychosocial responses to prolonged and/or traumatic illness. Prerequisite: 031:013 or equivalent.

031:172 Psychological Testing 3 s.h.
Purposes, development, applied and scientific uses of psychological tests; major ethical and social issues in relation to the use of such tests.

031:173 Substance Use and Misuse in America 3 s.h.
Current data on epidemiology, assessment and diagnosis, treatment, prevention of substance misuse. Prerequisite: 031:013 or equivalent. Recommended: 031:163.

031:174 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. Junior or senior standing or consent of instructor required. Prerequisite: 031:012 or 031:016 or equivalent. Same as 033:144.

031:175 History and Systems of Psychology 3 s.h.
Historical influences on contemporary psychology; emphasis on philosophical, physiological contributions to enduring psychological issues; development of psychology as a science. Junior or higher standing required. Prerequisite: 031:012 or 031:016 or equivalent.

031:180 Current Topics in Psychology 2-3 s.h.
May be repeated. Prerequisite: 031:185 Research Practicum in Psychology 3 s.h.
Small-group participation in faculty research projects; literature review, planning of studies, data collection, analysis, interpretation, write-up. May be repeated. Consent of instructor required.

031:190 Psychology Seminar 3 s.h.
Readings from original sources, presentations, papers, student participation. Psychology major (B.S.) and senior standing required.

031:191 Special Readings and Projects 3 s.h.
Open only to undergraduate majors in psychology. Consent of instructor requested. May be repeated.

031:195 Honors Seminar in Psychology 3 s.h.
Faculty discussion of diverse research topics; leads to choice of topic for honors project. Open only to honors students. Consent of instructor required.

031:199 Honors Thesis Research 1-3 s.h.
Supervised original project; leads to written thesis, oral defense. Open only to honors students. May be repeated.

Primarily for Graduate Students

031:201 Advanced Social-Personality Psychology 3 s.h.
Classic and contemporary theory, research, methodological issues in social-personality psychology. Consent of instructor required.

031:202 Attitudes and Persuasion 3 s.h.
Classic and current theories and findings on persuasion, the formation and measurement of attitudes.

031:205 Social Influences on Behavior 3 s.h.
Theoretical, empirical analysis of interpersonal influences on self-concept, behavior; social comparison, conformity, compliance, obedience. Consent of instructor required.

031:206 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.

031:207 Adult Development 3 s.h.
Patterns and processes in adult development; emphasis on social and personality development, how adult development is manifested, what factors influence it; methodological approaches to adult development. Same as 153:207.

031:208 Psychology of Close Relationships 3 s.h.
Theory, general writing, empirical analysis of variables involved in initiation, maintenance, termination of close relationships; emphasis on social psychological processes, concepts.

031:209 Psychology of Stress 3 s.h.
Theory and research on stress and emotion; learned helplessness, loss of a loved one, social support, coping strategies, overload, institutionalization, urban stress.

031:211 Processes in Social Development 3 s.h.
Theory, research about social development from infancy to adulthood; emphasis on temperament, attachment, emotion, aggression, pro-social behavior, peer relationships, moral development. Consent of instructor required.

031:212 Perceptual-Cognitive Development in Infancy 3 s.h.
Knowledge acquisition during first two years of life; development of visual, speech, binmodal perception, imitation; object concept and permanence; early perceptual concepts.

031:216 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.

031:217 Psychology of Prenatal Development 3 s.h.
Current research on behavior before and immediately after birth; embryology and development of fetus, preterm infant, neonate; motor development, sensation, learning, adaptation to intratime conditions.

031:218 Cognitive Development 3 s.h.
Theoretical and empirical analyses of children's cognitive development; spatial and numerical concepts, causal reasoning, categorization, metacognition, memory.

031:219 Psychology of Language 3 s.h.
Cognitive processes involved in production and comprehension of natural language by normal adult humans, including processing of words, sentences, conversations, both spoken and written.

031:220 Fundamentals of Cognitive Science 3 s.h.
Broad overview of study of cognition, including cognitive psychology, computer science and artificial intelligence, linguistics, neuroscience, philosophy of mind. Consent of instructor required.
031:223 Neural Networks in Psychology 3 s.h.
Major techniques in neural network or connectionist modeling; specific application to issues in psychology. Consent of instructor required.

031:225 Learning, Memory, and Cognition 3 s.h.
Historical development, current theories of human symbolic behavior; emphasis on acquisition, retention, use of verbal associations; visual imagery, simple decision making, concept formation, problem solving, choice behavior. Same as 103:272.

031:226 Visual Perception 3 s.h.
Theoretical and empirical analyses of low- and high-level visual functions, including edge detection, surface representation, object identification.

031:228 Auditory Perception 3 s.h.
Physiology of the auditory system, auditory development, the nature of sound, psychophysics, auditory and hearing.

031:229 Advanced Topics in Cognition 3 s.h.
Cognitive science, artificial intelligence; emphasis on psychological implications.

031:230 Behavioral Pharmacology 3 s.h.
Behavioral analysis of drug action; emphasis on physiological, biomechanical mechanisms underlying behavioral processes in experimental animals, humans. Same as 071:230.

031:234 Developmental Psychology 3 s.h.
Biological bases of behavior in developing organisms may include thermoregulation, ingestion, sleep, parent/offspring interactions, sensation, motor control, learning, memory.

031:236 Biological Bases of Behavior 3 s.h.
Physiological underpinnings of behavior and cognition; psychological concepts such as perception, motivation, emotion, reinforcement, learning, and thinking explored at molecular, cellular, systems levels.

031:240 Judgment and Decision Making 3 s.h.
Models and methods used in study of human judgments and decisions; applications in areas such as clinical diagnosis, social and educational evaluations, economic judgments, consumer decisions.

031:241 Behavioral and Cognitive Neuroscience 3 s.h.
Basic concepts and facts in behavioral and cognitive neurosciences; emphasis on principles of neuroscience; sensory, motor, arousal systems; biological basis of motivation, emotion, reward, learning, cognition. Same as 132:241.

031:244 Behavioral Neuroscience 2 s.h.
Same as 071:244, 132:244.

031:245 Quantitative Methods in Psychology 3 s.h.
Conceptual foundations of the application of formal models and computational techniques; principles of theory development and evaluation; robustness, novelty, and the nature of representation; basic and advanced applications within psychological domains.

031:248 Psychophysics and Scaling 3 s.h.
Theoretical, empirical literature in psychophysics and scaling; practical applications.

031:250 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. Consent of instructor required.

031:252 Clinical Behavioral Medicine 3 s.h.
Biopsychosocial framework applied to study, treatment of chronic and acute physical conditions; clinical concepts, procedures. Consent of instructor required.

031:258 Personality and Individual Differences 3 s.h.
Major theoretical, empirical issues in contemporary personality research, including stability and consistency of behavior, influence of heredity and environment in personality development, nature and organization of traits, validity of trait inferences.

031:260 Descriptive Psychopathology 3 s.h.
Psychiatric syndromes, including description, etiology, experimental and clinical research, development, function of classification systems. Consent of instructor required.

031:261 Experimental Psychopathology 3 s.h.
Theories of psychological processes underlying etiology of psychopathology; emphasis on schizophrenia, affective disorders, anxiety, sociopathy, drug abuse.

031:263 Psychological Appraisal I 3 s.h.
Assessment theory and basic psychometric principles in test construction, evaluation, application; ethical, social, psychological, psychometric issues and controversies in assessment. Consent of instructor required.

031:264 Psychological Appraisal II 3 s.h.
Detailed consideration of clinical use, interpretation of selected psychological assessment techniques; emphasis on research evidence of their validity and utility. Consent of instructor required. Prerequisite: 031:263 or equivalent.

031:265 Neuroscience Seminar 0-1 s.h.

031:266 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.

031:270 Clinical Research Methods 3 s.h.
Theory and methodology involved in design and execution of psychological research on clinical problems and/or with clinical populations; psychopathology, treatment, health, analog research. Consent of instructor required.

031:271 Psychoacoustics 3 s.h.
Same as 003:254.

031:276 Advanced Developmental Psychopathology 3 s.h.
Psychiatric syndromes manifested in childhood and adolescence; theoretical approaches, methodology from development and clinical psychology as they apply to study of childhood psychopathology. Consent of Instructor required.

031:290 Instruction in Psychology 1-2 s.h.
Preparation of lectures, exams, homework assignments, term papers; elements of successful teaching.

031:291 Problems in Psychology arr.
Individual study. Consent of instructor required.

Consent of instructor required.

Consent of instructor required.

031:297 Research Projects arr.
Consent of instructor required.

031:302 Seminar: Personality and Social Psychology 1 s.h.
Professional issues, current topics relevant to personality, social psychologists. Consent of instructor required.

031:303 Advanced Topics in Social Psychology 0-2 s.h.
Recent theory, research.

031:314 Seminar: Theories of Development 0-2 s.h.
Current theories of development (e.g., Piagetian, dynamic systems, nativist, connectionist, social learning, contextual theories; concepts used to explain what changes over development and how these changes occur. May be repeated.

031:315 Seminar: Social Development 0-2 s.h.
Theoretical, methodological issues focused on social, emotional, and personality development.

031:318 Seminar: Cognitive Development 0-3 s.h.
Theoretical, methodological issues focused on cognitive and perceptual development. May be repeated.

031:326 Seminar: Spatial Cognitive Development 2 s.h.
Changes in spatial representation over development; how children and adults remember spatial locations, including use of landmarks and categorical information; neurophysiological basis of location memory.

031:330 Seminar: Cognitive Psychology 2 s.h.
Consent of instructor.

031:332 Seminar: Attention 0-2 s.h.
Human attention, perception, information processing.

031:333 Seminar: Memory 0-2 s.h.
Theoretical viewpoints on human memory; discussion of recent research.

031:335 Seminar: Cognitive Neuroscience 0-2 s.h.
Neurological and behavioral investigations of attention, perception, learning, memory, decision making, planning; contemporary models, theories. Consent of instructor required.

031:338 Seminar: Advanced Topics In Behavioral and Cognitive Neuroscience 3 s.h.

031:360 Seminar: Orientation to Clinical Research 0-1 s.h.
Issues in clinical research, including student and faculty research, funding, conference presentations, ethics and human subjects committees, getting published. May be repeated.

031:361 Seminar: Clinical Psychology I arr.
May be repeated. Consent of instructor required.

031:370 Seminar: Health Psychology 0-2 s.h.
Theoretical and methodological issues, focus on specific topics, such as chronic disease, psychoneuroimmunology. May be repeated. Consent of instructor required.

031:380 Ethics and Professional Concerns arr.
Standards, procedures for review of studies with human participants, professional ethics, licensing, teaching of psychology, professional placement.

031:461 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. Consent of clinical training committee required.

031:462 Assessment Practicum arr.
Supervised practice in psychological assessment techniques. Consent of clinical training committee required.

031:463 Therapy Practicum arr.
Supervised practice and clinical experience in application and evaluation of psychological therapies. Consent of clinical training committee required.

031:464 External Practicum arr.
Supervised practice and clinical experience in field setting: psychological assessment techniques and/or evaluation of psychological therapies. Consent of clinical training committee required.

031:490 Teaching Practicum arr.
Skill development in preparing and presenting lectures, developing course plans, interacting with students. May be repeated. Consent of instructor required.

QUALITY MANAGEMENT AND PRODUCTIVITY

Faculty members and students in the College of Liberal Arts participate in the Quality Management and Productivity Program. For information about the program, see the Graduate College section of the Catalog.

RELIGION

Director: David E. Klemm


Professors emeriti: David R. Belgum, John P. Boyle, George W. Forell, Helen G. Goldstein, James F. McGee, George W.E. Nicholsburg, W. Pachow, George W. Paterson

Associate professors: Diana Fritz Cates, Ralph Keen, Janine Anderson Savorda, Frederick M. Smith

Assistant professor: Thomas A. Lewis

Information about the program, see the College of Liberal Arts section of the Catalog.

Religion is a major factor in human culture, with the power to unify society as well as to disrupt and divide it. Given the diversity of cultures in a shrinking global context, an understanding of religion and its personal and social roles is a significant element in a liberal arts education. The School of Religion helps
students acquire an appreciative and critical understanding of the history and literature of major religions in the East and West, and insight into the nature and meaning of the religious dimensions of human culture.

The school recognizes that religious activity is expressed in countless ways. Therefore, it offers a wide range of courses that explore facets of religion in cultures across the world. Topics and issues include religious texts and thinkers as well as how culture, tradition, and experience intersect. Diverse academic methods—including historical, textual, artistic, and literary approaches—are used to study the variety of ways in which religions have formulated values and addressed matters of ultimate concern.

Undergraduate Program

Each year thousands of University students enroll in courses in religion. Many are taking courses to complete the General Education Program. Some students choose religion as a second major to complement their studies in another field.

Religion majors learn the basic skills required in today’s world: critical thinking, clear writing, persuasive use of evidence in arguing one’s point, and understanding and communicating with people who hold other points of view.

Students who choose to major in religion may count a maximum of three religion courses approved for the General Education Program as part of the 30 semester hours in religion required for the major. Transfer students may include up to 15 semester hours of transfer credit toward the major. Transfer credit is evaluated on an individual basis.

Required Courses

To graduate with a B.A. in religion, students must take 15 semester hours in foundation studies, 12 semester hours in continuing studies, and the senior seminar.

FOUNDATION STUDIES

Western Religious Traditions

Six semester hours from these:
032:001 Judeo-Christian Tradition 3 s.h.
032:011 Old Testament Survey 2 s.h.
032:012 Old Testament Survey 2 s.h.
032:013 Personalities of the Old Testament 3 s.h.
032:015 New Testament Survey 3 s.h.
032:025 Medieval Religion and Culture 3 s.h.
032:026 Modern Religion and Culture 3 s.h.

Asian Religious Traditions

Two of these:
032:004 (039:064) Living Religions of the East 3 s.h.
032:005 (039:005) Asian Religious Classics 3 s.h.
032:006 (039:006) Introduction to Buddhism 3 s.h.

Theoretical and Comparative Studies in Religion

One of these:
032:002 Religion and Society 3 s.h.
032:003 Quest for Human Destiny 3 s.h.
032:010 Introduction to Religious Studies 3 s.h.
032:016 Religion and Liberation 3 s.h.

CONTINUING STUDIES

Students must take 12 semester hours of continuing studies course work to complete the major. This course work must be chosen from courses in one of four areas of concentration: western religion and religious thought; Asian religious traditions; religious texts and their historical backgrounds; or contemporary religious issues. Lists of approved courses for each of the four concentration areas are available from the School of Religion office.

SENIOR SEMINAR

All students must take 032: 196 Senior Majors Seminar for 3 semester hours.

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: at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: one or two courses in the major and at least one-half of the semester hours required for graduation
Before the seventh semester begins: three to six courses in the major and at least three-quarters of the semester hours required for graduation
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

Students with an overall grade-point average of at least 3.20 are eligible to join the University Honors Program. Honors majors must complete a total of 33 semester hours to fulfill the requirements for the religion major. Students must take 032: 198 Honors Essay under the individual supervision of a faculty adviser. Copies of the completed and approved essay are submitted both to the School of Religion and to the University Honors Program. Honors students may apply 3 semester hours of 032: 197 toward their 12-semester-hour requirement in the area of concentration.

Minor

A minor in religion requires 15 semester hours of credit in religion courses with a grade-point average of at least 2.00. Of the 15 semester hours, at least 12 must be taken at The University of Iowa in upper-level courses, including 032:007, 032:008, 032:009, and all courses numbered above 032:050.

Graduate Programs

The School of Religion prepares a select number of graduate students to become specialists in the study and teaching of religion.

Master of Arts

There are two tracks toward the M.A.: thesis and nonthesis. In both, students must maintain a cumulative grade-point average of at least 3.00 and earn a minimum of 30 semester hours in the School of Religion. All students must complete 3 semester hours in 032:205 Methods and Theories in the Study of Religion. Most of the 30 semester hours are earned in courses that fall into one of four areas of concentration: history of religion and religious thought in the West; theology, ethics, and culture; history of Asian religions; and comparative or interdisciplinary studies of religion. Students in the thesis program take at least one seminar in their area of concentration and may count the thesis for 6 of the semester hours required. Students in the nonthesis program take at least two seminars in their chosen area of concentration.

A maximum of 6 semester hours of graduate work in religion may be transferred to the program from another accredited graduate or professional school. The student’s committee must approve a program of study, including course work and requirements for languages and other research tools.

All students are required to take a written M.A. examination that tests competence in the area of concentration.

Doctor of Philosophy

The broad-based Ph.D. program places a high priority on the academic study of religion in its broad intellectual and cultural contexts. The program is structured to facilitate development of the research skills necessary to undergrad effective teaching and to foster the generation of new knowledge. As teaching assistants, Ph.D. students have maximum opportunity to develop teaching skills.

The graduate areas of concentration are history of religion and religious thought in the West; theology, ethics, and culture; history of Asian religions; and comparative or interdisciplinary studies of religion.

Doctoral students must complete a minimum of 72 semester hours of graduate course work, which must include 3 semester hours earned in 032:205 Methods and Theories in the Study of Religion. Students also must complete 9 semester hours in course work outside the School of Religion. A maximum of 12 semester hours is allowed for the dissertation.

Students must maintain a cumulative grade-point average of at least 3.20 and make satisfactory progress in the language requirements appropriate to their program. They must make formal application for candidacy.
during their fourth semester of residency. Each student must file a plan of study listing course work along with language and research tools in preparation for the written and oral comprehensive examination, and submit to the faculty committee two papers showing evidence of scholarly writing ability. Upon the recommendation of the faculty committee, the entire faculty decides whether to accept the student as a Ph.D. candidate.

Doctoral candidates must pass a written comprehensive examination and an oral examination on the dissertation.

More detailed information on graduate programs in religion is available in the department office or the University’s Office of Admissions.

**Admission**

All applicants for admission to graduate study must meet the general requirements of the Graduate College. In addition, the School of Religion requires a combined verbal-quantitative score of 3050 on the Graduate Record Examination (GRE) General Test and a grade-point average for admission to the M.A. program, and a combined verbal-quantitative score of 1100 on the GRE General Test and a grade-point average of 3.20 for admission to the Ph.D. program. Applicants must submit three letters of recommendation and a writing sample demonstrating the ability to engage in critical thinking.

**Financial Support**

The School of Religion offers two types of departmental financial support for graduate students: teaching assistantships and research assistantships. The department also may nominate eligible students for University of Iowa Fellowships.

The Gilmore Scholarship has been established for doctoral students interested in the relationships among religion, the visual arts, and humanistic values.

Financial aid awards are made annually on a competitive basis. First-year students ordinarily are appointed only as research assistants.

**Language Study at the University**

In addition to Greek, Latin, and modern European languages, the University offers courses in Japanese, Chinese, Sanskrit, and Hindi.

**Courses**

- **302:001 Judeo-Christian Tradition** 3 s.h.

- **302:002 Religion and Society** 3 s.h.
  - Meaning of religious questions and answers in traditional and modern social contexts in the West. Offered spring semesters. GE: humanities.

- **302:003 Quest for Human Destiny** 3 s.h.
  - Quests for destiny in terms of perceived options/goals and ability to recognize, pursue, achieve them. GE: humanities.
Most important and characteristic feminine divine beings in 2.3

2.3:164 Greek Religion and Society 3 s.h.
From Bronze Age to the Hellenistic period, in context of Mediterranean culture; evidence such as choral hymns, inscribed prayers, magical cures inscribed on lead, architecture, sculpture, offerings to the gods. GE: humanities. Same as 014:118.

2.3:165 Anthropology of Religion 2-3 s.h.
Religious activity in folkland tribal settings; application of theories of origin, functions of religion in human affairs. Same as 113:142.

2.3:166 Society and Religion in the Modern Middle East 3 s.h.
Three types of religious thought in Islam: Kalam, Philosophy, Sufism. Same as 16W:166.

2.3:167 Islam in the Modern World 3 s.h.
Same as 16W:167.

2.3:168 Religion and Politics in the Modern Middle East 3 s.h.
Same as 16W:168.

2.3:169 Karma, Rebirth, and Human Destiny 3 s.h.
Development of karma and rebirth doctrines in history of Indian religions; modern attempts to formulate ideas of human destiny and meaning. Same as 039:169.

2.3:171 Indian Religious Texts 3 s.h.
Same as 039:163.

2.3:172 Comparative Ritual 3 s.h.
Practice and theory; rituals from religions, including Hinduism, Buddhism, Christianity, India’s religions; theories of interpretation. Same as 039:172.

2.3:174 Indian Philosophy 3 s.h.
Same as 026:144.

2.3:175 Buddhist Philosophy 3 s.h.
Same as 026:145.

2.3:176 Chinese Religions 3 s.h.

2.3:177 Indian Literature 3 s.h.
Same as 039:156.

2.3:178 East Meets West: The Western Reception of Eastern Religion 3 s.h.
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 039:188.

2.3:179 Religious Biographies in Asia 3 s.h.
Several distinct types of “Asia” “exemplary lives”: works viewed from perspective of Buddhism in China; general notion of “religious types” rather than doctrinal or sectarian issues. Same as 039:179.

2.3:182 Sino-Tibetan Relations: Buddhist Context 3 s.h.
Relations between China and Tibet from the eighth century to present, in context of Buddhism. Same as 039:171.

2.3:183 Religious Traditions in India 3 s.h.
Premodern development of religious ideas and practices. Same as 391:161.

2.3:184 Indian Religion and Society 3 s.h.
Readings in translation or in original Indian literature. May be repeated. Corequisite: 039:131.

2.3:185 Chinese Popular Religion 3 s.h.

2.3:187 Early Modern Japanese Thought 3 s.h.
This course treats major trends in Japanese thought of the Tokugawa period (1600-1868), including the development of the Chu Hsi and Wang Yang-ming schools, Ancient Learning (kogaku), Nativist (jukogaku), samurai ethics (bushido), Daimuki Zen, and various popular forms of thought associated with urban and rural dwellers. Prerequisite: a course in East Asian culture or religion. Recommended: 032:009 or 032:176. Same as 16W:177, 391:187.

2.3:188 Zen Buddhism 3 s.h.
Same as 039:170.

2.3:189 Religion in Modern Japan 3 s.h.
Religious groups that emerged during 19th and 20th centuries. Same as 391:189.

2.3:190 Indian Religion and Social Science 3 s.h.
Classical Indian religion according to social scientific principles, ethnographic and socio-historical methods. Same as 039:190.

2.3:191 Indian Religion In India 3 s.h.
Movements, doctrines, religious practices, in history and in modern expressions. Same as 039:167. GE: foreign civilization and culture.

2.3:194 Suffering, Death, and Faith 2.3 s.h.

May be repeated.

2.3:196 Senior Majors Seminar 3 s.h.
Issues central to academic study of religion.

2.3:197 Honors Tutorial 2-3 s.h.

2.3:198 Honors Essay 2.4 s.h.

2.3:201 Colloquium on Teaching 1 s.h.
Teaching methods, course development, examination construction.

2.3:203 Methods and Theories in the Study of Religion 3 s.h.
Principal methods, theories in academic study of religion.

2.3:204 Proseminare: History of Religious Thought in the West 3 s.h.
Theoretical issues involved in studying history, particularly history of religious ideas; history and shifting perspectives, basic literature.

2.3:205 Seminar: Studies In Christian Origins 3 s.h.
Ministry of Jesus, beginning of church; variety of Christian beliefs, practices in first century. Same as 039:223.

2.3:211 Seminar: American Religious Thought arr.
Same as 016:275.

2.3:212 Seminar: Puritanism arr.
Same as 016:276.

2.3:219 Seminar: Religion in Modern India 3 s.h.
Major trends in Indian thought or movement. Same as 039:267.

2.3:222 Seminar: Catholic Theology arr.
Current issues in feminist religious ethics. Same as 039:223.

2.3:223 Seminar: Comparative Religion arr.
Teological thinking; basic questions about theological systems, resources, methods, aims, characters of religious thought.

2.3:224 Seminar: Theology in Ancient Near Eastern Arr.
Thematic, periodical; course development, examination construction.

2.3:225 Seminar: Contemporary Theology arr.
Ricoeur’s hermeneutics.

2.3:226 Seminar: Greek Religion and Society 3 s.h.
Prerequisite: 039:126. Corequisite: 039:103.

2.3:227 Seminar: Comparative Religion arr.
Current issues in feminist religious ethics. Same as 039:223.

2.3:228 Seminar: Religion in Modern India 3 s.h.
Major trends in Indian thought or movement. Same as 039:267.

2.3:235 Seminar: Chinese Religions 3 s.h.
Emphasis on China and/or Japan. Same as 039:237.

2.3:236 Seminar: Religion in Ancient India 3 s.h.
Upasadas, including the Bhadraburana and Chandogyu; early literature on yoga, with focus on ideas of self, god, structure of cosmos, nature of transcendence. Same as 039:236.
The Rhetoric Department offers courses that may be used toward majors in other academic programs of study. Graduate students in many disciplines, including departments at the University, may enroll in upper division rhetoric courses. It also offers other undergraduate courses and instruction in its Writing and Speaking Centers.

RHETORIC

Chair: Takis Poulakos
Professors: Frederick J. Antczak, Douglas M. Trank
Professors emeriti: Margaret B. McDowell, Donovan J. Ochs
Associate professors: Barbara Biesecker; Ralph Cintron, Dennis M. Moore, Takis Poulakos, Carol Severino, Mary Trachsel
Associate professors emeriti: Lou Kelly, Gene H. Krupa, Lois B. Maehl
Assistant professors: D. Diane Davis, Melissa D. Deem, Daniel Gross
Assistant professor emerita: Cleo Martin

Web site: http://www.uiowa.edu/~rhetoric

The Rhetoric Department offers courses that complete the General Education Program rhetoric component and provides individual instruction in its Writing and Speaking Centers. It also offers other undergraduate courses and graduate seminars.

Students interested in continued study of rhetoric once they have completed the rhetoric component of the General Education Program may enroll in upper division rhetoric courses. Many of these are cross-referenced with and may be used toward majors in other academic departments at the University.

Graduate students in many disciplines, including American studies, anthropology, communication studies, comparative literature, classics, English, history, journalism, political science, and others, may find rhetoric courses valuable to their program of study.

General Education Courses

General Education courses in rhetoric help students

- read with understanding and enjoyment, and write and speak about reading with personal authority and analytical skill;
- use writing and speaking to discover and explain, question and defend ideas;
- take into account fundamental rhetorical concepts such as audience, purpose, and appropriateness in devising effective communication.

Rhetoric General Education courses are sometimes organized around a special topic, but the primary emphasis is always on rhetorical practice and analysis.

All undergraduates—including transfer students—must satisfy the rhetoric requirement in one of the following ways:

- pass 010:001 Rhetoric I and 010:002 Rhetoric II (total of 8 semester hours);
- pass 010:003 Accelerated Rhetoric (4 semester hours);
- transfer 3 semester hours of credit in an expository writing course and pass 010:003 Accelerated Rhetoric; or
- transfer 3 semester hours of credit in a public speaking course and pass 010:003 Accelerated Rhetoric.

During their first semester at the University, students should enroll in the rhetoric course indicated on their degree evaluations (unless a delay is required). Students must enroll in a rhetoric course each semester until the requirement has been satisfied. Students must complete all ESL prerequisites before registering for any rhetoric course.

Placement is ordinarily determined by American College Testing (ACT) scores and any available transfer credit. Students who question their placement should bring their degree evaluations to the Rhetoric Department office during registration.

Students who have undergone 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 the Student Disability Services in consultation with the Rhetoric Department and individual instructors.

Satisfactory completion of rhetoric is a prerequisite for the General Education Program course 08G:001 The Interpretation of Literature.

Courses

For Undergraduates

General Education

Completion of 010:001-002 (or 010:003 for qualified students) completes the General Education Program rhetoric component.

010:001 Rhetoric I 4 s.h.
First semester of a two-semester sequenced course; speaking, writing, and critical reading, with emphasis on controversy, competence in analyzing, organizing, and presenting diverse points of view, and in adapting discourse to readers and listeners. GE: rhetoric.

010:002 Rhetoric II 4 s.h.
Second semester of a two-semester sequenced course; oral and written communication; argument, persuasion, research, competence in research procedures, location and evaluation of information, with emphasis on advocacy, analysis and responsible use of evidence, reasoned interpretation of substantive matters. GE: rhetoric.

010:003 Accelerated Rhetoric 4 s.h.
Combines 010:001 and 010:002 into a one-semester accelerated course. Placement based on ACT scores. GE: rhetoric.

010:004 Writing and Reading 3 s.h.
Writing portion of the accelerated course 010:003; introductory course in writing required of students who have completed a college-level public speaking course but have not had an equivalent college or university writing course or earned exemption by receiving a score of 3 or above on the Advanced Placement English test. GE: rhetoric. Prerequisite: fulfillment of speaking requirement.

010:006 Speaking and Reading 3 s.h.
Speaking portion of the accelerated course 010:003; introductory course in public speaking required of students who have completed a college-level writing course but have not had an equivalent college or university speaking course; intended to improve speaking, listening, critical, and analytical skills. GE: rhetoric. Prerequisite: fulfillment of writing requirement.

Laboratory

010:009 Individual Instruction in Writing 2 s.h.
Focus on needs, interests of student. Open only to students who have not fulfilled the rhetoric requirement. Consent of Writing Center director required.

For Undergraduate and Graduate Students

The following rhetoric courses are offered on a three-year cycle and more frequently when possible.

010:014 Rhetorical Praxis 3 s.h.
Writing a practice; subjects and writing modes chosen by each student; class audience. Same as 08N:014.

010:029 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). Open only to first- and second-semester students.

010:042 IBA Writing for Biological Researchers 3 s.h.
Open only to Iowa Biosciences Advantage students. Consent of instructor required. Same as 168:042.

010:131 Classical Rhetoric and Greek Culture 3 s.h.
Origins, development of the art of rhetoric from Sophists to Aristotle; significance to Greek culture from fifth to fourth century B.C. GE: humanities. Same as 36C:131.

010:141 Rhetoric and Past Public Controversy 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. GE: historical perspectives. Same as 36C:137.

010:142 The Politics of Literacy 3 s.h.
Social dynamics of literacy instruction and literacy learning; may include service learning component or community setting. Same as 07E:154, 07S:154, 008:173.

010:143 Rhetorical Traditions 3 s.h.
Major rhetorical traditions outside the 20th century, including Greek, Roman, British, American. Same as 008:153.

010:151 Foundations of Rhetorical Theory and Criticism 3 s.h.
Thinkers typically identified with postmodern, Structuralist, feminist, and other perspectives whose theories of language, subjectivity, and power have shaped understanding of rhetoric's role, function, implications, and limits as a means for effecting social change. Prerequisite: rhetoric requirement. Same as 008:174, 36C:151.

010:152 Twentieth-Century Rhetorical Theory and Criticism 3 s.h.
Rhetorical theory and criticism as discourses produced within a socio-political environment. Same as 36C:152.
RHETORICS OF INQUIRY

Faculty members and students in the College of Liberal Arts participate in the Project on Rhetorics of Inquiry. For information about the project, see the Graduate College section of the Catalog.

RUSSIAN

Acting chair: Raul Curto
Professors: Vadim Kreyd, Margaret H. Mills
Professors emeriti: Norman Luxenburg, Ray J. Parrott Jr., Harry B. Weber
Associate professor: Russell Valentino
Associate professor emeritus: Christopher A. Wertz
Assistant professor emerita: Miriam J. Gelfand

Undergraduate nondegree program: minor in Russian
Graduate degree: M.A. in Russian
Web site: http://www.uiowa.edu/~russian

The Russian program trains students in both written and spoken Russian and in Russian literature. It also provides them with an understanding and appreciation of Russian culture. A knowledge of Russian is seldom an end in itself; rather it complements some other vocation. Accordingly, the department encourages all of its students to pursue a joint major and to develop their interests in related or complementary fields.

Traditionally at Iowa, many students have combined study of Russian with a double major in economics, global studies, history, journalism and mass communication, or political science. Recent trends have shown an increase in Russian students pursuing the International Business Certificate, as well. These students enhance their future employment opportunities as well as build a better foundation for graduate and professional programs in Russian area studies.

Through the University’s Bachelor of Arts degree program in Russian, East European, and Eurasian studies, interested students can focus their undergraduate training on a broader interdisciplinary understanding of this region of the world. For more information on this complementary B.A. program, see “Russian, East European, and Eurasian Studies” in this section of the Catalog.

With the increasing importance of Russian as a language of science and commerce, many students find that training in the language is an important asset to careers in the natural and physical sciences, engineering, medicine, and business. Students of journalism, library science, and the social and military sciences also have strengthened their career preparation through the study of Russian. Some students major in Russian before going into law, international relations, or another profession; others study Russian as preparation for graduate work in Slavic languages and literatures, comparative literature, English, or other humanitarian disciplines.

Russian majors with a B.A. and the required education courses occasionally seek teaching careers in secondary schools (see the relevant teacher-preparation programs in the College of Education section of the Catalog). A number of governmental agencies annually interview job candidates who have advanced training in Russian; these agencies give preference to applicants who couple strong language proficiency with a well-rounded background in area studies. Students who develop an exceptional facility with the language may pursue careers in literary and technical translation and interpretation.

Undergraduate Program

Students working toward the B.A. in Russian must meet the College of Liberal Arts general degree requirements (see the College of Liberal Arts section of the Catalog) and earn at least 28 semester hours of credit in advanced Russian courses. Required courses are as follows.

041:109 Beginning Composition and Conversation I 4 s.h.
041:110 Beginning Composition and Conversation II 4 s.h.
041:111-112 Third-Year Russian I-II 8 s.h.
041:113-114 Fourth-Year Russian I-II 8 s.h.

Three of these:
041:101 Russian Literature in Translation 1800-1860 3 s.h.
041:102 Russian Literature in Translation 1860-1917 3 s.h.
041:103 Russian Literature since 1917 3 s.h.
041:126 Cult Films of the Last Soviet Generation 3 s.h.
041:128 Topics in Russian Music and Culture 3 s.h.
041:155 Tolstoy and Dostoevsky 3 s.h.
041:156 Invitation to Nabokov 3 s.h.
041:160 Women in Russian Society 3 s.h.
041:170 Rise of the Russian Novel 3 s.h.
041:185 Russian Culture 3 s.h.
041:186 Russia Today 3 s.h.

Students majoring in Russian are urged to choose elective courses in economics, geography, history, or political science. 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 gaining employment.

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: competence in first-year Russian and at least one-quarter of the semester hours required for graduation
All students in the Department of Russian have the option of earning a K-12 endorsement to teach Russian, along with the bachelor's degree in Russian and overall may enroll in the honors program in Russian. An extensive reading program with discussions, regular reports, and a semester paper constitute each honors work unit of 3 semester hours. Students may take up to 9 semester hours of honors in Russian.

**Honors**

Russian majors of junior or senior standing with a grade-point average of at least 3.20 both in Russian and overall may enroll in the honors program in Russian. Candidates for the M.A. must have completed either the undergraduate major in Russian or the minor in Russian focus their preparation on 100-level courses, such as the sequences 041:109-110, 041:111-112, or 041:113-114. Students who elect a language studies emphasis focus on the historical development of Russian and engage in advanced study of grammar, contemporary phonology, morphology, syntax, and stylistics. Students who complete the language studies emphasis must complete the equivalent of one year of Russian and an additional 2 courses in the major.

**Minor**

A minor in Russian requires 15 semester hours with a grade-point average of at least 2.00. Of these, 12 must be taken at The University of Iowa in advanced courses. The department recommends that students seeking a minor in Russian focus their preparation on 100-level courses. Students may take up to 9 semester hours of honors in Russian.

**Elementary and Secondary Teaching Licensure**

Russian majors interested in licensure to teach in elementary and/or secondary schools must successfully complete the requirements for a major in Russian and must be admitted to the College of Education’s foreign language teacher education program. Several courses in the College of Education are required, as is one semester of student teaching in the senior year. All students in the Department of Russian have the option of earning a K-12 endorsement to teach Russian, along with the bachelor’s degree. For information about the foreign languages teacher education program and graduate programs in foreign language education, contact the College of Education, Division of Curriculum and Instruction. Students who plan to use a Russian minor to teach at the elementary and/or secondary level must contact the College of Education concerning requirements.

**Language for Nonmajors**

The department offers a sequence of courses that satisfies the General Education Program foreign language requirement. Students who have had experience with Russian should take the Russian Foreign Language Placement Test, offered during summer orientation programs and monthly by Evaluation and Examination Service. The test helps determine the level at which a student should begin Russian language study at The University of Iowa. Students with no background in Russian should begin their study with 041:001. Students who complete 041:001, 041:002, 041:003, and 041:004 satisfy the foreign language requirement.

**Graduate Program**

Available with or without thesis, the M.A. program in Russian offers two major emphases, literary or language study. The focus in literary studies is on the development of Russian literature, both as a national phenomenon and as a part of European culture. Students are expected to analyze writers’ styles, perceive literary techniques, recognize literary influences, and develop the ability to soundly criticize form, content, and language of works in all genres. Students who elect a language studies emphasis focus on the historical development of Russian and engage in advanced study of grammar, contemporary phonology, morphology, syntax, and stylistics. Candidates for the M.A. must have completed either the undergraduate major or the minor in Russian. Deficiencies in previous training may be made up by taking appropriate courses. Candidates are required to complete a minimum of 30 semester hours of graduate work, with or without thesis. Ideally, the program should include courses in related fields, such as comparative literature, linguistics, history, political science, philosophy, and other languages. Students in the thesis program may earn 4-8 semester hours of credit for thesis preparation. Prior to scheduling the M.A. examination and submitting the thesis (where applicable), candidates must pass a comprehensive Russian language examination; they also must demonstrate a reading knowledge of either French or German.

**Financial Support**

Support is available to graduate students in the form of tuition scholarships and teaching and research assistantships; it is awarded annually on a competitive basis. Teaching assistantships generally are not awarded to first-year graduate students, although exceptions may be made on the basis of advanced language skills. Applications are considered only from students who have been admitted to the Graduate College. Inquiries should be addressed to the department.

**Summer and Study Abroad Programs**

The department strongly encourages undergraduate and graduate students to participate in intensive programs of language study, both in the United States and in Russia. UI students participate in summer, semester, and academic year programs under the auspices of the American Council of Teachers of Russia (ACTR), the association that directs academic language training programs in Moscow and St. Petersburg. Study programs in other cities and regions of Russia can be planned with faculty assistance.

Before they study abroad, many students advance and refine their Russian language skills in various intensive summer programs at major American universities, including The University of Iowa. Inquiries should be directed to the Russian department.

**Course Work for Nonmajors**

A number of classes are open to all University students and are offered in English. These include survey courses in Russian literature and culture, a monograph course on Tolstoy and Dostoevsky, and courses on women in Russian society and Russia today.

**Special Activities**

The International Crossroads Community is located in Hillcrest Residence Hall. It welcomes both American and international students to broaden their knowledge of international issues and foreign languages and cultures. Its programs, designed for students of Russian as well as other languages, include weekly language dinners with students and faculty, public festivals and celebrations of cultural holidays, educational presentations on topics such as study abroad and international careers, and music and theater performances.

**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.

**Courses**

**For Undergraduates and Graduate Students**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>041:000</td>
<td>Cooperative Education Internship</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>041:001</td>
<td>First-Year Russian I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>041:002</td>
<td>First-Year Russian II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>041:003</td>
<td>Second-Year Russian I</td>
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**For Undergraduates**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
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<tr>
<td>041:000</td>
<td>Cooperative Education Internship</td>
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<td>041:001</td>
<td>First-Year Russian I</td>
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<td>First-Year Russian II</td>
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<td>041:004</td>
<td>Second-Year Russian II</td>
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</table>
041:00 Russian Literature in Film 1-2 s.h.
041:01 Russian Literature in Translation 1800-1917 3 s.h.
Major writers, themes, genres, and movements, including Pushkin, Lermontov, Gogol, Turgeniev, Chernychevsky, Dostoevsky; analytical and literary-historical approaches, with attention to the polemic between Westernizers, Slavophiles. Taught in English. GE: humanities.
041:102 Russian Literature in Translation 1860-1917 3 s.h.
Continuation of 041:101, with focus on large-form novel and rebirth of short-form fiction, drama, and Symbolist novel in the Silver Age; Saltykov-Shchedrin, Andrew, Chekhov, Gorky, and short stories. Taught in English. GE: humanities.
041:103 Russian Literature since 1917 3 s.h.
Major writers, themes, genres, movements associated with post-1917 Russian literature, especially the literary ferment of the 1920s: regeneration of literary expression from the early 1930s to Stalin’s death; major trends in post-Stalin literature. Taught in English.
041:108 Special Readings arr.
Russian-language materials determined by student and instructor. May be repeated. Prerequisite: 16 s.h. of language instruction
041:109 Beginning Composition and Conversation I 4 s.h.
Oral and written skills developed through idiomatic usage, stylistics, phonetics, intonation, grammar review; supplemented by short stories, newspaper texts. Taught in Russian. Prerequisite: 041:004.
041:110 Beginning Composition and Conversation II 4 s.h.
Oral and written skills developed through idiomatic usage, stylistics, phonetics, intonation, grammar review; supplemented by short stories, conversation handbooks, current periodicals. Taught in Russian. Prerequisite: 041:004.
041:111 Third-Year Russian I 4 s.h.
Advanced grammar, reading, conversation, and written skills through oral reports, compositions, conversation. Prerequisite: 041:100 or equivalent.
041:112 Third-Year Russian II 4 s.h.
Advanced grammar, reading, conversation, and written skills through oral reports, compositions, conversation. Prerequisite: 041:111 or equivalent.
041:113 Fourth-Year Russian I 4 s.h.
Perfecting spoken Russian and oral comprehension of native speech Taught in Russian. Prerequisite: 041:112 or 3 years of college-level Russian or equivalent.
041:114 Fourth-Year Russian II 4 s.h.
Perfecting spoken Russian and oral comprehension of native speech. Taught in Russian. Prerequisite: 041:113 or 3 years of college-level Russian or equivalent.
041:126 Cult Films of the Last Soviet Generation 3 s.h.
Favorite films of pre-Perestroika generations; “the period of stagnation” in post-Perestroika textbooks. Same as 048:126.
041:128 Topics in Russian Music and Culture 3 s.h.
A wide variety of works from 19th-century operas to popular songs of the 1960s; musical and textual features that make the works distinctively Russian.
041:155 Tolstoy and Dostoevsky 3-4 s.h.
Tolstoy: The Cossack Tales, Anna Katerina, Hadji Murad, “Death of Ivan Ilyich,” “Father Sergius”; Dostoevsky’s Crime and Punishment; Notes from the Underground, The Brothers Karamazov, and short stories. Taught in English.
041:156 Invitation to Nabokov 3 s.h.
Nabokov’s works and his writings on Russian literature. Same as 008:156, 048:156.
041:160 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.
041:162 Literature, Music, and Aesthetics 2-4 s.h.
Interdisciplinary connections between literature, music; attention to specific cultural, ideological contexts. Same as 025:137, 033:145.
041:170 Rise of the Russian Novel 3 s.h.
Russian literary history, theory of the novel, genre theory; Pushkin to Dostoevsky. Taught in English. Junior or higher standing required. Same as 048:170.
041:185 Russian Culture 3 s.h.
Development of art forms in Russia from middle ages to present; painting, music architecture, literature viewed against their political and social settings. Taught in English. GE: foreign civilization and cultural.
041:186 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: foreign civilization and culture.
041:199 Honors arr.
Consent of department chair required.

Primarily for Graduate Students
041:203 Russian Morphology 3 s.h.
Russian phonology and morphology, with emphasis on conjugation and verbal derivation; techniques of phonological and morphological analysis.
041:205 Russian Syntax 3 s.h.
Major tenses in Russian syntax, such as impersonal sentences, voice, government; introduction to syntactic analysis; readings in Russian. English.
041:206 Russian Stylistics 3 s.h.
Characteristics of Russian prose styles; stylistic nuances of words, expressions.
041:211 Russian Romanticism 3 s.h.
Major works 1795-1845 and prevailing theoretical views of the period; Russian Romantic poets, exoticism, exoticism, historicism; readings in critical works, poetic tale, society tale, historical-military tale, travel sketches, psychological fiction, mixed forms of the 1840s. Prerequisite: 041:101 or equivalent.
041:212 Modern Russian Literature 1880-1917 3 s.h.
Literary trends and achievements of the Silver Age; poetic prose, critical-theoretical texts. Taught in Russian.
041:215 Russian Poetry 3 s.h.
Main currents of 19th and 20th-century poetry; focus on interpretation.
041:216 Russian Folklore 3 s.h.
Traditional folklore genres; marriage and magic rituals; Russian epics, lyrical songs, folk theater; system and poetics of the Russian fairy tale, influence of folklore on everyday life, culture.
041:231 Russian Literary History: 1100-1500 3 s.h.
Lost history; renaissance and expansion of written language. Ra灼ke, 11th-13th centuries. Prerequisite: 041:101 or equivalent.
041:234 Principles of Teaching and Learning Foreign Language 3 s.h.
Consent of instructor required. Same as 009:234, 013-221, 039:234.
041:261 History of the Russian Language 3 s.h.
The history of Russian: the influence of Slavic and Germanic languages and morphological development of Russian from Common Slavic era to present; development of literary language from 10th century to present; Old Russian reading skill development.
041:275 Seminar: Russian Literature 3 s.h.
May include Russian formalism and structuralism, literature of “moral ambiguity,” romantics and romanticism, broadly aesthetic or pragmatic approaches to literature, culture.
041:276 Seminar: Russian Linguistics 3 s.h.
May include Russian pragmatics, colloquial Russian; Russian pragmatics: Slavic gender linguistics.
041:279 Independent Research arr.
Directed study. Consent of instructor required.

RUSSIAN, EAST EUROPEAN, AND EURASIAN STUDIES

Director: William M. Reisinger (Political Science)
Affiliated faculty: William Albrecht (Economics), David Bedell (Family Medicine), Edward Bell (Pediatrics), Terry Boles (Management Organizations), Amy Butler (Social Work), Steven Clark (Family Dentistry), Thomas Cook (Occupational and Environmental Health), Douglas DeLong (Accounting), Richard Dobyns (Family Medicine), Melanie Dreher (Nursing), Carol Fethke (Economics), Elena Gavrusova (Linguistics), James Hall (Social Work), Gregory Hamot (Curriculum and Instruction), Hanno Hardt (Journalism and Mass Communication), Dennis Harper (Psychology), Vicki Heshi (Political Science), Peter Hilsenthath (Health Management and Policy), N. William Hines (Law), Peter Hlebowitch (Curriculum and Instruction), Steven Hoch (History), Gerald Jogerst (Family Medicine), Cynda Johnson (Family Medicine), Patricia Kelley (Social Work), Vadim Kreyd (Russian), Patrick Lloyd (Family Dentistry), Timothy Lowe (Management Sciences), Mary Anne Marchik (Social Work), John McLure (Curriculum and Instruction), Paul Michaels (History), Arthur Miller (Political Science), Margaret Mills (Russian), Karen Myers (Russian, East European, and Eurasian Studies), Denise Powers (Political Science), Salome Raheem (Social Work), William Reisinger (Political Science), John Reitz (Law), Paul Retish (Curriculum and Instruction), Raymond Riezman (Economics), Catherine Ringen (Linguistics), David Rosenthal (Family Medicine), Jerzy Rubach (Linguistics), Roumyana Slabakova (Linguistics), Donald Smith (Journalism and Mass Communication), Kenneth Starck (Journalism and Mass Communication), Elizabeth Swanson (Nursing), William Theisen (Social Work), Russell Valentinov (Russian), Thomas Walz (Social Work), Paul Weller (Finance), David Wyatt (Health Management and Policy).
Undergraduate degree: B.A. in Russian, East European, and Eurasian Studies
Web site: http://www.uiowa.edu/-creees

REEES offers a Bachelor of Arts degree in Russian, East European, and Eurasian Studies (REEES) is an interdisciplinary program designed to provide undergraduates with a broad array of opportunities to study the languages, histories, cultures, economics, politics, and social settings of the postcommunist countries in Eastern Europe, the Caucasus, and Central Asia. In REEES, students can acquire advanced Russian language skills as well as training in the less-commonly taught languages of Czech, Hungarian, Polish, Kazakh, Serbo-Croatian, and Uzbek. New courses and a range of special events are offered on a regular basis. REEES sets these learning opportunities in a coordinated interdisciplinary framework.

Undergraduate Program
information analysis, and policy formulation almost invariably give preference to applicants who couple a well-rounded background in area studies with strong language proficiency. For this reason, the REEES major at Iowa requires three years of college-level training, or the equivalent, in the Russian language rather than the two-year requirement found in comparable programs nationwide. The language requirement also can be satisfied with two years of college-level training, or the equivalent, in any of the less-commonly taught languages of the region. The unique language opportunities of the Iowa major give graduates a competitive edge in seeking career opportunities.

Curriculum

Students pursuing the Bachelor of Arts in Russian, East European, and Eurasian Studies must meet the general College of Liberal Arts degree requirements (see the College of Liberal Arts introductory section of the Catalog) and earn at least 33 semester hours of credit in the program. The major requires the following.

41S:001 Introduction to Russia, the Soviet Union, and Its Successor States 3 s.h.
Polish, Serbo-Croatian, or Uzbek). This requirement can be met with 16 semester hours of college-level course work in the language, or by passing the relevant proficiency examinations.

Sample Course of Study

FIRST YEAR
Fall Semester
06E:001 Principles of Microeconomics 3-4 s.h.
041:001 First-Year Russian I 4 s.h.
41S:001 Introduction to Russia, the Soviet Union, and Its Successor States 3 s.h.
General Education electives 4-6 s.h.

Spring Semester
06E:002 Principles of Macroeconomics 3-4 s.h.
16E:177 Imperial Russia: 1801-1917 3 s.h.
041:002 First-Year Russian II 4 s.h.
General Education electives 4-6 s.h.

SECOND YEAR
Fall Semester
16E:176 Imperial Russia 1598-1801 3 s.h.
16E:178 Soviet Union 1917-1945 3 s.h.
041:003 Second-Year Russian I 4 s.h.
General Education electives 4-6 s.h.

Spring Semester
06E:164 Economies in Transition 3 s.h.
16E:179 Soviet Union 1945-1991 3 s.h.
041:004 Second-Year Russian II 4 s.h.
General Education electives 4-6 s.h.

THIRD YEAR
Fall Semester
019: 155 Mass Media and Society (when content is area-related) 3 s.h.
030: 141 Russian/Post-Soviet Politics 3 s.h.
041: 111 Third-Year Russian I 4 s.h.
General Education electives 4-6 s.h.

Spring Semester
019: 156 Comparative Communication Systems (when content is area-related) 3 s.h.
041: 112 Third-Year Russian II 4 s.h.

General Education electives 4-6 s.h.

FOURTH YEAR
Fall Semester
06E:125 International Economics 3 s.h.
041:185 Russian Culture 3 s.h.
General Education electives 3-4 s.h.
Organizational meeting for senior project (registration for spring semester)
Spring Semester
030:168 Russian Foreign Policy 3 s.h.
41S:190 Senior Project 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.)

The program encourages students to do work beyond these minimum requirements.

Note: Students who choose second-year competence in a language other than Russian to satisfy the REEES language requirement should develop a four-year plan with a REEES adviser.

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: competence in first-year Russian, three courses in the major, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: competence in second-year Russian, seven courses in the major, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: competence in Third-Year Russian I, or first semester of a second REEES language, and 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

Honors

The program leading to a B.A. degree with honors is open to students with a cumulative grade-point average of at least 3.20. To graduate with honors, students must maintain a grade-point average of at least 3.50 in the Russian, East European, and Eurasian Studies program and a cumulative grade-point average of at least 3.20. Honors students must take 12 semester hours of course work with a grade of B or higher in each course. In consultation with the honors adviser, students choose courses and honors seminars and/or projects in economics, history, journalism and mass communication, political science, and Russian, as appropriate. The last 3 semester hours may be earned by completing an honors research project directed by faculty members from at least two REEES disciplines.
Students interested in seeking a B.A. degree with honors should contact the University Honors Program and the REEES program honors adviser before they begin their junior year.

**Joint Programs**

Joint programs leading to a double major in Russian, East European, and Eurasian Studies and another discipline can be managed without difficulty. Double majors are appropriate in all the program’s constituent disciplines, especially in the Russian language or in economics. Other combinations are possible as well. In most cases, at least two courses count toward requirements in each major.

**Supplementary Study Programs**

The REEES program encourages all participants to explore opportunities for internships with governmental departments and agencies, nonprofit organizations and institutions, and businesses. Internships not only enrich the student’s learning from course work but also may lead to enhanced employment opportunities after graduation. In some cases, academic credit may be arranged for an internship.

Recent REEES majors have participated in the Boston University Internship program in Moscow and St. Petersburg.

**Study Abroad**

REEES faculty members work closely with the American Council of Teachers of Russian (ACTR) in Washington, D.C., the premier accredited national exchange program in the United States to prepare students both linguistically and culturally for the study abroad experience. ACTR currently has academic programs in Moscow and St. Petersburg. Through an agreement with Bryn Mawr College, ACTR participants receive academic credit toward degree programs at their home institutions.

The University of Iowa has a formal exchange program with Joszef Attila University in Szeged, which gives students the opportunity to study intensive Hungarian for the academic year. In addition to Russian and Hungarian language training, numerous programs are available to students who wish to pursue language and cultural training in Bulgaria, the Czech and Slovak republics, the former East Germany, Hungary-Poland, the Ukraine, and Romania. REEES faculty members and the Office for Study Abroad can help students choose these program sites.

**National Resource Center**

In 1997 the U.S. Department of Education designated The University of Iowa as one of only 11 National Resource Centers for Russian, East European, and Eurasian Studies (CREEES) at the University has brought the REEES program national distinction and has
given students, faculty, and staff a broader range of educational opportunities. Students can study languages such as Kazakh, Slovak, Tatar, and Uzbek. New courses have been developed in journalism and mass communication, business, finance and marketing, law, medicine, nursing, and public health. The center also has increased the number of visiting faculty members from Russia, Eastern Europe, and Central Asia.

CREEES is strengthening and redesigning the REEES curriculum to reflect the sweeping changes that have occurred since the collapse of communism. The center has broadened the base of undergraduate international studies at the University. It helps faculty members and students acquire research and travel support and other resources necessary to publish and contribute to REEES area studies, and it encourages cooperation among University departments in extracurricular activities related to the former Soviet Union and Eastern Europe. CREEES also supports a rich public programming agenda each year, sponsoring public lectures, symposiums, films, and cultural events that focus on the former Soviet Union, Eastern Europe, and Eurasia. Scholars of national and international prominence are invited to address the University community and to interact with faculty, staff, and students. Each year, in collaboration with REEES, the center sponsors a symposium on issues related to the former Soviet Union and/or Eastern Europe.

**Scholarships**

Students are encouraged to apply for a Stanley Undergraduate Scholarship for International Research/Fieldwork through the University of Iowa International Program. The scholarships are awarded 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 consult REEES advisers and the Department of Russian for information on other available scholarships, including scholarship opportunities for participation in intensive Russian language training in the summer, semester, and academic year study abroad programs in Russia.

**Special Activities**

The International Crossroads Community (ICC) is located in Hillcrest Residence Hall. It welcomes both Russian and international students to broaden their knowledge of international issues and foreign languages and cultures. Its programs, designed for students of Russian as well as other languages, include weekly language dinners with students and faculty, public festivals and celebrations of cultural holidays, educational presentations on topics such as study abroad and international careers, and music and theater performances.

**REEES Area Core Courses**

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

**ECONOMICS**

*06E:001 Principles of Microeconomics 3-4 s.h.
*06E:002 Principles of Macroeconomics 3-4 s.h.
06E:125 International Economics 3 s.h.
06E:164 Economies in Transition 3 s.h.
06E:197 Honors Seminar (when content is area-related) arr.

*These courses are prerequisites to the other economics courses and do not count toward the 33 semester hours of course work required for the Bachelor of Arts.

**HISTORY**

16E:051 Colloquium for History Majors (European) (when content is area-related) 3 s.h.
16E:176 Imperial Russia 1598-1801 3 s.h.
16E:177 Imperial Russia 1801-1917 3 s.h.
16E:178 Soviet Union 1917-1945 3 s.h.
16E:179 Soviet Union 1945-1991 3 s.h.
016:256 Readings: Russian History arr.

**JOURNALISM AND MASS COMMUNICATION**

019:155 Mass Media and Society (when content is area-related) 3 s.h.
019:156 Comparative Communication Systems (when content is area-related) 3 s.h.
019:169 Topics in Mass Communication (when content is area-related) 3 s.h.
019:180 Special Projects in Mass Communication (when content is area-related) arr.
019:181 Readings in Communication and Mass Communication (when content is area-related) 1-3 s.h.
019:190 Honors Readings (area-related) 1-3 s.h.
019:219 Topics in Mass-Communication (when content is area-related) 3 s.h.
019:254 Communication and Change (when content is area-related) 3 s.h.

**LAW**

All law courses require instructor’s consent.
091:224 Comparative Law 2-3 s.h.

**POLITICAL SCIENCE**

030:041 Introduction to the Politics of Russia and Eurasia 3 s.h.
030:141 Russian/Post-Soviet Politics 3 s.h.
030:147 Ethnicity, Nationalism, and States in Transitions 3 s.h.
030:149 Problems in Comparative Politics (when content is area-related) 3 s.h.
030:156 Politics of Ethnic and Cultural Conflict 3 s.h.
030:168 Russian Foreign Policy 3 s.h.
030:179 Transitions to Democracy 3 s.h.
030:183 Honors Seminar on Comparative Politics (when content is area-related) 3 s.h.
030:184 Honors Seminar on International Politics (when content is area-related) 3 s.h.
RUSSIAN
All courses are conducted in English.
041:101 Russian Literature in Translation 1800-1860 3 s.h.
041:102 Russian Literature in Translation 1860-1917 3 s.h.
041:155 Tolstoy and Dostoevsky 3 s.h.
041:160 Women in Russian Society 3 s.h.
041:181 Russian Literature since 1917 3 s.h.
041:185 Russian Culture 3 s.h.
041:186 Russia Today 3 s.h.
041:199 Honors arr.

Courses
41S:001 Introduction to Russia, the Soviet Union, and Its Successor States 3 s.h.
41S:121 First-Year Polish I 4 s.h.
Basic language skills—listening, reading, speaking, writing; fundamentals of grammar; emphasis on student participation; first of a two-semester sequence.
41S:122 First-Year Polish II 4 s.h.
Continuation of 41S:121, which is prerequisite.
41S:123 Second-Year Polish I 4 s.h.
Proficiency building in vocabulary and grammatical foundations of elementary Polish; use and recognition of oral, aural, written, and reading language skills. Prerequisite: 41S:122 or equivalent.
41S:124 Second-Year Polish II 4 s.h.
Continuation of 41S:123, which is prerequisite.
41S:131 First-Year Hungarian I 4 s.h.
Basic language skills—listening, reading, speaking, writing; fundamentals of grammar; emphasis on student participation; first of a two-semester sequence.
41S:132 First-Year Hungarian II 4 s.h.
Continuation of 41S:131, which is prerequisite.
41S:133 Second-Year Hungarian I 4 s.h.
Proficiency building in vocabulary and grammatical foundations of elementary Hungarian; use and recognition of oral, aural, written, and reading language skills. Prerequisite: 41S:132 or equivalent.
41S:134 Second-Year Hungarian II 4 s.h.
Continuation of 41S:133, which is prerequisite.
41S:141 First-Year Czech I 4 s.h.
Basic language skills—listening, reading, speaking, writing; fundamentals of grammar; emphasis on student participation; first of a two-semester sequence.
41S:142 First-Year Czech II 4 s.h.
Continuation of 41S:141, which is prerequisite.
41S:143 Second-Year Czech I 4 s.h.
Proficiency building in vocabulary and grammatical foundations of elementary Czech; use and recognition of oral, aural, written, and reading language skills. Prerequisite: 41S:142 or equivalent.
41S:144 Second-Year Czech II 4 s.h.
Continuation of 41S:143, which is prerequisite.
41S:150 Independent Study arr.
41S:151 First-Year Kazakh I 4 s.h.
Basic language skills—listening, reading, speaking, writing; fundamentals of grammar; emphasis on student participation; first of a two-semester sequence.
41S:152 First-Year Kazakh II 4 s.h.
Continuation of 41S:151, which is prerequisite.
41S:161 First-Year Latvian I 4 s.h.
Basic language skills—listening, reading, speaking, writing; fundamentals of grammar; emphasis on student participation; first of a two-semester sequence.
41S:162 First-Year Latvian II 4 s.h.
Continuation of 41S:161, which is prerequisite.
41S:166 First-Year Latvian II 4 s.h.
Continuation of 41S:165, which is prerequisite.
41S:170 Comparative Health Systems: Russia, Eastern Europe, and Eurasia 3 s.h.
Evolution of Soviet and Russian health care, links between economic and health systems, environmental health, health professions, issues in health care. Prerequisite: one economics course. Same as 152:170, 174:170.
41S:171 First-Year Uzbek I 4 s.h.
Basic language skills—listening, reading, speaking, writing; fundamentals of grammar; emphasis on student participation; first of a two-semester sequence.
41S:172 First-Year Uzbek II 4 s.h.
Continuation of 41S:171, which is prerequisite.
41S:181 First-Year Serbo-Croatian I arr.
Basic language skills—listening, reading, speaking, writing; fundamentals of grammar; emphasis on student participation; first of a two-Semester sequence.
41S:182 First-Year Serbo-Croatian II arr.
Continuation of 41S:181, which is prerequisite.
41S:183 First-Year Lithuanian I 4 s.h.
Basic language skills—listening, reading, speaking, writing; fundamentals of grammar; emphasis on student participation; first of a two-semester sequence.
41S:184 First-Year Lithuanian II 4 s.h.
Continuation of 41S:183, which is prerequisite.
41S:185 First-Year Estonian I 4 s.h.
Basic language skills—listening, reading, speaking, writing; fundamentals of grammar; emphasis on student participation; first of a two-semester sequence.
41S:186 First-Year Estonian II 4 s.h.
Continuation of 41S:185, which is prerequisite.
41S:190 Senior Project 3 s.h.
41S:199 Honors arr.

SCIENCE EDUCATION
Coordinator: Edward L. Pizzini
Professors: Edward L. Pizzini, Robert E. Yager
Associate professors: George W. Costman, John T. Wilson
Associate professors emeriti: Darrell G. Phillips, Daniel S. Sheldon
Undergraduate degree: B.S. in Science Education
Graduate degrees: M.A.T.; M.S.; Ph.D. in Science Education
Web site: http://www.uiowa.edu/~sted/

The academic programs in science education include 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.

Because science education is interdisciplinary, program planning requires the cooperation and involvement of a variety of University departments and colleges. Most of the formal requirements are drawn from courses offered in these varied departments.

Undergraduate Program
The undergraduate program in science education represents a transdisciplinary major in science for students interested in education.

The science education major 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 studies in a single area of science, they often

must complete additional courses in that discipline after they are admitted to the Graduate College.

All of the emphasis areas in science education have the following characteristics in common.

- Depth in a general area of science equivalent to three years or six semesters of sequential study
- Preparation in a second area of science equivalent to two years or four semesters of sequential study
- Introduction to two other fields 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
- Experience with the application of scientific knowledge

Bachelor of Science
The B.S. in science education requires 53-64 semester hours earned in selected courses in College of Liberal Arts science departments, science applications courses, and courses in the history, philosophy, and sociology of science. Students may choose from four emphasis areas within the science education major: biological sciences, earth science, chemistry, and physics. Students who wish to be certified to teach science must complete the professional education requirements, a 40-semester-hour sequence.

Requirements in the emphasis areas have changed. Students who declare a major in science education on the first day of fall semester 2000 or after must complete the requirements shown here. Those who declared a major before the first day of fall semester 2000 should consult their advisers about appropriate courses to complete their degrees.

Students who wish to earn a B.S. degree in science education choose one of the following three options.

Option I (58-64 semester hours): Complete two emphasis areas and the broad science field block.

Option II (minimum of 54 semester hours): Complete one emphasis area, 15 semester hours in a second emphasis area, the broad science field block, and at least 6 semester hours of additional course work in other emphasis area(s).

Option III (53-57 semester hours): Complete one emphasis area, 12 semester hours in each of the other emphasis areas, and complete 097:128 and 097:130

BIOLOGY EMPHASIS AREA
Total of 27 semester hours

002:010 Principles of Biology I 4 s.h.
002:011 Principles of Biology II 4 s.h.
002:022 Ecology and Evolution 3 s.h.
002:081 Human Genetics 3 s.h.
Broad Field Science Block

Students complete a science application course or an approved science course in the two science areas they did not choose as major emphasis areas, and two additional courses (total of 10 semester hours).

One of these:

- 097:102 Societal and Educational Applications of Earth and Environmental Science 3 s.h.
- 097:103 Societal and Educational Applications of Biological Sciences 3 s.h.
- 097:105 Societal and Educational Applications of Physical Science Concepts 3 s.h.
- 097:106 Societal and Educational Applications of Chemical Concepts 3 s.h.

Both of these:

- 097:128 Meaning of Science 2 s.h.
- 097:130 Science in Historical Perspective 2 s.h.

Four-Year Graduation Plan

The four-year graduation plan is not available to students majoring in science education.

Teacher Licensure

Candidates for a bachelor’s degree in science education may, but are not required to, be admitted to the teacher education program (TEP) in the College of Education. In order to be considered for admission to the TEP, students must have completed a minimum of 30 semester hours of science course work with a cumulative grade-point average of at least 2.70. A limited number of applicants are admitted to the teacher education program. Admission decisions are based on grade-point averages in science courses and other criteria relevant to teaching.

Procedures and deadlines for TEP applications are described under “Curriculum and Instruction” in the College of Education section of the Catalog. Interested students must apply to the College of Education for admission to the Teacher Education Program.

TEP students must complete the College of Liberal Arts General Education Program, the requirements for a science education major, and the following professional education courses, which total 40 semester hours.

- 07S:180 Human Relations for the Classroom Teacher 3 s.h.
- 07S:185 Educational Psychology and Measurement 3 s.h.
- 07S:100 Foundations of Education 3 s.h.
- 07S:151 Science Methods I: Introduction to Science Teaching (taken with 07S:153) 2 s.h.
- 07S:152 Science Methods II: Research-Based Framework for Teaching Science (taken with 07S:159) 2 s.h.
- 07S:153 Science Methods III: Improving Practice and Advancing a Research-Based Framework for Teaching Science (taken with 07S:179 or 07S:189) 2 s.h.

Minors in Science Teaching

Four science teaching minors are available for persons with teaching majors in other academic areas: biology, chemistry, earth science, and physics. Students must complete a major emphasis area and a science methods course, approved by the science education department.

Special Rules

Since the Science Education Program may involve many faculty advisers and several colleges and departments, some special rules and regulations apply to science education students. They include the following.

- At least 10 semester hours of graded credit in science must be earned at The University of Iowa.
- No credit from the CLEP Natural Science General Examination may be used toward the major in science education.
- Science courses taken in other colleges of the University (e.g., Colleges of Engineering and Medicine) are not accepted in lieu of the required course work for the major unless one of the College of Liberal Arts science departments certifies in writing to the Office of the Registrar that the course from outside the college is equivalent to the one offered by the College of Liberal Arts department.
- Courses used for the major may not be taken pass/nonpass; grades from all courses used for 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 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.
Honors
To graduate with honors, students must maintain a grade-point average of at least 3.20 and complete 097:099 Honors Research Project in addition to other science education requirements.

Graduate Programs
The Science Education Program offers graduate studies leading to the Master of Arts in Teaching, Master of Science, and Doctor of Philosophy. These programs are described under “Secondary Education” in the College of Education section of the Catalog. The Master of Science with specialization in elementary school science education is described under “Early Childhood and Elementary 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, 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.

Special Programs
A wide range of funded programs provides ample opportunity for students to be involved in innovative development and research in science education. Of special importance is the Science Education Center’s commitment to improvement of science programs, towards which it works with teachers from Iowa and throughout the country. Special inservice programs guide teachers in adapting innovative instructional methods, including problem solving methods, STS, and laboratory centered instruction. Other programs of the center promote development and revision of science curricula K-12, science literacy, and programs for gifted and talented students.

Many Science Education Center activities are funded by NSF, Title II, Eisenhower, the Iowa Lottery program, and Iowa industries. Teachers involved in in-service programs often are attracted to graduate degree programs.

International Programs
Science education faculty members have collaborated on a number of international research and development projects in countries including Brazil, China, Italy, Spain, Portugal, Israel, Nigeria, Malaysia, Indonesia, Korea, Australia, Taiwan, South Africa, Mexico, Venezuela, and India. Several faculty exchanges have occurred, and numerous cross-national studies have been undertaken.

International students enrich the opportunities for graduate studies at the Science Education Center. Many have enrolled from Indonesia, Korea, Malaysia, Nigeria, Taiwan, and other nations around the world. Relations are maintained and new collaborative efforts are under way each year.

Facilities
The facilities for science education programs include a main office; faculty, secretarial, and graduate student office space; a photographic laboratory; an ICN instructional laboratory; instructional classrooms, including space for elementary and secondary school science methods courses and applications-oriented courses; a departmental conference room used for seminars, conferences, meetings, workshops, and in-service work with teachers, supervisors, and administrators; a common area for small-group discussions and individual work; and a lounge.

The Science Education Center is located in Van Allen Hall near the center of the University campus.

Courses
The following are special courses offered by the Science Education Program to supplement the undergraduate emphasis areas in science education and to provide science options for elementary education majors.

Primarily for Undergraduates
097:099 Honors Research Project arr.

For Undergraduate and Graduate Students
097:102 Societal and Educational Applications of Earth and Environmental Science arr.
097:103 Societal and Educational Applications of Biological Sciences arr.
097:105 Societal and Educational Applications of Physical Sciences arr.
097:106 Societal and Educational Applications of Chemical Concepts arr.
097:107 Textile Science 3 s.h.
097:108 Experimental Textile Science 3 s.h.
097:113 Race to Save the Planet 3 s.h.
097:115 Introduction to Museology 3 s.h.

SECOND LANGUAGE ACQUISITION
Faculty members and students in the College of Liberal Arts participate in the Second Language Acquisition Program. For information about the program, see the Graduate College section of the Catalog.

SEXUALITY STUDIES
Director:
Executive committee: Meredith Alexander (Theatre Arts/Literature, Science, and the Arts), Florence Babb (Anthropology/Women’s Studies), Daniel Balderston (Spanish and Portuguese), Susan Birrell (Health, Leisure, and Sport Studies), Corey Creekmur (English), Michele Elison (Nursing/Education), Kevin Kopelson (English), Rob Latham (English), Ellen Lewin (Anthropology/Women’s Studies), Leslie H. Margolin (Education/Rhetorics of Inquiry), Kim Marra (Theatre Arts), Margaret Stratton (Art and Art History)
Affiliated faculty: Meredith Alexander (Theatre Arts/Literature, Science, and the Arts), Florence Babb (Anthropology/Women’s Studies), Daniel Balderston (Spanish and Portuguese), Susan Birrell (Health, Leisure, and Sport Studies), Patricia Caim (Law), Diana Cates (Religion), Corey Creekmur (English), Melissa Deem (Rhetoric), Richard DePuma (Art and Art History), Jane Desmond (American Studies), Anne Donadey (Cinema and Comparative Literature/Women’s Studies), Carolyn Dyer (Journalism and Mass Communication), Michele Elison (Education/Nursing), John Harper (English), Kathleen Jane (Health, Leisure, and Sport Studies), Susan Johnson (Medicine), Linda Kerber (History), Kevin Kopelson (English), Sue Lalky (Journalism and Mass Communication), Robert A. Latham (English), Ellen Lewin (Anthropology/Women’s Studies), Jean Love (Law), Teresa Mangum (English), Leslie H. Margolin (Education/Rhetorics of Inquiry), Kim Marra (Theatre Arts), Jeffrey Murray (Dentistry), David Stern (Philosophy), Margaret Stratton (Art and Art History)
The certificate is awarded only upon completion by the program director.

Students who complete the certificate program gain a better understanding of human sexuality and acquire valuable background knowledge applicable to a wide variety of humanities and social science fields and to careers in education, counseling, law, medicine, nursing, and other health professions.

Certificate

Undergraduate students may earn a certificate by completing the following requirements. Students may formally declare their intention to complete the certificate at the Liberal Arts Office of Academic Programs. Students plan their programs in close cooperation with sexuality studies advisers.

Students must earn 18 semester hours of credit with a grade-point average of at least 2.00 in courses chosen from the list of required and elective courses approved for the certificate.

Course work must include the following:

Both of these:
154:110 Introduction to Sexuality Studies 3 s.h.
154:180 Seminar in Sexuality Studies 3 s.h.

At least one of these:
154:120 Lesbian, Gay, Bisexual, and Transgender Identities 3 s.h.
154:130 Diverse Sexual Communities 3 s.h.

The remaining 9 semester hours are earned in courses chosen from those offered by the Program in Sexuality Studies or from the list of approved associated courses, which varies from year to year.

In keeping with the interdisciplinary nature of sexuality studies, students are encouraged to choose these electives from different disciplines. Students are encouraged to consult the program director before registration.

Courses applied toward the sexuality studies certificate also may be used to complete the General Education Program or to satisfy requirements of a major or minor.

Of the 18 semester hours required for the certificate, at least 9 must be earned at The University of Iowa. Transfer work is evaluated by the program director.

The certificate is awarded only upon completion of a bachelor's degree. Holders of Iowa baccalaureate degrees may return to complete the requirements for a certificate. Holders of baccalaureate degrees from other institutions who are not enrolled in a graduate or professional program at The University of Iowa may apply for admission to the College of Liberal Arts and are awarded the certificate on completion of the requirements.

Associated Courses

Other courses may be approved for use in earning the certificate. Students should consult the program director about courses not on this list.

AMERICAN STUDIES
045:044 Lesbian Lives in the U.S. 3 s.h.
045:157 Gender on Stage 3 s.h.

ANTHROPOLOGY
113:154 Anthropologies and Sexualities 3 s.h.

ART AND ART HISTORY
01H:128 Greek Vase Painting 3 s.h.
01H:135 Themes in Ancient Art 3 s.h.

CINEMA AND COMPARATIVE LITERATURE
048:194 (008:194, 131:194) Introduction to Feminist Criticism 3 s.h.

EDUCATION
07C:112 (042:112, 096:112) Human Sexuality 3 s.h.

ENGLISH
08G:011 Literature and Sexualities 3 s.h.
008:179 Literature and Society 3 s.h.
008:194 Introduction to Feminist Criticism 3 s.h.

HEALTH, LEISURE, AND SPORT STUDIES
028:176 Women, Sport, and Culture 3 s.h.

HISTORY
16A:154 Sexuality in the United States 3 s.h.

LITERATURE, SCIENCE, AND THE ARTS
033:030 Cultural Diversity and Identity 3 s.h.

NURSING
096:112 (042:112, 07C:112) Human Sexuality 3 s.h.

PSYCHOLOGY
031:140 Psychology of Interpersonal Relations 3 s.h.

RELIGION
032:071 Sexual Ethics 3 s.h.

SOCIAL WORK
042:112 (07C:112, 096:112) Human Sexuality 3 s.h.

SOCIOLOGY
034:161 The American Family 3 s.h.

THEATRE ARTS
049:118 American Women Playwrights: 19th and 20th Century 3 s.h.
PLA A
U.S. history or world history 15 s.h.
American government/political science 15 s.h.
In addition, students complete 15 semester hours in each of any two areas chosen from anthropology, economics, geography, psychology, and sociology.

PLAN B
Students complete 30 semester hours in one area chosen from American government/political science, anthropology, economics, geography, psychology, sociology, U.S. history, or world history. They also complete 15 semester hours in each of any two of the remaining disciplines.

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 20 classes and a total of 60 semester hours. Two of the classes also may be used to complete the General Education Program. These checkpoints do not include courses for teacher licensure.

Before the third semester begins: two courses in the major and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: six more courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: 14 courses in the major and at least three-quarters of the semester hours required for graduation

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
There is no separate honors program in social studies. Students who qualify for the University Honors Program are encouraged to do honors work in the social science department in which they wish to concentrate their work.

Teacher Licensure
Students who want to obtain a teaching license in history or other social science areas must declare and complete a major in the academic field in which they plan to teach. They also must earn a total of 30 semester hours in that field and complete 15 semester hours in one field related to history or social science. History majors are required to take only 15 semester hours of U.S. history and 15 semester hours of non-U.S. history. Majors and related fields may be chosen from the following: U.S. history, non-U.S. (world) history, anthropology, economics, sociology, geography, political science, or psychology. Courses must conform to departmental requirements for the major. In most instances, students are assigned an adviser in their major area as well as in social studies. Additional information on social studies teacher licensure programs is available from the program coordinator.

Graduate Programs
Master of Arts
The department offers the Master of Arts with or without thesis.

Graduates of the M.A. program are classroom teachers and chairs of social studies departments in junior and senior high schools. Some serve as curriculum consultants for school districts, while others are staff members in community colleges. A few have found the degree to be excellent preparation for professional work in correctional and penal institutions. For a few, the program has provided access to civil service position at various levels of government.

Students choose from two programs. Program A provides an opportunity for interdisciplinary work in history, social science, or related areas for classroom teachers and others interested in acquiring greater competence in their subject area. Program B is for individuals who have their bachelor’s degree in history or one of the other social sciences and who wish to obtain a teaching certificate in the process of completing the master’s degree. Both programs are described under “Curriculum and Instruction” in the College of Education section of the Catalog.

Doctor of Philosophy
Graduates of the Ph.D. program hold administrative posts in institutions of higher education, serving as presidents, provosts, or deans of faculty or graduate studies. Some are department chairs in colleges of education or curriculum directors in large school districts. Many are in teacher education programs in colleges and universities, while others are college instructors in their areas of academic concentration.

Requirements and admission criteria for the Ph.D. program in Social Studies Education are described under “Curriculum and Instruction” in the College of Education section of the Catalog.

Facilities
Social studies students have access to the facilities and facilities of the cooperating departments and the College of Education. Special agencies and services also are available, such as University Hospital School, the Iowa Center for Education in Politics, the Bureau of Educational Research, the Institute of Public Affairs, the Iowa Educational Information Center, the Curriculum Laboratory, the Statistical Consulting Center, the computer laboratory, and the academic computing services of Information Technology Services.

Faculty members who serve as social studies advisers and coordinators are experienced classroom teachers whose advanced degrees have been earned in history, the social sciences, and education. They are active in professional organizations, in consultation work, and in working with schools in curriculum revision.

SOCIAL WORK
Director: Salome Raheem
Professors: Lorraine Dorfman, Patricia L. Kelley
Professors emeriti H. Wayne Johnson, Thomas H. Walz
Adjunct professor: Howard J. Ruppel Jr.
Clinical professor: Susan Schechter
Associate professors: Amy Butler, Jim Hall, Susan Murti, Salome Raheem, Edward J. Saunders, William M. Theisen
Associate professors emeriti: W. Stanley Good, Katherine A. Knue
Adjunct associate professors: Lois Braverman, Jay Cayner, Janet Laube, Craig Mosher, Charles M. Palmer
Assistant professors: Carol Cooley, Carolyn Hartley, Robert Schepp
Assistant professors emerita: B. Eleanor Anstey, E. Jean Williams
Adjunct assistant professors: Larry Allen, James Cone, Greg Jensen, Paul Lambakis, Miriam Landman, Rebecca Munna, Janet Simons. Nicholas Tomley, Stephen Trefz.
Clinical assistant professors: Robert Jackson, M. Billie Marchi, Judith Rinchart, Robert Vander Beek
Adjunct instructors: James Alexander, Jan Antkeny, Nancee Blum, Varetta Braden, Ev Brightman, Lois Buntz, Jim Clark, Lonnie Cellung, Lance Clemens, Raygna Curry, Paul Danforth, Monique DiCarlo, James Eskin, Ronnie Evans, John Fairweather, Yvonne Farley, David Feehan, Judy Foote, Robert Freeman, Betty Grandquist, Dan Grinstead, William Hood, Lance Kinseth, Beth Larson, Esther Materson-Arum, Lynn McInerney, Ron Mirr, Pam Moore, Mary Newcomb, Linda Petersen, Kathleen Rueley, Mari Samuelson, Elizabeth Smith, Diane Somerville, Barrion Staples, Joy Sutter, Michael Thompson, Lisa Walz, Joanne Young
Clinical instructor: Julia Rembert
Visiting instructors: Cecilia Johnson, Don Wright
Graduate degree: B.A. in Social Work
Undergraduate nodetdegree program: minor in Social Work
Graduate degrees: M.S.W., Ph.D.
Web site: http://www.uiowa.edu/-socialwk

The School of Social Work provides an accredited program of professional training at the baccalaureate and master’s levels aimed at developing effective intervention in multiple systems and using professional social work values and ethics. It also offers a Ph.D. program, which prepares students to conduct research contributing to the knowledge base of social work, to lead in setting policy and practice, and to teach in colleges and universities.
students for informed community participation in social welfare issues; and to provide a base for graduate study in social work or allied professions.

The program is accredited by the Council on Social Work Education (CSWE). Major courses leading to the B.A. in social work are available in Des Moines as well as in Iowa City.

**Selective Admission**

The School of Social Work seeks 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. The application deadline is March 1. Admission to the undergraduate program in social work requires:

- completion of 042:022 Introduction to Social Work with a grade of C or higher (should be taken the sophomore year);
- a cumulative grade-point average 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.

Meeting these requirements does not guarantee admission. Admission often is limited by available instructional resources and opportunities for field placement.

For more information about admission policies, contact the school’s undergraduate coordinator.

**Bachelor of Arts**

Undergraduate students majoring in social work must complete the College of Liberal Arts General Education Program. When completing the General Education Program natural sciences component, students should include 002:021 Human Biology. The minimum requirements for a B.A. in social work include the following.

Social work courses (begins with 042:022 Introduction to Social Work and culminates with a field experience) 35 s.h.

Concentration area courses (see list of areas) 12 s.h.

Social science courses (12-14 semester hours):
- 030:001 Introduction to American Politics 3 s.h.
- 031:001 Elementary Psychology 3 s.h.
- 034:001 Introduction to Sociology: Principles 3-4 s.h.

A basic economics course 3-4 s.h.

The school recommends that required coursework be taken in the following sequence. Most social work courses are offered only once each year.

**FIRST AND SECOND YEARS**

- 030:001 Introduction to American Politics 3 s.h.
- 031:001 Elementary Psychology 3 s.h.
- 034:001 Introduction to Sociology: Principles 3-4 s.h.
- 042:022 Introduction to Social Work 4 s.h.
- A basic economics course 3-4 s.h.

**THIRD YEAR**

- 042:140 Human Behavior in the Social Environment 4 s.h.
- 042:141 Fundamentals of Social Work Practice 3 s.h.
- 042:142 Interpersonal Skills Laboratory 2 s.h.
- 042:144 Introduction to Social Work Research 4 s.h.
- 042:171 Social Work Processes 3 s.h.

**FOURTH YEAR**

- 042:143 Social Welfare Policy and Practice 3 s.h.
- 042:147 Racism and Discrimination 3 s.h.
- 042:189 Field Experience Seminar 1 s.h.
- 042:193 Field Experience 8-11 s.h.

**CONCENTRATION AREA**

The undergraduate program requires a minimum of 12 semester hours of course work in one of the areas listed below. Most students choose either sociology or psychology as their concentration. Students who wish to meet this requirement in an area not listed must present a written request and rationale to the faculty adviser and undergraduate coordinator. Courses used to complete the General Education Program do not count toward the 12 semester hours, nor do courses used to satisfy other requirements of the B.A. in social work.

- African American world studies
- Aging studies
- American studies
- Anthropology
- Business
- Communication studies
- Economics
- Education
- English
- Health, leisure, and sport studies
- History
- Journalism and mass communication
- Political science
- Psychology
- Religion
- Sociology
- Spanish
- Women’s studies

**Four-Year Graduation Plan**

The following checklists 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.)

Admission to the School of Social Work is by application; the four-year graduation plan does not apply to students who are not admitted by their fifth semester.

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: 042:022, four courses that can be applied to the major (may include concentration area), admission to the major, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: six more courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: four or five more courses in the major and finalized 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**

The School of Social Work has an honors program leading to a Bachelor of Arts with honors in social work. A cumulative grade-point average of at least 3.20 is required for participation in the program, which enables students to do in-depth study in subjects that interest them.

**Minor**

Students pursuing a minor in social work must complete 042:022 Introduction to Social Work (or for transfer students, an equivalent course from another institution); maintain a grade-point average of at least 2.00; and earn at least 12 semester hours in University of Iowa social work courses numbered 042: 100 and above.

**Graduate Programs**

**Master of Social Work**

The Master of Social Work program prepares social workers for leadership in the profession and for advanced social work practice in one of two concentrations. The program’s general focus is on family systems and social change, both domestic and international. Its common goals, to be met through a set of foundation requirements, are to enable all students to understand the dynamics of human development and change; to learn how to enhance the responsiveness of human service between society and the individual; and to acquire intervention skills for working with individuals, families, small groups, organizations, and communities in public and private agencies and institutions.

The program is accredited by the Council on Social Work Education (CSWE).

The Master of Social Work requires 60 semester hours: 25 earned in foundation-level courses and 35 in advanced-level courses. Students who hold an undergraduate degree from a CSWE program receive 12 semester hours of advanced standing and earn the master’s degree with 48 semester hours. All students must earn a minimum of 36 semester hours after admission to the M.S.W. program.

Up to 12 semester hours of partial advanced standing is possible for students who have completed courses in a CSWE-accredited program but who do not have the undergraduate degree. Students who have
completed equivalent foundation course work in departments or programs other than accredited social work programs must pass a qualifying exam for the particular foundation course(s) in order to receive partial advanced standing. Nine to 12 semester hours of graduate transfer credit may be allowed for previous graduate work.

The school operates a year-round, sequenced graduate program that begins in the fall semester for full-time students who need the full 60 semester hours. The program continues through the summer, which is a full semester. Full-time students generally earn the M.S.W. the spring semester of their second year. Those who require 48 semester hours have the option of enrolling full time or part time their first two semesters.

Part-time students go through the program at a slower pace, taking a minimum of two courses each semester. Part-time students who need the full 60 semester hours complete the program in three or four years. Students follow a structured sequence of courses. They must maintain a cumulative grade-point average of at least 3.00, must be promoted each semester in compliance with the Student Advancement Policy, and must successfully complete a master’s comprehensive examination. The exam requirement may be fulfilled with an integrative paper or the oral defense of a thesis.

Following is an outline of the full-time 60-semester-hour program.

FIRST-YEAR FOUNDATION

Fall Semester

042:140 Human Behavior in the Social Environment 3 s.h.
042:142 Interpersonal Skills Laboratory 2 s.h.
042:143 Social Welfare Policy and Practice 3 s.h.
042:146 Microcomputer Laboratory 1 s.h.
042:147 Racism and Discrimination 3 s.h.
042:148 Social Work Research Methods 3 s.h.

Spring Semester

042:150 Social Work Practice with Individuals, Families, and Groups 3 s.h.
042:151 Social Work Practice Skills Lab 1 s.h.
042:145 Organization and Community Practice 3 s.h.
042:270 Advanced Research 3 s.h.
042:290 Foundation Practicum in Social Work 3 s.h.
042:291 Foundation Practicum Seminar 1 s.h.

Summer Session

Electives (including preplacement field practice courses) 4-11 s.h.

SECOND-YEAR CONCENTRATION

Fall Semester

Elective 3 s.h.
042:250 Family-Centered Theory and Practice I 3 s.h.
or
042:260 Integrated Social Work Theory and Practice I 3 s.h.
042:292 Advanced Practicum in Family-Centered Practice I and II 5-6 s.h.
or
042:295 Advanced Practicum in Integrated Practice 5-6 s.h.
042:293 Advanced Practicum Seminar in Family-Centered Practice I 1 s.h.
or
042:297 Advanced Practicum Seminar in Integrated Practice I 1 s.h.

Spring Semester

042:251 Family-Centered Theory and Practice II 3 s.h.
or
042:261 Integrated Social Work Theory and Practice II 3 s.h.
042:252 Family Policy: Domestic and International 3 s.h.
or
042:262 Social Policy and Integrated Practice: Domestic and International 3 s.h.
042:292 Advanced Practicum in Family-Centered Practice I and II arr.
or
042:295 Advanced Practicum in Integrated Practice 5-6 s.h.
042:294 Advanced Practicum Seminar in Family-Centered Practice II 1 s.h.
or
042:298 Advanced Practicum Seminar in Integrated Practice II 1 s.h.

Thesis or elective 2-3 s.h.

Concentrations

After admission, students choose between two concentrations: family-centered practice or integrated practice.

FAMILY-CENTERED PRACTICE

This concentration prepares students to become clinical social work practitioners, working with individuals and families who experience problems that impair personal or family functioning, such as mental illness, family violence, abuse and neglect, juvenile offenses, substance abuse, relationship problems, or poor parenting skills. The goals of clinical social work are to increase the competence of these individuals and family members, to support family functioning, and to decrease the need for various types of institutionalization. This concentration is designed to enable students to work intensively with individuals and families directly, as well as to work with larger systems on their behalf. The term “family” is broadly defined to include step families, single-parent families, same-sex couples, adult child and parent(s), and traditional forms of families. Thus, sensitivity to a variety of family structures is emphasized.

Graduates of this concentration work with a variety of populations across the age span in mental health, in traditional family services as well as intensive family-based services, in child welfare agencies, and in a variety of other settings. The theoretical basis for this concentration is the family systems perspective, which emphasizes interpersonal and social forces over intrapsychic factors in explaining human behavior and change. This view emphasizes mobilizing strengths in the system, rather than diagnosing pathology, to create change.

INTEGRATED PRACTICE

The integrated practice concentration teaches a model of advanced practice that aims to meet the multiple needs of individuals and families through culturally sensitive assessment, planning, intervention, and evaluation in multiple systems. These skills are needed for a broad set of interventions (direct practice, planning and program development, team building, networking, and client information management) used by social workers who do family-centered case management and community practice.

This concentration is designed for students who plan to work in settings where advanced generalist interventions are necessary, such as community and family-based agencies, rural settings, and complex organizations (hospitals, schools, and correctional facilities). In these settings; social workers function as team members and leaders and often must coordinate activities across different departments and agencies.

The integrated practice concentration is based on the person-in-environment concept and is an extension of multisystemic practice. The theoretical foundations of the concentration are social network and social systems theory (family and organizational systems) and empowerment models, as well as mid-range theories of communication, power, conflict, political economy, and decision theory as they apply to changing the circumstances of oppressed/distressed individuals and families. The policy framework for the concentration includes both a comparative analysis of policy and program and an understanding of the reciprocal relationships between problems of individuals and families and those of the systems in which they are enmeshed.

Work at the School’s Off-Campus Centers

The full-time master’s degree program is available in Des Moines, Iowa, as well as in Iowa City. In addition, full-time students who have a practicum assignment in the Quad Cities usually commute to Iowa City for required courses during the second year of their program. Some elective courses are available in the Quad Cities (Bettendorf and Davenport, Iowa, and Rock Island and Moline, Illinois.)

The part-time master’s program is available in Des Moines, the Quad Cities, and in Sioux City, Iowa, as well as on the main campus in Iowa City. In Iowa City and Des Moines, students are admitted each fall semester. In ‘the Quad Cities, a group of part-time students is admitted every three years; contact the School of Social Work for information about the next admission.

In fall 1999 the School of Social Work and the Division of Continuing Education began a three-year part-time M.S.W. program through the Tri-State Graduate Center in Sioux City. In year two of the program, the need for an additional three-year program will be evaluated.
Social work faculty members teach required courses at each center and are available for student advising. The off-campus programs have been evaluated by CSWE and The University of Iowa Graduate Council as providing a program comparable to that available on the Iowa City campus.

Part-time students complete at least two courses each spring and fall semester for three or four years. Electives may be taken concurrently with fall and spring semester courses and during the summer. A full range of summer courses is available in Iowa City, and some courses are available in Des Moines. Some Iowa City summer courses are offered as intensive, short-term seminars rather than eight-week sessions, enabling students from other centers to take summer courses on campus.

Admission

A complete statement of graduate admission policies is available from the School of Social Work. Admission requires the following: a bachelor’s degree from an accredited college or university, with a reasonable distribution of courses in the liberal arts, including the humanities as well as the social, behavioral, and biological sciences; competence with word processing and spreadsheet application on personal computers; a grade-point average of 3.00 or higher (on a 4.00 scale) for the junior and senior years of undergraduate study, or for 12 semester hours of letter-graded graduate course work (exceptions may be granted; consult the School of Social Work); a Graduate Record Examination (GRE) General Test score at or near the 50th percentile for the applicant’s reference group; 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.

Foreign applicants must score at least 600 on the paper-based Test of English as a Foreign Language (TOEFL) or 250 on the computer-based test. Applications are accepted beginning September 1 and must be completed by February 1 to be considered for the next academic year.

The school seeks to maintain a heterogeneous student body by enrolling students who represent diverse backgrounds and cultural perspectives. Previous experience in the human services and cross-cultural experiences are desirable.

Financial Support

Financial aid for students varies from year to year. All 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.

Joint Master’s Degrees

The school has formal agreements for joint graduate degrees with the College of Law and the Program in Urban, Regional and Planning. To participate, students must apply and be admitted to each program. In each program, up to 12 semester hours earned in one of the disciplines can be applied to requirements of the other, reducing the time it normally would take to pursue the two degrees separately.

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 School of Religion, and the School of Journalism and Mass Communication. Students are encouraged to take courses in other departments whether or not they are pursuing joint degrees.

Cooperative Programs

Graduates of accredited M.S.W. programs may be eligible for associate membership in the American Association of Marriage and Family Therapists (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.

The School of Social Work participates in the Aging Studies Certificate Program through the College of Liberal Arts. Students can earn the certificate concurrently with the M.S.W. program; they must apply independently to the Aging Studies Program coordinator.

The school also participates with the College of Education to provide curricula that meet requirements for school social work certification in Iowa. Students can work toward certification concurrent with the M.S.W. program. Students apply for certification to the assistant to the dean in the College of Education.

Doctor of Philosophy

The Ph.D. program in social work has three major goals: to train students to conduct research that contributes to the knowledge base of social work; to prepare students as leaders in social work policy and practice with families, children, and the elderly; and to prepare students to teach social work in higher education institutions.

The program focuses on family and emphasizes the well-being of age groups at both ends of the family life-cycle: children and the elderly. In a series of required classes and interdisciplinary studies, students develop theoretical, policy, and research skills necessary to advance understanding of children and the elderly within the family context.

This focus is especially appropriate today, when the family as an institution is highlighted in national and state social policy debates. Further, families increasingly are required to care for society’s most vulnerable members, including the chronically ill, the mentally challenged, and the elderly. The program’s focus on children and the elderly within the context of family is unique among the region’s doctoral programs.

Requirements

The Ph.D. requires a total of 90 semester hours. Students who enter the program with an M.S.W. are granted credit for 30 semester hours and must complete an additional 60 semester hours for the degree. Students with master’s degrees in related fields are granted credit on a case-by-case basis.

The program’s semester-hour requirement is satisfied through course work, research practicums, and dissertation work. To become Ph.D. candidates, students must satisfy the program’s course work requirements, pass a comprehensive examination, and write a dissertation and defend it in an oral examination.

Each student’s program of study must be approved by the student’s doctoral committee.

CORE COURSES

All Ph.D. students must complete the following core courses.

042:300 Proseminar in Social Work: Social Welfare, Policy Programs 1 s.h.
042:301 Knowledge Building in Social Work Practice 3 s.h.
042:302 Knowledge Building in Social Work Policy - 3 s.h.
042:303 Research Practicum (taken twice) 6 s.h.
042:304 Advanced Research Seminar - 3 s.h.

COMPETENCY REQUIREMENTS

Students must demonstrate scholarly competence in four areas. Some may need to take additional course work in order to satisfy the competency requirements.

Social work core curriculum (see “Core Courses”) 16 s.h.
Social work focal area (children and families, or elderly and families) 11-12 s.h.
Minor in an outside discipline (psychology, sociology, or health management policy) 12 s.h.
Research methods, statistics, and data analysis 12 s.h.

Admission

Students are admitted only for full-time study. To qualify for admission, applicants ordinarily must have a master’s degree in social work from a program accredited by the Council on Social Work Education (CSWE). Students with master’s degrees in related fields also may be eligible for admission. The school and its special efforts to recruit students from underrepresented minorities, especially Iowa residents. The program accepts four to five students each year.
All applicants should have an undergraduate grade-point average of at least 3.00 and a composite Graduate Record Examination score of at least 1100 (verbal and quantitative) or an average of 550 on all three sections of the exam (verbal, quantitative, and analytical). All applicants must submit a completed Graduate College Application form, undergraduate and graduate transcripts, Graduate Record Examination scores, TOEFL scores (for international students), a personal statement of professional goals, including area of interest and reason for pursuing the Ph.D. (two to three pages), a resume, a sample of scholarly writing (scholarly publication or research or theoretical term paper), and four letters of recommendation (two must be academic references). Applicants must submit the application form, fee, and other materials to the Graduate Admissions Office. An application packet and list of guidelines are available from the office. Materials must be submitted no later than March 1 of the year for which admission is sought.

Financial Support

All doctoral students receive financial support during their first two years in the program. This support consists of research assistantships, teaching assistantships, or fellowships. Graduate assistantships also are eligible for tuition scholarships, and students who hold assistantships of one-quarter time or more pay resident tuition. Ph.D. students must fund their third and fourth years through jobs, grants, teaching, or other sources. Applications for research and teaching assistantships should be submitted to the School of Social Work by March 1. Application deadlines for the Graduate and other fellowships vary.

Special Projects and Travel/Study Seminars

Students may become involved in special projects such as the National Resource Center on Family-Centered Practice and the School of Social Work gerontology programs. 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 for selected courses and workshops throughout Saturday & Evening Classes in Iowa City and the School of Social Work centers in Des Moines and the Quad Cities. There are limits on the amount of graduate course work that may be applied to the master’s requirements for students who later enroll in the program.

Courses

Few courses are offered every semester; consult the current Schedule of Courses for availability of specific courses.

Primarily for Undergraduates

*Courses with numbers preceded by asterisks meet requirements of the M.S.W. program.

042:022 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 60 hours volunteer work. Sophomore standing or above or consent of instructor required. Same as 034:022.

042:029 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). Open only to first- and second-semester students.

042:093 Intercultural Communication 3 s.h.
Same as 36C:093.

042:141 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. Open only to social work students. Prerequisite: 042:022 or graduate standing. Corequisite: 042:140.

042:142 Interpersonal Skills Laboratory 2 s.h.
Practice of interpersonal skills required in the helping relationship. Open only to social work program students. Prerequisites: 042:022 and 042:140, or graduate standing, or consent of instructor. Corequisite: 047:141.

042:144 Introduction to Social Work Research 4 s.h.
Skills appropriate to evaluation of practice, participation in social work research; emphasis on formulating research questions; research design and methodology; sampling techniques; sanctions; data collection; coding and computerized statistical analyses; presentation of findings. Open only to undergraduate social work students. Prerequisite: 042:022 or consent of instructor.

042:171 Social Work Processes 3 s.h.
Practice strategies for working with communities, small groups, families, individuals in community, organizational contexts. Prerequisite: 042:141 or consent of instructor.

042:189 Field Experience Seminar 1 s.h.
Experiences from a variety of placements; link between previous courses and 042:193, which is corequisite.

042:191 Individual Study arr.
Project related to student interest carried out under direction of faculty member. May be repeated.

042:192 Honors in Social Work arr.
Supervised individual research. May be repeated. Open only to honors program students.

042:193 Field Experience arr.
Supervised experience in selected social welfare organizations; understanding and use of knowledge and skill common in generalist practice; evaluation of practice. Open only to social work or consent of instructor required. Prerequisites: 042:022, 042:140, 042:141, 042:142, and 042:171; or consent of instructor. Corequisite: 042:189.

For Undergraduate and Graduate Students

*Courses with numbers preceded by asterisks meet requirements of the M.S.W. program.

042:108 Basic Aspects of Aging 3 s.h.
Social, psychological, and biological aspects; demographics of aging, health, economic issues, primary relationships, social services. Prerequisites: 031:001 or 034:101, and sophomore standing or above. Same as 028:108, 096:108, 355:108.

042:112 Human Sexuality 1-3 s.h.
Physiological, psychological aspects; parameters defined by students, instructor. Same as 07C:112, 096:112.

042:117 Improving Outcomes for People with Disabilities 3 s.h.
Same as 07U:117, 096:117.

042:129 Substance Use and Abuse 3 s.h.
Chemical dependency for helping professions; etiological, physiological, psychological, legal, sociological aspects; treatment methods. Junior standing or above or consent of instructor required.

042:140 Human Behavior in the Social, Environment 3.4 s.h.
Behavior and development in context of social, ecological systems; social systemic theories, personality and life span development theories; theories of psychosocial dysfunction. Open only to social work students. Prerequisite: 042:022 or graduate standing or consent of instructor.

042:143 Social Welfare Policy and Practice 3 s.h.
Framework for analyzing specific social welfare programs; policies, alternative; special attention to impact of social welfare programs on women, minorities; international focus. Graduate standing in social work or consent of instructor required. Prerequisites: economics course, 042:022, and 042:140, or consent of instructor.

042:147 Racism and Discrimination 3 s.h.
Theoretical, historical perspectives on racism, sexism, other forms of discrimination; application to social work practice with antidiscrimination strategies. Admission to social work or consent of instructor required.

042:185 Social Policy and the Elderly 3 s.h.
Public social policies, their affect on well-being of elderly, including women and minorities; U.S. policies, those of other nations. Junior or higher standing required. Prerequisites: 042:143 and introductory course on aging, or consent of instructor. Same as 153:185.

042:190 Field Work in Gerontology arr.
Opportunities for students in various disciplines to relate their areas of study to elderly, aging; interdisciplinary relationships, approaches to meeting needs of elderly. Same as 153:190.

042:194 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. Prerequisite: 042:141 or consent of instructor.

042:196 Family Violence 2-3 s.h.
Child abuse and neglect, domestic violence, elder abuse; causes, policy aspects, identification, reporting, treatment, prevention.

042:198 Social Work Practice with Developmentally Disabled 2 s.h.
Problems, programming needs of disabled, their families; practice issues, including individual needs assessment and program planning, family dynamics, service needs.

042:199 Selected Aspects of Social Work and Social Welfare 2 s.h.
Human behavior, practice, social welfare policy. Consent of instructor required.

Primarily for Graduate Students

*042:145 Organization and Community Practice 3 s.h.
Models underlying 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. Admission to social work or consent of instructor required.

*042:146 Microcomputer Laboratory 1 s.h.
Microcomputers in social work practice; skill in use of hardware, software for a variety of applications in social service settings. Open only to social work students.

*042:148 Social Work Research Methods 3 s.h.
Skills appropriate to evaluation of practice and participation in social work research; formulating research questions; research design and methodology sampling techniques; protection of human subjects; descriptive statistics; computerized data analysis Admission to M.S.W. program or consent of instructor required.

042:150 Social Work Practice with Individuals, Families, and Groups 3 s.h.
Models and underlying theories of practice; phases of the helping relationship; process of change in interpersonal helping relationships, with emphasis on empirically based practice. Admission to M.S.W. program required. Prerequisite: 042:140. Corequisites for 60-hour students: 042:151, 042:290, and 042:291.
042:151 Social Work Practice Skills Laboratory 1 s.h.
Interpersonal skills practice in the helping relationship; small-group format. Admission to M.S.W. program or consent of instructor required. Corequisites: 042:150, 042:290, and 042:291.

042:204 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. Prerequisite: completion of foundation courses or consent of instructor.

042:211 Individual and Family Development: Life Span 3 s.h.
Infant through senescence; families from their beginnings through their later years; theoretical, methodological issues. Graduation standing required. Same as 153:211.

042:216 Group Leadership in Human Sexuality 0–3 s.h.
Principles of group dynamics, group process; leadership skills for small, semi-structured discussion groups on human sexuality. May be repeated. Prerequisite: 042:112 or consent of instructor. Same as 07C:216, 096:216.

042:219 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 153:219.

042:220 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. Prerequisite: 042:145 or consent of instructor.

042:222 Social Policy Issues in Health Care 3 s.h.
Policy model used to analyze major health policy issues in the United States; health care systems; socioeconomic-political contexts; tendencies, strategies for change; significance to social work profession. Prerequisite: 042:143 or consent of instructor. Same as 153:222.

042:223 Cross-Cultural Social Work 2–3 s.h.
Theories, issues in practice with culturally different populations, including US: ethnic groups, women, gays and lesbians, persons with disabilities, recent immigrants. Prerequisite: 042:147 or consent of instructor.

042:226 Social Policy and Integrated Practice: Domestic and International 3 s.h.
Systematic policy analysis framework applied to major health, education, employment policies and programs; impact of these programs on community welfare; impact of policies on women and minorities; international emphasis. Prerequisite: 042:260 or graduate standing or consent of instructor.

042:270 Advanced Research 2–5 s.h.
Skills applied to topics such as needs assessment, program evaluation, policy analysis, evaluation of social work practice open only to social work students. Prerequisite: 042:148 or equivalent.

042:271 Individual Study 1–3 s.h.
Project related to student interest, directed by faculty member. May be repeated.

042:272 Thesis 1–3 s.h.
042:274 Seminar: Social Change 3 s.h.
Social consequences of economic and political transformations; impacts of rural-urban migration; gender and ethnicity as products and consequences of systems transformation. Same as 07F:300, 034:274, 044:274.

042:275 Development Policy and Planning in the Third World 3 s.h.
Cross-cultural, interdisciplinary analysis of urbanization, development, and growth problems in developing nations. Same as 07F:275, 034:275, 044:275, 102:275, 113:275.

042:278 Personnel and Financial Management 2 s.h.
Human financial resources required by communities and organizations for delivery of social services; skill development in personnel and financial management, microcomputer applications, evaluation of management outcomes. Prerequisite: completion of foundation courses or consent of instructor.

042:280 Human Behavior: Selected Aspects 1–3 s.h.
042:281 Social Work Practice: Selected Aspects 1–3 s.h.
042:285 Travel/Study Seminar 1–3 s.h.
042:286 Treatment Approaches to Substance Abuse and Dependence 3 s.h.
Same as 07C:285.

042:288 Conference 1–3 s.h.
042:289 Seminar 1–3 s.h.
042:291 Foundation Practicum in Social Work 3 s.h.
Individuals, families, small groups, organizations, Communities; communication skills, problem-solving process, professional values and ethics applied at all system levels. Open only to M.S.W. students. Pre- or corequisites: 042:140, 042:142, 042:143, 042:144, 042:145, 042:146, 042:147, and 042:291.

042:292 Advanced Practicum in Family-Centered Practice I and II 1–3 s.h.
Two-semester field course; family-centered practice theory and skills implemented in interventions with individuals, families. Prerequisite: completion of foundation courses or consent of instructor.

042:293 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. Prerequisite: completion of foundation courses or consent of instructor. Corequisite: 042:292.

042:294 Advanced Practicum Seminar in Family-Centered Practice II 1 s.h.

042:295 Advanced Practicum in Integrated Practice 1 s.h.
Two-semester field course; integrated social work theories and interventions implemented in work with individuals, families, organizations, formal and informal networks. Prerequisite: completion of foundation courses or consent of instructor. Corequisite: 042:297 or 042:298.

042:296 Advanced Practicum in School Social Work 1 s.h.
Prerequisite: completion of foundation courses or consent of instructor.

042:297 Advanced Practicum Seminar in Integrated Practice I 1 s.h.
Prerequisite: 042:257 or 042:258. Same as 07C:285.

042:298 Advanced Practicum Seminar in Integrated Practice II 1 s.h.

042:300 Proseminar in Social Work Practice 3 s.h.
Faculty research related to families, children, and elderly theory, research designs, methodologies, findings, dissemination. Admission to doctoral program required.

042:301 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. Admission to doctoral program or consent of instructor required.

042:302 Knowledge Building in Social Work Policy 3 s.h.
Family, child, and elderly policy research viewed through philosophical, political science, economic, and social science theory; underlying assumptions in different views of social policy and theoretical analysis of formal argument. Admission to doctoral program or consent of instructor required.

042:303 Research Practicum 3 s.h.
Joint research with faculty; development of research design, choice or construction of measurement tools, selection of sample, collection and analysis of data, writing of a research report. Admission to doctoral program or Consent of instructor required.

042:304 Advanced Research Seminar 3 s.h.
Theory construction; methodological approaches useful in clinical, administrative, community practice; emphasis on ongoing projects in research practicum, dissertation proposal. Admission to doctoral program or consent of instructor required.

042:305 Social Work Pedagogy: Theory and Practice 3 s.h.
Teaching methods, theories, related research in social work education; issues of cultural competence in educational programs, course design, and delivery. Admission to Ph.D. program required.

042:310 Advanced Issues in Child, Youth, Family Practice 3 s.h.
Practice issues related to child welfare in vulnerable populations: abused, neglected children; foster care, delinquent, at-risk youth; adopted children; low-income and special needs children. Admission to doctoral program or consent of instructor required.

042:311 Child, Youth, and Family Policy 3 s.h.
Development of policies concerning children, especially those related to integration of social services at state and local levels. Admission to doctoral program or consent of instructor required.
042:312 Family Welfare Policy 3 s.h.
Public assistance for low-income families, social insurance provision, naturopathic for different approaches, focus on single-parent families: concepts of poverty, implications for private behavior, public policy. Admission to doctoral program or consent of instructor required.

042:320 Elderly Welfare Policy 2-3 s.h.
Development of policies concerning elderly, especially those related to integration of social services at state and local levels; emphasis on community-based social work for vulnerable populations; policies viewed in domestic, international contexts. Admission to doctoral program or consent of instructor required.


SOCILOGY
Chair: Jennifer Glass
Professors: Celesta Albottetti, Jennifer Glass, Jae-On Kim, Kevin Leicht, Barry Markovsky, Charles W. Mueller, James L. Price
Professors emeriti: David A. Parton, Lyle W. Lovaglia, Stephen G. Wieting
Associate professors emeriti Hollowell Pope, John R. Stratton
Assistant professors: Robert Baller, Rebecca Matthews, Rita Noonan, Dawn Robinson, Nader Sobhani, Lisa Troyer

Undergraduate degrees: B.A., B.S. in Sociology
Undergraduate nondegree program: minor in Sociology
Graduate degrees: M.A., Ph.D. in Sociology
Web site: http://www.uiowa.edu/-sac

Undergraduate Programs

The undergraduate major in sociology provides a liberal arts education. The program is not oriented to a specific career field, but completion of baccalaureate study in sociology provides background for employment in fields such as human services, criminal justice corrections, sales, public relations, advertising, personnel, applied social research, community organizations, and teaching social science in secondary schools. The program also provides a foundation for graduate or professional study in social work, urban planning, law, criminal justice, social policy, and similar areas. Finally, the degree prepares students to work toward advanced degrees in sociology, which qualify them for college or university teaching and academic, private, and governmental research positions.

Undergraduate students majoring in sociology may pursue either the Bachelor of Arts or the Bachelor of Science. Students interested in higher degrees and professional careers in the social sciences are advised to seek the Bachelor of Science.

In addition to the specific courses required for each bachelor’s degree, both B.A. and B.S. majors are advised to take 6 semester hours of course work in at least one of these departments: anthropology, economics, geography, political science, or psychology.

Departmental requirements are the same for transfer students as for others. The department requires that transfer students majoring in sociology take at least 12 semester hours in sociology at The University of Iowa. Students must have transferred courses approved by a sociology adviser for credit in the major.

Students who wish to obtain teacher licensure in the social sciences while majoring in sociology should contact the Division of Curriculum and Instruction in the College of Education.

Bachelor of Arts

The B.A. requires 30-31 semester hours of course work, including the following:

A college-level mathematics course numbered 22M:009 or above (except 22M:017) 3-4 s.h.
034:001 Introduction to Sociology: Principles 3 s.h.
034:009 Sociological Theory 3 s.h.
034:010-011 Theory, Research, and Statistics 6 s.h.
Electives (9 semester hours must be taken after 034:011) 15 s.h.

Students must take courses in the proper sequence. The college-level mathematics course is a prerequisite for 034:010. Students who take 22M:017 before declaring a major in sociology should consult the undergraduate director for help in choosing an appropriate course. The two-semester course 034:010-011 Theory, Research, and Statistics should be completed early, as preparation for upper-level sociology courses (students must earn a grade of C or higher in 034:009 and 034:010 before they can enroll in 034:011).

Students also must complete three 100-level sociology courses (excluding 034:197 Teaching Internship and 034:198 Directed Individual Study) after completing 034:009, 034:010, and 034:011.

Bachelor of Science

The B.S. program prepares students for graduate training in sociology. It requires 24 semester hours in sociology, including the following courses:

034:001 Introduction to Sociology: Principles 3 s.h.
034:009 Sociological Theory 3 s.h.
034:011 Theory, Research, and Statistics (preceded by 034:010 or an introductory course in statistics) 3 s.h.
Electives 15 s.h.

Students must take courses in the proper sequence. The statistics/methods courses (034:010 or other introductory statistics course, and 034:011) must be completed early, as preparation for other sociology courses (students must earn a grade of C or higher in 034:009 and 034:010 before they can take 034:011). Students also must complete three 100-level sociology courses (excluding 034:197 Teaching Internship and 034:198 Directed Individual Study) after completing 034:009, 034:010 or equivalent, and 034:011.

Four additional courses are required (14-15 semester hours):
22M:021-022 Calculus and Modeling 8 s.h.
or
22M:025-026 Calculus I-II 8 s.h.

22S:120 Probability and Statistics 4 s.h.
026:103 Introduction to Symbolic Logic 3 s.h.
or
026:104 Introduction to Philosophy of Science 3 s.h.

Four-Year Graduation Plan

The following checklists 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 upper-level course work is important to meeting the four-year plan.

Bachelor of Arts

Before the third semester begins: at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: 034:001 or equivalent, and at least half of the semester hours required for graduation
Before the seventh semester begins: a college-level math course numbered 22M:009 or above (except 22M:017), 034:009, 034:010, and at least three-quarters of the semester hours required for graduation
Before the eighth semester begins: 034:011 and two electives in the major

Bachelor of Science

Before the third semester begins: at least one-quarter of the semester hours required for graduation
Before the fifth semester begins: 034:001 or equivalent, 034:009, one sociology elective, and at least half of the semester hours required for graduation
Before the seventh semester begins: 034:010 or equivalent, 034:011, calculus I-II, one more sociology elective, and at least three-quarters of the semester hours required for graduation
Before the eighth semester begins: 22S:120 and two more courses in the major

Honors

The University Honors Program provides a stimulating and integrative educational experience for undergraduate majors who perform at a high level. To qualify for the honors program in sociology, students must...
have a grade-point average of at least 3.20 overall and in sociology courses.

The special requirements for an honors degree in sociology are completion of 034: 100 Honors Proseminar in the spring semester of the junior year, one advanced undergraduate course or graduate course approved by the honors director, and a senior honors project. The honors project gives students an opportunity to do sociological research in consultation with a faculty member of the student’s choice.

National Honor Society

The department sponsors a chapter of Alpha Kappa Delta International Sociological Honor Society. Students who have a grade-point average of 3.00 or higher in sociology course work and overall, with junior standing or higher, are considered for membership. Consult the departmental honors adviser for more information.

Minor

In addition to its programs for majors, the department provides supportive course work and several course clusters of value to undergraduate students who want to combine a minor in sociology with a major in another field, particularly other social sciences, business administration, elementary education, or nursing. Requirements for the minor include a minimum of 15 semester hours of credit in sociology courses with a grade-point average of 2.00 or higher; at least 12 of the 15 semester hours must be taken at The University of Iowa in advanced courses (courses numbered 034:100 and above plus 034:009). Students must take 034:009 before enrolling in at least two of the required 100-level courses. No course accepted toward the minor may be taken pass/nonpass.

Graduate Programs

The graduate programs in sociology prepare students for professional careers. Master’s degree students can choose between programs that prepare them for doctoral studies or for professional positions applying sociology. The doctoral program has a research emphasis and primarily prepares sociologists for positions in colleges and universities or 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 M.A. requires 30 semester hours with a thesis or research paper, or 38 semester hours 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 candidates for the M.A. must complete the following with grades of B or higher.
034:201 History of Sociological Theory 3 s.h.
034:202 Theory Construction, and Analysis 3 s.h.
034:214 Introduction to Sociological Data Analysis 3 s.h.
034:215 Sampling, Measurement, and Observation Techniques 3 s.h.
034:216 Linear Models in Sociological Research 3 s.h.

Joint Program in Sociology and Law

Students may obtain a Master of Arts in sociology and a Juris Doctor by fulfilling the basic requirements of both programs. They may apply up to 12 semester hours of graduate credit, earned to satisfy the requirements of either degree, toward both the M.A. in sociology and the 90 semester hours required for the J.D.

This cross crediting, approved at the discretion of the Department of Sociology and/or the College of Law, allows students to receive the J.D. and the M.A. by taking less course work than would be necessary if the two degrees were pursued independently. This program is highly individualized, allowing students to explore various aspects of the relationship between law and society.

Doctor of Philosophy

The Ph.D. degree in sociology requires a minimum of 72 semester hours of graduate-level course work, including the post-M.A. course 034:218 Categorical Data Analysis in Sociological Research and 3 elective semester hours in methods/statistics. Most of the course work for the Ph.D. is taken in the student’s two areas of interest. Candidates also must pass two comprehensive examinations and write a dissertation.

Doctoral students take two comprehensive exams—one from list A, the other from list A, B, or C (list A has six standing committees, list B has two as follows).

List A: social psychology; crime, law, and deviance; stratification; political sociology; organizations; and family

List B: theory, and methods

List C: an area not included in list A or B for which the student can identify an examining committee of three people, with both the area and the committee approved by the graduate committee

A detailed statement of regulations for graduate study is available upon request. Prospective doctoral candidates should examine this statement carefully.

Training for Teaching Assistants

All new students are expected to attend a three-day orientation for teaching assistants before the beginning of classes. In addition, a seminar on teaching pedagogy (034:382) is required for those who wish to teach their own courses.

Admission

Admission to graduate study in sociology usually requires an undergraduate grade-point average of at least 3.25 and a total score of 1100 from the quantitative plus verbal sections of the Graduate Record Examination (GRE) General Test. International students whose native language is not English should submit scores from the TOEFL exam. In addition to fulfilling the Graduate College requirements for admission (see the Graduate College section of the Catalog), applicants must complete a departmental application statement and use its personal reference forms in obtaining three letters of recommendation.

Applications should be submitted at least two months before the start of the academic session for which admission is requested. The deadline for applying for departmental financial support is January 1. Evaluation of applications begins in 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. 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 are no foreign language requirements for either the M.A. or Ph.D. in sociology. Inquiries concerning admission should be directed to the chair of the admissions committee, Department of Sociology.

Financial Support

The Department of Sociology offers four types of awards to graduate students: teaching assistantships, research assistantships, University of Iowa Fellowships, and graduate Opportunity at Iowa Fellowships. Resident tuition is charged to out-of-state students who receive awards. Students who receive one-half-time teaching or research assistantships work 20 hours each week for faculty members on either teaching or research assignments.

Research Centers and Facilities

Center for the Study of Group Processes

The department’s 18-room small-group laboratory includes eight computer-controlled subject rooms with audiovisual and psychophysiological recording capabilities, two large-group rooms with an adjoining observation room, an audiovisual control room, an instrument shop, and other flexible research office spaces.

The Center for Criminology and Sociolegal Studies

This new center is developing an interdisciplinary research and teaching program for the study of crime, law, deviance, social
control, and mental health. It sponsors a bimonthly 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. The course 034:148 Internship in Criminal Justice and Corrections is administered through the center.

Center for Asian and Pacific Studies
This center 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. Several sociology faculty members are affiliated with the center.

Iowa Social Science Institute
This center offers facilities, staff, and data archives for conducting surveys and secondary data analysis. Computer-aided telephone surveys can be conducted, and a bimannual Midwest opinion survey is ongoing.

Computer Facilities
The department operates a remote computer terminal and a personal computer cluster for graduate students. Both terminals and personal computers can access mainframe computers that provide all of the popular statistical and mathematical computing programs.

Courses
For Undergraduates Only
Courses open to first-year students without prerequisites are 034:001, 034:002, 034:029, and 034:120. All other undergraduate courses are open to first-year students with stated prerequisites.

034:000 Cooperative Education Internship 0 s.h.
Registration during work assignment periods, permanent record of internships. Open only to sociology majors. May be repeated. Consent of adviser and admission to Cooperative Education Program required.

034:001 Introduction to Sociology: Principles 3 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, such as family, education, religion, economy. GE: social sciences.

034:002 Social Problems 3 s.h.
Emergence and distribution of selected social problems; alternative solutions; may include population, inequality, female male relationships, racism, crime. GE: social sciences.

034:009 Sociological Theory 3 s.h.
Theoretical perspectives in sociology; construction, evaluation of sociological explanations. Prerequisite: 034:001 or consent of instructor.

034:010 Theory, Research, and Statistics 3 s.h.
Basic scientific concepts: emphasis on theoretical thinking, statement of testable 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. Major in sociology or consent of instructor required. Prerequisite: 034:001; and 226:011 or 226:011 or 226:021 or a higher-level calculus course; and a grade of C or higher in 034:009.

034:011 Theory, Research, and Statistics 3 s.h.
Continuation of 034:010. Major in sociology or consent of instructor required. Prerequisite: 034:009 and 034:010 with a grade of C or higher.

034:029 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). Open only to first- and second-semester students.

034:090 Selected Topics In Sociology 3 s.h.
Topics vary. May be repeated.

034:100 Honors Proseminar 2 s.h.
Topic development for senior honors projects. Open only to sociology honors students. Offered spring semesters.

034:100 Selected Topics in Sociology 3 s.h.
Topics vary. May be repeated.

034:196 Field Experience 3 s.h.
Supervised field experience in sociology; primarily for students participating in Washington Center internship. Consent of adviser required. Sociology major and junior standing required.

034:197 Teaching Internship 3 s.h.
Experience teaching, provides support for instructors teaching basic courses in sociology. Open only to undergraduate teaching aides in sociology. Consent of instructor required.

034:198 Directed Individual Study 3 s.h.
May be repeated. Consent of instructor required.

034:199 Honors Research 3 s.h.
Research project under faculty supervision. Consent of instructor required.

034:201 History of Sociological Theory 3 s.h.
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. The course 034:148 Internship in Criminal Justice and Corrections is administered through the center.

034:202 Theory Construction and Analysis 3 s.h.
Introduction to theory, research, role of social factors in the mentally ill, institutionalization. Prerequisite: 034:001 or consent of instructor.

034:203 Seminar: Selected Topics in Sociological Theory 3 s.h.
May be repeated. Graduate standing or consent of instructor required.

034:214 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. Prerequisite: introductory statistics or consent of Instructor.

034:215 Sampling, Measurement, and Observation Techniques 3 s.h.
Research designs: sampling designs and technique; general issues in designing social research, including problems of sampling and measurement, analysis, presenting research data, interpreting research findings. Major in sociology or consent of instructor required. Prerequisite: 034:001; and 226:011 or 226:011 or 226:021 or a higher-level calculus course; and a grade of C or higher in 034:009.

034:216 Linear Models in Sociological Research 3 s.h.
Statistical techniques associated with general linear model; emphasis on multiple regression, its generalizations, corresponding computer programs. Prerequisite: 034:214 or consent of Instructor.

034:218 Categorical Data Analysis in Sociological Research 3 s.h.
Models for analysis of categotical data, including loglinear, logit, related discrete data models. Advanced graduate standing and consent of instructor required.

034:219 Seminar: Selected Topics in Research Methods and Data Analysis 3 s.h.
May be repeated.

Social Psychology
034:120 Principles of Social Psychology 3 s.h.
Introduction to theory and research in small groups; interpersonal and intergroup processes.

034:122 The Paranormal Society 3 s.h.
Skeptical perspective in analyses of paranormal phenomena and pseudosciences; the need for explicit theories, extraordinary evidence, and elimination of “normal” explanations before extraordinary phenomena are accepted as legitimate.

034:124 Social Processes: Interpersonal Relations 3 s.h.
Processes of status, friendship, love, justice, and deviance examined by comparing and contrasting role-playing, commonsense explanations, abstract theory; how processes of support and interfere with one another. Undergraduate standing or consent of instructor required. Prerequisite: 034:001 or 031:015 or consent of instructor.

034:125 Small-Group Analysis 3 s.h.
Analysis of social interaction in groups; group problem solving; group decision making; leader-subordinate relations and phases of small groups in large organizations. Prerequisite: 034:001 or consent of instructor.

034:126 Collective Behavior and Social Movements 3 s.h.
Social unrest; crowd behavior; social movements treated as a form of social change. Prerequisite: 034:001 or consent of instructor.

034:128 Sociology of Mental Illness 3 s.h.
Introduction to theory, research; role of social factors in definition, distribution, cause, consequence, treatment, and experience of psychological disorder; labeling, societal reactions to the mentally ill, institutionalization. Prerequisite: 034:001 or 034:002 or consent of instructor.

034:220 Contemporary Approaches to Social Psychology 3 s.h.
Review and critical analysis of current theoretical approaches to and systems of social psychological analysis. Graduate standing or consent of instructor required.

034:221 Seminar: Selected Topics in Social Psychology 3 s.h.
Selected theoretical and methodological issues. May be repeated. Graduate standing or consent of instructor required.

034:291 Seminar: Collective Action and Social Movements 3 s.h.
Comparative, historical analysis of variations in social movements, their impact on social change.

Deviance, Delinquency, Crime, and Law
034:140 Criminology 3 s.h.
Nature and causes of crime; the criminal justice process, correctional treatment, crime prevention. Prerequisite: 034:001 or consent of instructor.

034:141 Juvenile Delinquency 3 s.h.
Delinquency as an individual and social problem, theories of the causes of juvenile delinquency; law enforcement and the juvenile court; methods of correction and prevention. Prerequisite: 034:001 or consent of instructor.

034:145 Sociology of Corrections 3 s.h.
Analytical survey of the criminal justice system, and the role of the American correctional process. Prerequisite: 034:140 or 034:141 or consent of instructor.

034:146 Deviance and Control 3 s.h.
Basic theories of deviance and analysis of social control settings and mechanisms with emphasis on the relationship between social control efforts and social deviance. Prerequisite: 034:140 or 034:141 or consent of instructor.
Sociology

**034:148 Internship in Criminal Justice and Corrections** 1-4 s.h.
Supervised field work in a criminal justice or correctional agency. May be repeated to total of 6 s.h. Sociology major, junior standing, and consent of director of the Center for Criminology and Social-Legal Studies required. Prerequisite: 034:140 or 034:141.

**034:149 Sociology of Criminal Law and Punishment** 3 s.h.
Theories of criminal law, criminal sanctions; philosophy of criminal law, social control and sociological theories of criminal law, classical sociological theories of criminal sanctions and punishment, contemporary theories of the development of imprisonment in industrialized countries, research on 20th-Century criminal punishment; focus on the relationship between criminal punishment and other major social institutions (e.g., economic, religious, political), criminal punishment in historical perspective. Prerequisite: 034:009.

**034:240 Seminar: Criminological Theories** 3 s.h.
Theories of crime causation and their relationships to the cultures in which they have functioned. Graduate standing or consent of instructor required.

**034:244 Seminar: Selected Topics in Deviance and Control** 3 s.h.
Critical analysis of current research; emphasis on theoretical contributions and methodological foundations. May be repeated.

**Family, Life-Style, Children, Aging**

**034:108 Women and Society** 3 s.h.
Role and status of women in society; sex differences, sex role socialization, theories about origin and maintenance of sexual inequalities; applications to social institutions. Prerequisite: 034:001 or consent of instructor. Same as 113:108.

**034:134 Aging in Comparative Perspective** 3 s.h.
Sociological foundations of world variation in aging; relationships between political and economic institutions of various societies, their treatment of the aging process. Prerequisite: 034:001 or 034:120 or consent of instructor. Same as 153:134.

**034:159 Families in Comparative Perspective** 3 s.h.
Family systems in comparative and historical perspective; comparison of the American family with families in both modern and premodern societies. Prerequisite: 034:001 or 034:120.

**034:161 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. Prerequisite: 034:001 or 034:120.

**034:162 Work and Family Institutions** 3 s.h.
Contemporary problems in the integration of work and family life; origins of post-family conflict in process of industrialization; effects of job-family conflicts on mothers, fathers, children; cross-cultural differences in dealing with work-family conflict. Prerequisite: 034:001 or 034:002 or consent of instructor. Same as 131:160.

**034:266 Changing Families and Public Policy** 3 s.h.
Current sociological research on public policies that affect family life and well-being; divorce and child custody policies, teen pregnancy and abortion, family poverty, child care and work/family policies. Same as 131:266.

**034:269 Seminar: Selected Topics in Family Sociology** 3 s.h.
Selected theoretical and methodological issues. May be repeated. Graduate standing in a social science or consent of instructor required.

**Social Institutions, Social Change**

**034:022 Introduction to Social Work** 4 s.h.
Social welfare as a social institution; settings and methodologies of social work practice; profession of social work; historical development of American social welfare and social work; minimum of 60 hours volunteer work. Sophomore standing or consent of instructor required. Same as 042:022.

**034:151 Sociology of the Third World** 3 s.h.
Analysis and measurement of development/underdevelopment; ideological perspectives on the Third World; the modern world system; selected issues in the study of social change in Asia, the Middle East, Latin America. Prerequisite: 034:001 or consent of instructor. Same as 113:151.

**034:153 Public Opinion** 3 s.h.
Role of public opinion in making public policy; formation and change of political ideology; measurement of public opinion; understanding opinion polls. Prerequisite: 034:001 or consent of instructor. Same as 030:171.

**034:154 Society and Politics in East Asia** 3 s.h.
Japan, China, South and North Korea, Taiwan; major theoretical issues in social change and development through East Asian experiences in the modern world. Prerequisite: 034:001 or consent of instructor.

**034:160 American Society** 3 s.h.
American society in comparative perspective; its structure and integration; approaches to study of large, complex modern societies; institutional interrelationships, institutions as agencies of social control, institutional disorganization as an effect of social change. Prerequisite: 034:001 or consent of instructor.

**034:163 Comparative Sociology** 3 s.h.
Comparison of different societies or nations; focus on competing analyses of a selected topic (e.g., the rise of capitalism). Prerequisite: 034:001 or consent of instructor.

**034:167 Sociology of Science** 3 s.h.
The diverse ways in which science is practiced and studied; how scientists construct scientific knowledge and what constitutes bad science.

**034:181 Sociology of Popular Culture** 3 s.h.
Analysis of the sociological bases, impact, and implications of popular culture; interrelationships of popular culture and major social institutions; popular culture and social change; social bases of taste; cultures and publics. Prerequisite: 034:001 or consent of instructor.

**034:211 Comparative and Historical Methods in Sociology** 3 s.h.
Comparative strategies and historical methods examined through methodological readings, and evaluations of analyses; how theoretical concerns and historical-comparative evidence are brought to bear on issues of organizational structures, institutional relationships, political conflicts, cultural patterns, social change.

**034:275 Development Policy and Planning in the Third World** 3 s.h.
Cross-cultural and interdisciplinary analysis of problems associated with urbanization and development in the developing nations. Graduate standing in a social science required. Same as 079:275, 042:275, 044:275, 102:275, 113:275.

**034:310 Education and Social Change** 2-3 s.h.
Role of educational institutions, in connection with political and economic structures, in social change; utilization of theories of social change through case studies of educational systems in less developed nations. Same as 079:210.

**Social Class, Inequality, Race, Organizations, Politics**

**034:150 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. Prerequisite: 034:001 or consent of instructor.

**034:155 Sociology of 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. Prerequisite: 034:001 or 115:003 or consent of instructor.

**034:156 Gender Inequality** 3 s.h.
Gender relations in contemporary perspective; emphasis on social origins of gender categories, implications of gender status for collective and individual behavior; inequalities in interpersonal behavior, the family and work organizations, family violence, sexual harassment, rape. Prerequisite: 034:001 or 034:120.

**034:158 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.

**034:164 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. Prerequisite: 034:001 or 034:120 or consent of instructor.

**034:165 Sociology of Work and Occupations** 3 s.h.
Work commitment; prestige of occupations; occupational and professional careers; occupational groups and organizations; alienation; women, minorities, and occupational structures; conflict and occupations. Prerequisite: 034:001 or 034:120 or consent of instructor.

**034:166 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: cultural diversity.

**034:246 Law, Politics, and Social Inequality** 3 s.h.
Theoretical and empirical exploration of the relationship between law and society, law and social change; emphasis on conditions under which law reflects and promotes social inequalities or greater social equality. Same as 091:301.

**034:250 Seminar: Selected Topics in Political Sociology** 3 s.h.
May be repeated. Graduate standing or consent of instructor required.

**034:251 Seminar: The Welfare State** 3 s.h.
Development and operation of western welfare states; parameters of and theoretical and methodological debates in the field-development of capitalist democracy, nature of the welfare state, variations in welfare states, theoretical and methodological approaches for researching the welfare state; class, gender, age, race.

**034:252 Political Sociology** 3 s.h.
Survey, with focus on individual political behavior, development and operations of the state (state policies and state institutions), collective political behavior and social movements.

**034:253 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.

**034:255 Seminar: Selected Topics in Social Stratification** 3 s.h.
May be repeated.

**034:256 Gender Stratification Seminar** 3 s.h.
Occupational gender segregation; gender gap in pay; role of family caregiving in women's lower pay; devaluation of caregiving work; comparable worth. Same as 131:256.

**034:257 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.

**034:258 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.

**034:268 Seminar: Occupational Structure and Social Mobility** 3 s.h.
Conceptualization and measurement of social mobility; cross-cultural comparisons and trends in mobility; current research on mobility in the United States, with emphasis on race and sex differences. Graduate standing or consent of instructor required.

**034:274 Seminar: Social Change** 1-arr.
Social consequences of economic and political transformations; impacts of rural-urban migration; gender and ethnicity as the products and consequences of systems transformation. Same as 079:300, 042:274, 044:274.

**034:285 Complex Organizations** 3 s.h.
Productivity, effectiveness, innovation, coordination, conformity, and satisfaction.

**Teaching**

**034:382 Seminar: Practicum in Teaching Sociology** 3 s.h.
Supervised preparation for teaching sociology courses; literature on teaching; course objectives, alternative teaching techniques; preparation of course syllabuses, lectures, discussions, exams. Advanced graduate standing and consent of instructor required.
In the Department of Spanish and Portuguese, the undergraduate major in Spanish is built on course work in Spanish peninsular and Spanish American literature and culture and in Hispanic linguistics, while also providing continuing courses in language skills. The goal of the major program is twofold: to study content areas related to the Spanish language, such as literature, culture, and linguistics; and to continue developing proficiency in the Spanish language in all four skills: speaking, listening, reading, 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, or communications, where knowledge of a foreign language and of foreign cultures is essential.

The undergraduate major in Spanish requires 36 semester hours (12 courses) beyond the level of the General Education Program. The core requirements are one course each from the principal academic areas of the department (see “Required Courses”). The remaining eight courses may focus on one or more of these areas or may include a broad range of courses within the department. These eight elective courses may include course work in Spanish language skills as well as more advanced language courses that focus on specialized language functions and purposes. They also may include courses in Portuguese or in related areas from other departments, such as history, anthropology, or linguistics, subject to the restrictions (see “Restrictions”).

Required Courses
- One course in Hispanic linguistics
- One course in Spanish peninsular literature
- One course in Spanish American literature
- One course in culture (peninsular or Spanish American)

Lists of courses in each of these four areas are available from the Department of Spanish and Portuguese.

Elective courses
- Total: 24 s.h.
- Total: 36 s.h.

Restrictions
- All course work taken for the major must be at the 100-level. Second Language Acquisition Program credit may not be applied toward a major in Spanish.
- No more than five of the following courses or equivalent advanced study abroad courses (as determined by the departmental study abroad adviser) may be applied toward the major.
  - 035:103 Writing in Spanish
  - 035:106 Spanish for Native Speakers
  - 035:107 Advanced Spanish Language
  - 035:108 Problems in Spanish Grammar
  - 035:116 Advanced Composition and Conversation
  - 035:118 Business Spanish
  - 035:120 Techniques of Spanish-English Translation
  - 035:192 Topics in Film Studies
  - 038:103 Composition and Conversation (Portuguese)
  - 038:122 Topics in Portuguese Language

No credit from 038:100 Accelerated Elementary Portuguese may be applied toward the Spanish major. Of the 5 semester hours earned in 038:101 Accelerated Intermediate Portuguese, 3 may be applied toward the Spanish major. No more than 6 semester hours of related course work in Portuguese may be applied toward the Spanish major.

No more than 6 semester hours of related course work from outside the department may be applied toward the Spanish major. Related courses must be approved by the director of advising or the undergraduate program director and must be 100-level courses. A list of approved related courses is available from the Department of Spanish and Portuguese.

No more than 6 semester hours in courses taught in English, either in the Department of Spanish and Portuguese or in other departments, may be applied toward the Spanish major. A maximum of 15 semester hours of credit in approved courses may be transferred from other institutions toward the requirements for the major in Spanish.

Elementary and Secondary Teaching Licensure in Spanish

Spanish majors interested in teaching Spanish at the elementary and/or secondary level must successfully complete the requirements for the Spanish major and may be admitted to the College of Education’s Teacher Education Program in foreign language. For more information, contact the College of Education, Division of Curriculum and Instruction.

Four-Year Graduation Plan in Spanish

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:
- second-year, first-semester competence in Spanish and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins:
- two courses beyond second-year, second-semester competence in Spanish and at least one-half of the semester hours required for graduation

Before the seventh semester begins:
- four more courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins:
- a total of 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 Spanish

Admission to the honors program in Spanish requires a grade-point average of at least 3.20 overall and in Spanish. Graduation with honors in Spanish requires 3 semester hours in 035:198 Honors: Research and Thesis, plus another 3-semester-hour course chosen in consultation with the department honors adviser. These 6 semester hours count toward the 36 total semester hours required for the Spanish major. Students also must present an honors report in Spanish and participate in a meeting with a faculty committee, conducted in Spanish.

Minor in Spanish

A minor in Spanish requires 15 semester hours of course work in Spanish with a grade-point average of 2.00 or higher. At least 12 of the 15 must be earned at The University of Iowa or in a University of Iowa foreign study program in courses numbered 100 and above. Students may not elect 035:101 or 035:102 to fulfill requirements for the minor.

All courses to be applied toward the minor must be taught in Spanish. Courses elected for the minor may not be taken pass/fail.

International Study Programs in Spanish

The department participates in several study-abroad programs. Its summer programs include the State Board of Regents Hispanic Institute (Valladolid, Spain), the CIC Summer Program in Mexico, and the University Studies Abroad Consortium in San Sebastian, Spain. Included in the department’s semester or year-long programs are the CIEE Language and Area Studies Program (Alicante, Spain), the CIEE Language and Society Program (Seville, Snaini, the CIEE Liberal Arts Program (Seville, Spain); the CIEE Business and Society Program (Seville, Spain), and the University Studies Abroad Consortium (San Sebastian and Bilbao, Spain; Santiago, Chile; and San Jose, Costa Rica). The department also participates in a spring semester program at the Universidad de los Andes in Merida, Venezuela. For information about other foreign study programs in Spanish, contact the Office for 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 adviser. Credit earned in study abroad programs other than those listed above counts as transfer credit and is subject to the 15 semester hour maximum allowed for the major and the 3-semester-hour maximum allowed for the minor.

Bachelor of Arts in Portuguese

Portuguese has the sixth or seventh highest number of speakers of all the languages in the world; it is spoken in Portugal, Brazil, Angola, and Mozambique. There are more speakers of Portuguese in South America than there are of Spanish; therefore knowledge of Portuguese and of Luso-Brazilian culture is extremely helpful for students interested in career opportunities in international business, government, or related fields. There are study abroad opportunities in Portugal. For information contact the Office for Study Abroad.

The B.A. in Portuguese requires the following courses or their equivalents, for a total of 27 semester hours of course work beyond the second-year level. Courses listed under “Prerequisite” may not be counted toward the 27 semester hours.

**PREREQUISITE**

038:100 Accelerated Elementary Portuguese 5 s.h.
038:101 Accelerated Intermediate Portuguese 5 s.h.
or 038:102 Portuguese for Spanish Speakers 3 s.h.

**REQUIRED COURSES**

038:103 Composition and Conversation 3 s.h.
or 038:122 Topics in Portuguese Language 3 s.h.
038:105-106 Brazilian Literature I-II 6 s.h.
038:107 Introduction to Portuguese Literature 3 s.h.
038:112 Topics in Luso-Brazilian Literature 3 s.h.
038:114 Culture and Civilization of the Portuguese-Speaking World 3 s.h.
038:119 Topics in Portuguese Linguistics 3 s.h.

**ELECTIVES**

Total of 6 semester hours

Courses from the “Required Courses” list that may be repeated, or nonregular offerings in Portuguese (seminars, conversation)

Approved courses in related areas (e.g., art, anthropology, comparative literature, geography, history, Latin American studies, linguistics, sociology)

Four-Year Graduation Plan in Portuguese

The following checkpoints list the minimum requirements students must complete in order to stay on the University’s four-year graduation plan.

Before the third semester begins: competence in first-year Portuguese and at least one-quarter of the semester hours needed for graduation

Before the fifth semester begins: competence in Intermediate Portuguese and at least one-half of the semester hours needed for graduation

Before the seventh semester begins: two to three additional courses for the major and at least three-quarters of the semester hours needed for graduation

Before the eighth semester begins: a total of seven courses in the major

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

Minor in Portuguese

A minor in Portuguese requires 15 semester hours of course work in Portuguese with a grade-point average of 2.00 or higher. At least 12 of the 15 must be taken at The University of Iowa or in a University of Iowa foreign study program in courses numbered 038: 103 or above. Courses elected for the minor may not be taken pass/fail.

International Study Programs in Portuguese

Students interested in studying in Brazil or Portugal should contact the Office for Study Abroad.

Language for Nonmajors

The department offers several opportunities for students who wish to study Spanish and Portuguese-languages spoken in many cultures around the world, and important in the study of literature, art, film, and many other disciplines.

Students who have had experience with Spanish should take the Spanish Foreign Language Placement Test, offered during summer orientation programs and monthly by Evaluation and Examination Service. Transfer students are encouraged to take the test before they register. The test helps determine the level at which a student should begin Spanish language study at The University of Iowa. Students with experience in Portuguese may receive individual evaluations from the department.

Other language courses are open to any student who has satisfied the specified prerequisites.

Foreign Language Requirement

The department offers courses to satisfy the General Education Program’s foreign language requirement in both Spanish and Portuguese, as follows.

The Spanish sequence 035:001-002, 035:011-12 is most appropriate for students who have had no previous experience in Spanish. The Spanish Foreign Language Placement Test can help determine where other students should begin study. Those with an interest in health-related occupations can begin with 035:008 Spanish for Health Professionals I. The accelerated course 035:013 combines 035:011-012 into one semester and may be appropriate for some students.
To receive the certificate, students must have completed portions of the College of Liberal Arts General Education Program with 035:020 Contemporary Spanish American Narrative and 038:020 Contemporary Brazilian Narrative, which are taught in English. Culture and Civilization of the Portuguese-Speaking World (038:114) also is approved for General Education and is taught in English. The department offers several other literature, film, and cultural survey courses of general interest that are taught in English.

International Business Certificate
The College of Liberal Arts and the Henry B. Tippie College of Business offer a joint program leading to a Certificate in International Business. The program entails study of international business and economics; international relations and institutions; a foreign language, such as Spanish or Portuguese; and related area studies. It is designed not only for students who intend to pursue careers in international business but also for 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.

The wide range of electives in the program permits students to tailor areas of specialization to their interests and to complement majors in both liberal arts and business administration. For more information, contact the Office of Academic Programs in the College of Liberal Arts or the Undergraduate Program Office in the Tippie College of Business.

Latin American Studies Certificate
The department plays an important and active role in the Latin American Studies Program, an interdisciplinary undergraduate program focusing on the history, politics, social organization, economy, art, and literature of Latin America. Work in the program may lead to a certificate or a minor in Latin American studies.

To receive the certificate, students must have sufficient competence in Spanish or Portuguese to do background readings in the language before enrolling in the required senior seminar. For information about the Latin American Studies Program, see “Latin American Studies” in the Catalog.

Graduate Programs

Master of Arts in Spanish
The Master of Arts program in Spanish has two emphases: literature, which provides training in literary analysis and broad knowledge of representative works in principle areas of Hispanic literature; and linguistics, which provides training in linguistic analysis and argumentation and broad knowledge of the principal subfields of Hispanic linguistics. Candidates for admission to the M.A. program must have completed the equivalent of the undergraduate Spanish major with a grade-point average of at least 3.00 in course work for the major. The M.A. requires a total of 30 semester hours (10 courses), as follows:

literature Emphasis
035:200 Foreign Language Teaching Methods 3 s.h.
Two courses in Spanish linguistics (numbered 035:170 and above) 6 s.h.
Two courses in Spanish American literature (numbered 035:170 and above) 6 s.h.
Two courses in Spanish American literature (numbered 035:170 and above) 6 s.h.
One course in literary theory 3 s.h.
Two electives 6 s.h.

Of these 10 courses, at least eight must be taken in courses numbered above 035:170 offered by the Department of Spanish and Portuguese. The remaining two may be taken either in the Department of Spanish and Portuguese or in related departments, subject to approval by the director of graduate studies.

linguistics Emphasis
035:200 Foreign Language Teaching Methods 3 s.h.
Two courses in Spanish or Spanish American literature (numbered 035:170 and above) 6 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, language variation, or applied linguistics/language acquisition 3 s.h.
One elective 3 s.h.

Of these 10 courses, at least six must be taken in courses offered by the Department of Spanish and Portuguese. The remaining four may be taken either in the Department of Spanish and Portuguese or the Department of Linguistics.

language Tool Requirement
M.A. candidates must complete the equivalent of one year of college-level study of any approved second foreign language; Portuguese is highly recommended. This requirement may be satisfied either by examination or through courses taken at The University of Iowa or another accredited university, such course work does not count toward the 36 semester hours required for the M.A.

Maximum Study Loads
Maximum course registration is 15 semester hours of graduate-level course work during fall or spring semesters and 8 semester hours at the graduate level during summer sessions. One-quarter-time and one-third-time teaching assistants are permitted to register for the maximum study loads. One-half-time teaching assistants may not register for more than 12 semester hours in fall or spring semesters or for more than 6 semester hours during summer sessions. Additional semester hours may be taken only with Graduate College approval.

Transfer Credit
A maximum of 9 semester hours of graduate credit in approved courses may be transferred from other institutions toward the 36-semester-hour requirement for the Master of Arts.

Examinations
The M.A. comprehensive examination is administered in both written and oral parts. The written portion consists of a two-hour examination in each of three areas; an oral examination follows, usually lasting one and one-half hours. The examining committee is composed of four departmental faculty members.

Candidates following 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 and/or Spanish American). Candidates following 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 candidates in both emphases, the third examination area may be a film area.

Doctor of Philosophy in Spanish
Two doctoral programs are available. One is dedicated to Hispanic literatures and one to Hispanic linguistics. In literary studies, students are trained in textual analysis and literary history, criticism, and theory. In linguistic studies, students are trained in linguistic analysis and theory. Both the literature and linguistics tracks require a minimum of 57 semester hours of course work (19 courses), of which 30 semester hours may be counted from an M.A. degree in Spanish earned at The University of Iowa or at another institution, as approved by the director of graduate studies. The Ph.D. also requires 3-15 semester hours of thesis credit (035:299), for a total of 72 semester hours. Course requirements for each track are as follows.
Program I: Literature Track

Students must earn at least 27 semester hours (9 courses) beyond the M.A. (or 19 courses beyond the bachelor's degree). The following course work is required, some of which can be met by courses taken for the M.A., as indicated.

Two courses in literary theory (one course may have been taken for the M.A.)

Three courses in Spanish literature, at least one of which must be pre-1700 literature (one course may have been taken for the M.A.)

Three courses in Spanish American literature (one course may have been taken for the M.A.)

One course in cinema

Two 300-level seminars in literary studies

One literature course in another Romance language (see “Language and Literature Tool Requirements”)

035:299 Thesis 3-15 s.h.

The specific plan of study for each student, tailored to his or her area of emphasis, must be approved by the student's advisory committee. Ph.D. course work in Spanish (taken after the M.A.) must be at the 260. and 300-level, except the Romance literature course taken for the language tool requirement.

LANGUAGE AND LITERATURE TOOL REQUIREMENTS

Before the comprehensive examination, candidates 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 can be satisfied only through course work at The University of Iowa or another accredited university.

The equivalent of one year of college-level study of another approved foreign language also is required. If Portuguese is not the language chosen to fulfill the Romance literature requirement, it must be used for this requirement. Students who choose to write dissertations on topics in Spanish or Portuguese literature before 1700 must have the equivalent of one year of college-level Latin.

The language tool requirement may be satisfied either by examination or by course work at The University of Iowa or another accredited university; language tool course work does not count toward the 72 semester hours required for the degree.

Program II: Linguistics Track

Students must earn at least 27 semester hours (9 courses) beyond the M.A. (or 19 courses beyond the bachelor's degree). The following course work is required; courses taken for the M.A. may be used to meet some of it.

035:207 Topics in Comparative Romance Linguistics 3 s.h.
035:209 Spanish Phonology 3 s.h.
035:210 Advanced Spanish Syntax 3 s.h.
103:110 Articulatory and Acoustic Phonetics 3 s.h.
103:201 Introduction to Syntax 3 s.h.
103:202 Syntactic Theory 3 s.h.
103:203 Introduction to Phonology 3 s.h.

103:204 Phonological Theory 3 s.h.
103:212 Advanced Syntactic Theory 3 s.h.

Two courses from one or more of these: historical linguistics, language variation, language acquisition/psycholinguistics

Two 300-level seminars in Hispanic linguistics

035:299 Thesis 3-15 s.h.

The specific plan of study for each student, tailored to his or her area of emphasis, must be approved by the student's advisory committee.

Ph.D. course work in Spanish (taken after the M.A.) must be at the 200. and 300-level, except some courses offered by the Department of Linguistics and the required third-year-level course in Portuguese (see “Language Tool Requirements”).

LANGUAGE TOOL REQUIREMENTS

Candidates 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 whose two languages must be Latin. These requirements may be satisfied either by examination or through course work at The University of Iowa or another accredited university. The language tool course work does not count toward the 72 semester hours required for the degree, except the three-year-level course work in Portuguese, which may be counted with the faculty adviser's approval.

Comprehensive Examination

The purpose of the Ph.D. comprehensive examination is to determine whether the candidate 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.

The Ph.D. comprehensive examination is administered in both written and oral parts. The written portion consists of a three-hour examination in each of four areas; an oral examination follows, usually lasting two hours. The four examination areas for each track are as follows.

Literature Track

A broad area in Spanish literary history
A broad area in Spanish American literary history
Two specialized areas of the candidate's choice

The two specialized areas of the candidate's choice might involve further and more specialized exploration of particular genres, movements within Spanish, Spanish American, and/or Luso-Brazilian literary and cultural history; or they might involve in-depth study of specific problems in Hispanic literary criticism or in literary theory. Areas involving cinema also may be included.

The reading lists for the broad areas are based on the departmental core reading lists for each genre and time period, with a supplemental list for each of the broad areas prepared by the candidate in consultation with the faculty member(s) directing the exam area. The reading lists for each of the specialized areas are drawn up by the candidate in consultation with the faculty member(s) directing the area.

At least one of these specialized areas must be related to the dissertation topic. In addition, a three-page preprospectus abstract must be submitted to the examining committee before the exam in the specialized area that relates to the dissertation topic. The abstract is discussed during the oral doctoral exam.

Linguistics Track

There are three required areas: Spanish syntax, Spanish phonology, and Spanish language acquisition. The candidates must choose an additional area, typically involving exploration of specialized topics in the core areas listed above or study of particular topics in comparative Romance linguistics, Spanish dialectology, history of the Spanish language, Portuguese linguistics, comparative foreign language pedagogy, sociolinguistics, or linguistic theory.

The reading lists for the three required areas are based on the departmental core reading lists, with a supplemental list for each area prepared by the candidate in consultation with the faculty member(s) directing the area. The reading list for the specialized area is drawn up by the candidate in consultation with the faculty member(s) directing that area. Of the four exam areas, two are intended to be broad, and two-including the specialized topic-focused.

At least one of these specialized areas must be related to the dissertation topic. In addition, a three-page preprospectus abstract must be submitted to the examining committee before the exam in the specialized area that relates to the dissertation topic. The abstract is discussed during the oral doctoral exam.

Dissertation Prospectus

No later than the fourth week of the semester subsequent to completion of the Ph.D. comprehensive examination, the candidate submits a dissertation prospectus for the dissertation committee's approval. The dissertation committee is composed of five faculty members, one of whom must be from outside the department.

Financial Support

Teaching and research assistantships are available to qualified graduate students. Usually, two years of support are available for the completion of a master's degree, and three years beyond the receipt of the M.A. for the Ph.D. As long as their studies and performance meet department standards, graduate students continue to receive support for a reasonable period of time, but usually not for more than five years. Students who want financial support should apply directly to the department office.
Facilities
The Language Media Center (LMC) provides students and faculty with a broad range of services and facilities that include a state-of-the-art audio laboratory, individual audio recording carrels, video viewing rooms for small groups, video viewing stations for individuals, and networked microcomputer and interactive multimedia workstations. The LMC maintains a number of instructional technology classrooms that have special video, audio, and computer equipment for in-class presentations. The center’s extensive collection of international media resources on audio tape, videotape, computer diskette, videodisc, and CD-ROM serves learners at many levels and in many disciplines.

Courses

Spanish -for Undergraduate and Graduate Students

Students may not, except with the department chair’s approval, take an elementary course for credit after having completed a higher-level course for which the elementary course or its equivalent is a prerequisite.

035:000 Cooperative Education Internship 0 s.h.
035:001 Elementary Spanish I 4 s.h. Examination on oral and written comprehension. Taught in Spanish. Open only to students with no previous study of Spanish. GE: foreign language.
035:002 Elementary Spanish II 4 s.h. Continuation of 035:001. Emphasis on oral and written Skill. GE: foreign language. Prerequisite: 035:001 or equivalent.
035:005 Elementary Spanish Review 5 s.h. Intensive review of material presented in 035:001-002. GE: foreign language. Prerequisite: previous study of Spanish.
035:008 Spanish for Health Professionals I 3-4 s.h. Intensive conversation; basic vocabulary for communicating with Spanish-speaking patients; sociocultural aspects of Hispanic culture; emphasis on speaking proficiency. May be taken in place of 035:001 to satisfy GE: foreign language.
035:011 Intermediate Spanish I 3-4 s.h. Reading and writing; emphasis on oral and written communicative skills. Taught in Spanish. GE: foreign language. Prerequisite: 035:002 or equivalent.
035:012 Intermediate Spanish II 3-4 s.h. Continuation of 035:011. GE: foreign language. Prerequisite: 035:011 or equivalent.
035:020 Contemporary Spanish American Narrative 3 s.h. Themes and narrative techniques in major texts, 1905-present; overview of cultural, sociopolitical aspects. Taught in English, readings in English. GE: foreign civilization and culture of Americas. Prerequisite: 086:001.
035:036 Contemporary Latin American News Colloquium 3 s.h. Communication issues at transnational, national, and grassroots levels; emphasis on political, sociocultural themes; contemporary affairs as reported in Latin American press, other media. Taught in English. Same as 130:020.
035:053 Special Work 1-3 s.h.

035:100 Regents Hispanic Institute 1 arr. Regents Study Abroad Program in Valladolid, Spain.
035:101 Accelerated Elementary Spanish 0-4 s.h. Complete first-year course. Open only to graduate students.
035:102 Accelerated Intermediate Spanish 0 s.h. Complete second-year course. Open only to graduate students. Prerequisite: 035:002 or equivalent.
035:103 Writing in Spanish 3 s.h. 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.
035:105 Latinos in the United States 3 s.h. Acquisition of cultural proficiency; focus on issues affecting Latinos in the United States. Prerequisite: 035:012 or equivalent.
035:106 Spanish for Native Speakers 3 s.h. Reading and writing; introduction to systematic study of Spanish grammar; for bilingual students who have already acquired listening and speaking skills in Spanish. Consent of instructor required.
035:107 Advanced Spanish Language 4 s.h. Detailed points of grammar especially troublesome to English speakers; reading, composition, oral presentation, vocabulary. Prerequisite: 035:012 or equivalent.
035:108 Problems in Spanish Grammar 3 s.h. Readings, discussion, vocabulary building, grammar analysis, written practice; focus on difficult topics such as adjective placement, relative pronouns, reflexive constructions. Prerequisite: 035:107 or equivalent.
035:111 Introduction to Hispanic Linguistics 3 s.h. Basic Linguistic theory as applied to analysis of Spanish language; systematic study of sound patterns, sentence construction, word formation; meanings, historical linguistics, sociolinguistics, psycholinguistics. Prerequisite: one course in Spanish numbered above 035:102.
035:112 Spanish Phonology and Morphology 3 s.h. Articulatory description and phonetic transcription of Spanish sounds; how individual sounds are interrelated. Prerequisite: 035:111 or equivalent.
035:113 Structure of the Spanish Language 3 s.h. Detailed analysis of sentence grammar, contrasting Spanish structures with English ones; topics include pronouns, subordinate and relative clauses, word order, types of SE constructions, characteristics of questions, negations, passives, and commands. Conducted in Spanish Prerequisite: 035:111 or equivalent.
035:115 Learning to Teach Second Languages I 3 s.h. Methods and materials demonstration; practice of teaching techniques; organization of teaching. Same as 078:316, 020:119.
035:116 Advanced Composition and Conversation 3 s.h. Practice in speaking and writing for various purposes and audiences; peer editing and rewriting of compositions to sharpen focus, organization, grammar; emphasis on effective communication. Prerequisite: one course numbered above 035:102.
035:117 Topics in Foreign Language Instructional Technology 2 s.h. Technology-based materials for foreign language instruction; computer authoring languages, interactive media, laboratory methods and management. Taught in English. Same as 099:158, 013:123.
035:118 Business Spanish 3 s.h. Clear, concise business writing; emphasis on linguistic and cultural proficiency. Prerequisite: one course in Spanish numbered above 035:102.
035:119 Introduction to Bilingualism 3 s.h. Spanish-English bilingualism in the United States; language usage, maintenance, attitudes, shift, transfer, loss; code-switching. Prerequisite: one course in Spanish numbered above 035:102.
035:120 Techniques of Spanish-English Translation 3 s.h. Prerequisite: 035:103 or equivalent.
035:121 Readings in Spanish Literature and Culture 3 s.h. Tools for improving reading skills; basic concepts for textual understanding; historical overview of literary works, with focus on literature of Spain. Prerequisite: 035:012 or equivalent.
035:122 Introduction to Literary Analysis 3 s.h. Close readings of literary texts from Spain and Spanish America; basic concepts of narrative and poetic analysis. Prerequisite: 035:012 or equivalent.
035:123 Screening Latin America 3 s.h. Latin American film; histories of the four major national film industries; aesthetic and political debates surrounding the New Latin American Cinema movement of the 1960s and 1970s. Prerequisite: 035:012 or equivalent.
035:124 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. Prerequisite: 035:012 or equivalent.
035:125 Readings in Spanish American Literature and Culture 3 s.h. Tools for improving reading skills; basic concepts for textual understanding; historical overview of literary works, with focus on Spanish American literature. Prerequisite: 035:012 or equivalent.
035:126 Foundations in Sociolinguistics 3 s.h. Dialects, speech communities, variation, choosing a code, solidarity and homogeneity, language and sex, language planning. Prerequisite: one course in Spanish numbered above 035:102. Same as 038:118.
035:129 Hispanic Institute: Study/Life in Spain 1 s.h.
035:130 Spanish American Civilization 3 s.h. Pre-Columbian, colonial, modern periods; socioeconomic structure, form of government, culture. Prerequisite: one course in Spanish numbered above 035:102.
035:131 Contemporary Spanish American Fiction 3 s.h. Major 20th-century short-story writers and novelists (Asturias, Bargas, Cortiin, Fuentes, Garcia-Marquez, etc.) through representative works. Prerequisite: one course in Spanish numbered above 035:102.
035:132 Spanish American Poetry I 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 Ruben Dario, Pablo Neruda, Cesar Vallejo. Octavia Paz J.A. Borges Prerequisite: one course in Spanish numbered above 035:103.
035:133 Spanish American Theater 3 s.h. Short history; leading 20th-century Spanish American dramatists, including Florencio Sichler, Villaurrutia, Urdity, Rene Marquez, Cuznani, Egon Wolff, Jorge Diaz. Prerequisite: one course in Spanish numbered above 035:102.
035:134 Spanish American Short Story 3 s.h. Works by 19th and 20th-century Spanish American male and female writers; emphasis on reading strategies and historical, cultural, literary backgrounds. Prerequisite: one course in Spanish numbered above 035:102.
035:136 Culture and Language in the Andes 3 s.h. The Andean world: transformations wrought by arrival of Europeans; continuity, change in principles of organization with emphasis on indigenous responses to conquest and continued domination by non-Andeans. Prerequisite: one course in Spanish numbered above 035:102.
035:137 Introduction to Chicano Literature and Culture 3 s.h. Recent fiction and poetry by Chicano and Chicana writers. Taught in English.
035:138 Survey of Twentieth-Century Puerto Rican Literature 3 s.h. Social, cultural, literary developments from 1898; role of Puerto Rican diaspora in literature and “Newyorkian” writing in context; island and mainland authors. Prerequisite: one course in Spanish numbered above 035:102.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>035:141</td>
<td>Hispanic Institute: Language</td>
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<tr>
<td>035:143</td>
<td>Cuban American Literature and Culture</td>
<td>3 s.h.</td>
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<td>035:145</td>
<td>Latin American Cinema</td>
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<tr>
<td>035:148</td>
<td>Topics in Cinema, Literature and See and the Camino de Santiago: Libro de huc amor and popular culture; Cancioneros and the Trastamara dynasty.</td>
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<td>035:150</td>
<td>Spanish Civilization</td>
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<td>035:151</td>
<td>Renaissance and Golden Age Literature</td>
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<td>035:152</td>
<td>Modern Spanish Literature</td>
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<td>035:153</td>
<td>Don Quijote</td>
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<td>035:155</td>
<td>Medieval and Early Modern Spanish Literature</td>
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<td>035:158</td>
<td>Twentieth-Century Spanish Women Writers</td>
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<td>035:159</td>
<td>Hispanic Fiction to Film</td>
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<td>035:160</td>
<td>Medieval Spanish Literature in Context</td>
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<td>035:161</td>
<td>Spanish Literature and History of 20th-century Spain; topics vary. May be repeated.</td>
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<td>035:162</td>
<td>Latin American Women Writers</td>
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<td>035:163</td>
<td>Topics in Contemporary Spain</td>
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<td>035:165</td>
<td>Shakespeare and Other Great Dramatists</td>
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<td>035:166</td>
<td>English and American Literature</td>
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<td>035:167</td>
<td>Shakespeare and Donne</td>
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<td>035:168</td>
<td>Spanish American Dialectology</td>
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<td>035:169</td>
<td>American Literature of Fantasy</td>
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<td>035:170</td>
<td>Spanish Syntax</td>
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<td>Language and Syntax</td>
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<td>035:172</td>
<td>Topics in Cultural Studies</td>
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<td>035:173</td>
<td>Colonial Spanish American Literature and Culture</td>
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<td>035:174</td>
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<td>035:175</td>
<td>Cultural Identity in Caribbean Literature</td>
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<td>035:176</td>
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<td>035:177</td>
<td>Social History of the Romance Languages</td>
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<td>Topics in Hispanic Linguistics</td>
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<td>035:180</td>
<td>Spanish Golden Age Fiction</td>
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<td>035:181</td>
<td>Spanish Literature</td>
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<td>035:182</td>
<td>Spanish Picurese Literature</td>
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<td>035:183</td>
<td>Spanish American Literature</td>
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<td>035:184</td>
<td>Testimonial Literature in Latin America</td>
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<td>035:185</td>
<td>Spanish American Dialectology</td>
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<td>035:186</td>
<td>American Language of Spanish</td>
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<td>035:187</td>
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<td>035:188</td>
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<td>035:189</td>
<td>Lacuna de Carlos</td>
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<td>035:191</td>
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<td>035:195</td>
<td>Spanish American Dialectology</td>
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<tr>
<td>035:196</td>
<td>Principles of Course Design for Second Language Instruction</td>
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<td>035:198</td>
<td>Honors: Research and Thesis</td>
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<tr>
<td>035:199</td>
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### Spanish - Primarily for Graduate Students

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<td>035:200</td>
<td>Foreign Language Teaching Methods</td>
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<td>035:202</td>
<td>Pedagogy</td>
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<td>035:203</td>
<td>Topics in Graduate Foreign Language</td>
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<td>035:204</td>
<td>Pedagogy</td>
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<tr>
<td>035:205</td>
<td>Topics in Comparative Romance Linguistics</td>
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<tr>
<td>035:206</td>
<td>Comparative study of phonology, morphology, or syntax of the main languages</td>
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<td>035:207</td>
<td>Spanish American Dialectology</td>
<td>3 s.h.</td>
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<td>035:208</td>
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Spanish American Poetry Before 1918

The transfiguration of the swan.

Modernistic poetic motifs in verse and prose; early modernists; Ruben Dario and flowering of modernism; death and transfiguration of the swan.

Nation and Narration in Latin America

Information in Latin America examined through Nation and Narration in Latin America.

Ruben Dario and flowering of modernism; death and European and Spanish American forerunners of modernism.

The post-Franco novel in Spain: literary "postmodernism" and structural, semiotic, psychoanalytic, Marxist, reader response, feminist, deconstructionist criticism.

Significant novels, literary schools, movements.

The Generation of 1898

Concepts and principal playwrights of the Generation of 1898.

Contemporary feminine thought. Same as 008:284.

Women Writers of Latin America

Emergence of a new female subject in 20th-century Latin American women’s writing; Latin American women writers’ contribution to Contemporary feminist thought.

Spanish Renaissance and Baroque

Works by Quevedo, Cervantes, Salas Barbadillo, Benavente, Garcia Lorca, Rafael Alberti, Pedro Salinas, Jorge Guillen.

Principal playwrights, trends to present day; works by Benavente, Garcia Lorca, Casas, Bueno Vallejo, Sastre.

Spanish Renaissance and Baroque

Baroque theater in Spain; ideological, moral messages; Lope de Vega’s model for mass-oriented art; depiction of ideal society, heroes, transgressors; role of women.

The Picaresque Novel

Representative works: El Poema del Cid, El Romancero Viejo, Miliagros de Nuestra Senora El Coro de Lutecia, El Libro de Buen Amor.

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The Picaresque Novel

Theories of Tzvetan Todorov, Irene Bessiere on literature Of Tzvetan Todorov, Irene Bessiere on literature.

Columbia, Puerto Rico; comparison with themes and forms of works by Quevedo, Cervantes, Salas Barbadillo, Benavente, Garcia Lorca, Rafael Alberti, Pedro Salinas, Jorge Guillen.

The Golden Age

Drama of the Golden Age.

Theorists, early modern Spain; Renaissance and Baroque poetry; early modern Spain; Renaissance and Baroque poetry.

The Generation of 1898

Questions that have preoccupied major Latin American writers: Virtudes of Duarte, the ideological, moral messages; Lope de Vega’s model for mass-oriented art; depiction of ideal society, heroes, transgressors; role of women.

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Drama of the Golden Age.

Theorists, early modern Spain; Renaissance and Baroque poetry; early modern Spain; Renaissance and Baroque poetry.
Undergraduate Program

Since the master's degree is the minimum level of preparation for persons seeking professional careers in this field, the undergraduate curriculum leading to the B.A. in speech and hearing science does not qualify an individual to work professionally in the field. Instead, it is designed primarily to prepare students for graduate work. Hence, the undergraduate program emphasizes the normal processes of speech, hearing, and language. The undergraduate program also may be taken by students earning College of Liberal Arts degrees who are not seeking careers in this field.

Course Requirements

The B.A. in speech and hearing science requires eight core courses offered by the department and seven cognate courses offered by other departments. Students may choose cognate courses that also help complete the College of Liberal Arts General Education Program. The requirements are as follows.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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<tbody>
<tr>
<td>003:015 Introduction to Speech and Hearing</td>
<td>3 s.h.</td>
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<tr>
<td>003:110 Phonetics, Anatomy and Applications</td>
<td>3 s.h.</td>
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<tr>
<td>003:111 Basic Acoustics for Speech and Hearing</td>
<td>3 s.h.</td>
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<tr>
<td>003:112 Anatomy and Physiology of Speech Production</td>
<td>4 s.h.</td>
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<tr>
<td>003:113 Introduction to Hearing Science</td>
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<tr>
<td>003:116 Basic Neuroscience for Speech and Hearing</td>
<td>3 s.h.</td>
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<tr>
<td>003:117 Psychology of Language</td>
<td>3 s.h.</td>
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<tr>
<td>003:118 Language Development</td>
<td>3 s.h.</td>
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<tr>
<td>07P:025 Elementary Statistics and Inference</td>
<td>3 s.h.</td>
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<tr>
<td>or 07P:143/22S: 102 Introduction to Statistical Methods</td>
<td>3 s.h.</td>
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<tr>
<td>029:008 Basic Physics (with lab)</td>
<td>4 s.h.</td>
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<tr>
<td>or *029:011 College Physics</td>
<td>4 s.h.</td>
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<tr>
<td>031:001 Elementary Psychology</td>
<td>3 s.h.</td>
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<tr>
<td>103:100 Introduction to Linguistics</td>
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<td>031:013 Introduction to Clinical Psychology</td>
<td>3 s.h.</td>
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<tr>
<td>042:108 Basic Aspects of Aging</td>
<td>3 s.h.</td>
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<td>One of these:</td>
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<tr>
<td>07P:106 Child Development</td>
<td>3 s.h.</td>
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<tr>
<td>031:014 Introduction to Child Development</td>
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<td>*002:002 Introductory Animal Biology</td>
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<tr>
<td>*002:010 Principles of Biology I</td>
<td>4 s.h.</td>
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<tr>
<td>*002:021 Human Biology</td>
<td>4 s.h.</td>
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</table>

*Courses marked with an asterisk are preferred.

A good background in mathematics is essential for success in many courses required for the B.A. in speech and hearing science. An adviser works closely with each student to determine whether a college-level trigonometry or other mathematics course is required as part of the student's graduation plan.

Transfer students must complete a minimum of 15 semester hours in departmental courses at The University of Iowa.

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 math and science competencies that may be satisfied with courses approved for the General Education Program.

Before the third semester begins: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: three courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: nine courses in the major and at least three-quarters of the semester hours required for graduation

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

The junior/senior-year program leading to the B.A. with honors in speech and hearing science is open to students who at the beginning of their junior year have completed at least 10 semester hours of course work that can be counted toward a major in the department and have earned a grade-point average of at least 3.30 in all major course work and all course work at the University.

At any time during their undergraduate study, students who have earned a grade-point average of at least 3.30 and who did not enter the University as honors students may apply to the University Honors Program and the department's honors program upon recommendation of the departmental honors adviser. To graduate with honors, students must be members of the University Honors Program and must complete both 003:097 Honors Seminar and 003:098 Honors Thesis. Students register for 003:097 in the spring of the junior year and for 003:098 in both fall and spring of the senior year.

Graduate Programs

Master of Arts

The M.A. program in speech-language pathology and audiology may be a professional program to prepare the student for immediate placement in clinical service positions, or it may be a general program of graduate study leading to additional study for the Ph.D. degree. The program of study for an M.A. with professional emphasis is designed to ensure that upon graduation the student will meet requirements for immediate professional employment.

M.A. candidates usually have a background of undergraduate courses in speech and hearing science, psychology of language, and human behavior essentially equivalent to an undergraduate major in this field at The University of Iowa.

Before registering in the program, entering M.A. candidates receive descriptive materials about basic science core courses considered to be required preparation for the M.A. program, and clinical core courses required for the M.A. for which comparable courses taken at the undergraduate level may be accepted. Decisions about incorporating background course work in these areas are made by the faculty adviser in consultation with the student and the instructors of the basic science or clinical core courses.

The M.A. program with professional emphasis prepares clinicians in speech-language pathology

Hart, Rebecca Hubbard, Judith M. Knahe, Jeffrey A. Knox, Claudia L. Knutson, Marsha Barth Leich, Mary Lowder, Mary F. Lukas, Joan D. Marttila, Elizabeth B. Merrifield, Nicole S. Neems, Jennie A. Pint, Debra K. Robin, Janette Rogers, Katherine Sercveld, Sandra D. Show, Kathleen J. Spalding, Myrna M. Stephens, Kelly Varmum, Rebecca R. Vilda, Kathy Wiley

Undergraduate degree: B.A. in Speech and Hearing Science

Graduate degrees: M.A. in Speech Pathology and Audiology, Ph.D. in Speech and Hearing Science

Web site: http://www.she.uiowa.edu

The courses and degree programs of the Department of Speech Pathology and Audiology 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—whose preparation may be enriched by the study of speech and hearing processes and their disorders.

Advanced degree holders in this field 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.

All of the department's professional programs leading to the M.A. are accredited by the Council on Academic Accreditation of the American Speech-Language-Hearing Association.
or audiology who are able to function independently in a variety of clinical settings. Persons completing an M.A. program with professional emphasis meet all academic and practicum requirements for clinical certification by the American Speech-Language-Hearing Association and for licensure by the state of Iowa.

All M.A. students must complete at least 4 semester hours of work related to research. This may be accomplished by any combination of enrollment in seminars (at 2 semester hours 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 are not required to complete a thesis, although all students demonstrating research aptitude and interest are encouraged to do so. All candidates preparing for the M.A. without thesis are required to take final written comprehensive examinations.

M.A. with Research Emphasis (General Program)
The general M.A. program for students intending to continue to the Ph.D. usually includes a substantial portion of the courses in the professional M.A. program. Students in the general M.A. program also are required to present a thesis and successfully complete a final oral examination.

The M.A. with research emphasis requires a minimum of 38 semester hours of graduate credit. The required course work and thesis research typically take two years to complete.

M.A. with Professional Emphasis
A typical M.A. program with professional emphasis 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 must take the following.

*003:116 Basic Neuroscience for Speech and Hearing 3 s.h.
*003:135 Principles of Diagnosis 1-3 s.h.
*003:136 Principles of Intervention 1-3 s.h.
*003:140 Manual Communication 1 s.h.
*003:145 Speech-Language Pathology I: Phonological Disorders, Developmental Language Disorders, and Stuttering 1-3 s.h.
*003:146 Speech-Language Pathology II: Neurological Disorders, Voice Disorders, Cleft Palate, and Related Disorders (speech-language pathology majors only) 1-3 s.h.
*003:185 Hearing Loss and Audiology 4 s.h.
003:244 Rehabilitative Audiology 4 s.h.
003:300 Professional Practice of Audiology and Speech-Language Pathology 0 s.h.
003:510 Seminar: Introduction to Research in Speech and Hearing 0 s.h.
Advanced seminars or research 4 s.h.
*An equivalent undergraduate course may satisfy requirements.

Also required are additional semester hours of practicum registration sufficient to meet supervised, direct clinical experience requirements for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association and the Iowa license, and to provide broad supervised practicum experience.

SPEECH-LANGUAGE PATHOLOGY REQUIREMENTS
In addition to the core requirements, all students preparing to be speech-language pathologists must take a minimum of 14 semester hours from the following.

003:201 Principles of Voice Production 3 s.h.
003:202 Methods of Teaching Voice 3 s.h.
003:206 Speech and Language Disorders of Young Children: Birth to Five Years 2 s.h.
003:207 Speech and Language Disorders of Older Children: Five to Eighteen Years 2 s.h.
003:208 Communication Problems of Developmental Disabilities 2 s.h.
003:209 Language Disorders: Multicultural Issues 2 s.h.
003:212 Voice Disorders 2 s.h.
003:213 Voice Training and Rehabilitation 2 s.h.
003:221 Instrumentation for Voice Analysis 2 s.h.
003:231 Communication Problems Associated with Head and Neck Cancer 1 s.h.
003:233 Neurogenic Disorders of Language 2 s.h.
003:234 Neurogenic Disorders of Speech 2 s.h.
003:236 Swallowing Disorders 2 s.h.
003:237 Cleft Palate and Related Disorders 2 s.h.
003:260 Designing Assistive Devices 1-3 s.h.
003:282 Phonological Development and Disorders 2 s.h.
003:283 Stuttering 2 s.h.
003:350 Preceptorship in Augmentative Communication 1 s.h.
07E:104 Remedial Methods in Speech and Hearing 2 s.h.

Hospital and Health Agencies Track
003:208 Communication Problems of Developmental Disabilities 2 s.h.
003:212 Voice Disorders 2 s.h.
003:231 Communication Problems Associated with Head and Neck Cancer 1 s.h.
003:233 Neurogenic Disorders of Language 2 s.h.
003:234 Neurogenic Disorders of Speech 2 s.h.
003:236 Swallowing Disorders 2 s.h.
003:237 Cleft Palate and Related Disorders 2 s.h.
003:260 Designing Assistive Devices 1-3 s.h.
003:282 Phonological Development and Disorders 2 s.h.
003:283 Stuttering 2 s.h.
003:350 Preceptorship in Augmentative Communication 1 s.h.

Vocology Track
003:201 Principles of Voice Production 3 s.h.
003:202 Methods of Teaching Voice 3 s.h.
003:212 Voice Disorders 2 s.h.
003:213 Voice Training and Rehabilitation 2 s.h.
003:221 Instrumentation for Voice Analysis 2 s.h.
003:231 Communication Problems Associated with Head and Neck Cancer 1 s.h.
003:234 Neurogenic Disorders of Speech 2 s.h.
003:237 Cleft Palate and Related Disorders 2 s.h.
003:283 Stuttering 2 s.h.
049:125 Voice for the Actor 3 s.h.
AUDIOLGY REQUIREMENTS
In addition to the core requirements, all students preparing to become audiologists must take the following:

- **003:100 Counseling Theories and Techniques** 3 s.h.
- **003:219 Fundamentals of Laboratory Instrumentation** 3 s.h.
- **003:240 Hearing Aids I** 3 s.h.
- **003:241 Differential Diagnosis in Audiology** 2 s.h.
- **003:242 Hearing Aids II** 3 s.h.
- **003:244 Rehabilitative Audiology** 4 s.h.
- **003:245 Pediatric Audiology** 2 s.h.
- **003:246 Advanced Audiology** 3 s.h.
- **003:247 Medical Audiology** 3 s.h.
- **003:290 Objective Measures** 3 s.h.

Two advanced courses chosen from these:
- **003:222 Speech and Hearing Anatomy** 2 s.h.
- **003:224 System and Signal Theory for Speech and Hearing Sciences** 3 s.h.
- **003:230 Speech Perception** 3 s.h.
- **003:243 Hearing Aid Assembly and Repair** 2 s.h.
- **003:254 Psychoacoustics** 3 s.h.
- **003:291 Central Auditory Disorders** 2 s.h.
- **003:292 Advanced Rehabilitative Audiology** 2 s.h.
- **07E:104 Remedial Methods in Speech and Hearing** 2 s.h.

Additional practicum, research, and elective courses

Students planning to work as audiologists in a school setting must take **07E:104 Remedial Methods in Speech and Hearing** along with appropriate practicum experiences.

Requirements for Employment
A number of states, including Iowa, require a state license in speech-language pathology or audiology for persons who work in settings other than the public schools. Students who meet the requirements listed above for the M.A. with professional emphasis also meet the academic requirements for the license in Iowa as well as in most other states.

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
- 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)
- Completion of the requirements in speech-language pathology or audiology and the 20-semester-hour professional education sequence, including **07E:104 Remedial Methods in Speech and Hearing** and **07E:192 Special Area Student Teaching as a speech-language pathologist or audiologist; course work in the following areas must be completed to meet the professional education sequence:
  - 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)
  - Child development (e.g., human growth and development, principles and theories of child development, history and theories of early childhood education)

Note: General Education courses (e.g., introduction to psychology, sociology, history, literature, and humanities) do not meet the requirements of the professional education sequence.

Doctor of Philosophy
The Ph.D. program provides flexible, comprehensive training for the scholar-researcher 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 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 the field of 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 are no required courses 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, neurology, anatomy, and others), and special reading and research experiences.

The following courses are offered by the department of Speech Pathology and Audiology 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.)

- **003:201 Principles of Voice Production** 3 s.h.
- **003:218 Psycholinguistics** 3 s.h.
- **003:219 Fundamentals of Laboratory Instrumentation** 3 s.h.
- **003:224 System and Signal Theory for Speech and Hearing Sciences** 3 s.h.
- **003:230 Speech Perception** 3 s.h.
- **003:250 Acoustics of Speech** 4 s.h.
- **003:251 Biomechanics of Speech** 4 s.h.
- **003:252 Physiology of Speech Production** 5 s.h.
- **003:254 Psychoacoustics** 3 s.h.
- **003:256 Physiology of Hearing** 4 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 (003:590 Research) during each semester of residence and to register for and participate in **003:515 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.

Admission, Appointments
The Department of Speech Pathology and Audiology has requirements for admission and graduate appointments that supplement those specified by the Graduate College. A brief summary of department requirements is presented below. More detailed information is available from the department chair.

Application Form
All applicants for admission to graduate study in the Department of Speech Pathology and Audiology must complete the Graduate College application form. In addition, they must complete the departmental information form, available from the department chair.

Admission to the M.A. Program
The department bases M.A. admission on applicants’ credentials relative to those presented by other applicants for the same term. While an undergraduate grade-point average above 3.20 does not ensure admission, the department admits few applicants with undergraduate grade-point averages below 3.20.

Completed applications must be received no later than January 15 for enrollment in the next summer session or fall semester. Later applications are considered only in special situations. Applications to begin study in the spring semester are considered only under special circumstances and only if received no later than the preceding November 1.
Admission to the Ph.D. Program

Completed applications should be received at least two months prior to the beginning of the term for which application is made: approximately April 1 for summer session, July 1 for fall semester, November 1 for spring semester. However, applicants who want to be considered for graduate appointments must file the admission application by the deadlines specified under "Application for Graduate Appointments." Applicants usually are notified of action on their admission within six weeks after applications are complete.

Application for Graduate Appointments

The following information applies to all financial appointments administered by the department. A Graduate appointments usually begin only in fall semester. Students beginning study in the spring semester or summer session are considered for appointments for the following fall semester.

- Scores on the Graduate Record Examination (GRE) General Test are routinely required for consideration for financial assistance.
- Appointment applications must be received by January 15 to ensure consideration for an appointment beginning the following fall semester.
- Initial appointment offers generally are made between April 1 and June 1; however, the department continues to make offers after this time.

Clinical Facilities

The clinical training program benefits greatly from the fact that Iowa City is the principal health center of the state, and from the ready availability of its health service facilities for the clinical training of students in speech-language pathology and audiology.

The University of Iowa Affiliated Speech and Hearing Services include the Wendell Johnson Speech and Hearing Clinic, the division of speech and hearing in the University Hospitals and Clinics (UIHC) Department of Otolaryngology-Head and Neck Surgery; UIHC Consolidated Speech and Swallowing Services, which provides services to the Departments of Neurology, Child Psychiatry, and Otolaryngology-Head and Neck Surgery; and speech and hearing services in the University Hospital School; Pediatrics Regional Child Health Specialty Clinics; and the audiology and speech pathology service in the Veterans Affairs Medical Center. Directors of these programs form the Council on Speech Pathology and Audiology at The University of Iowa.

The Wendell Johnson Speech and Hearing Clinic serves the University and the general public. Included in its services are outpatient evaluation and rehabilitation programs for speech, hearing, and language problems, a six-week summer residential program, and a six-week reading day camp for children. These clinical programs give students supervised clinical experience with a wide variety of speech, hearing, and language disorders.

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 UIHC Consolidated Speech and Swallowing Services, the Regional Child Health Specialty Clinics, University Hospital School, and the Veterans Affairs Medical Center.

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 various departments in the Colleges of Medicine and Dentistry makes additional laboratory facilities available for research on problems in speech and hearing. The participation and cooperation of specialists from various fields, including psychology, child development, education, engineering, statistics, and medicine, further broaden the scope of research activities in speech and hearing.

Courses

For Undergraduates

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>003:000</td>
<td>Speech Pathology and Audiology Cooperative Education Assignment 0 s.h.</td>
<td>Internships administered by the Cooperative Education Program; filled on competitive basis.</td>
</tr>
<tr>
<td>003:015</td>
<td>Introduction to Speech and Hearing Processes and Disorders 3 s.h.</td>
<td>Speech, language, auditory behavior as fields of scientific study; major types of speech, hearing, language disorders.</td>
</tr>
<tr>
<td>003:025</td>
<td>Research Practicum arr.</td>
<td>Individual or small group participation in faculty research projects. Consent of instructor required.</td>
</tr>
<tr>
<td>003:073</td>
<td>Honors Seminar 2 s.h.</td>
<td>Research topics and procedures in speech and hearing sciences; ongoing faculty research, research opportunities, possible research projects. Open only to honors students planning to complete a &quot;honors thesis.&quot;</td>
</tr>
<tr>
<td>003:075</td>
<td>Honors Thesis 2 s.h.</td>
<td>Close work with a faculty mentor. Prerequisite: 003:097.</td>
</tr>
<tr>
<td>003:099</td>
<td>Topics in Hearing, Language, Speech Processes and Disorders 1 s.h.</td>
<td>Seminar; opportunities for clinical observation. Open only to honors students.</td>
</tr>
</tbody>
</table>

For Undergraduate and Graduate Students

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>003:100</td>
<td>Counseling Theories and Techniques 3 s.h.</td>
<td>Counseling and psychological services as applied to adjustment and management of communication disorders; emphasis on clinical success through integration of theory and specific techniques. Open only to professional Masters majors, junior or senior majors, or others with consent of instructor. Offered fall semesters.</td>
</tr>
<tr>
<td>003:110</td>
<td>Phonetics: Theory and Applications 3 s.h.</td>
<td>Basic concepts: articulatory and acoustic description of speech 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.</td>
</tr>
<tr>
<td>003:111</td>
<td>Basic Acoustics for Speech and Hearing 3 s.h.</td>
<td>Principles of sound, simple harmonic motion, sound pressure and intensity, decibels, complex waves, Fourier analysis, resonance and filters, distortion, transmission of sound. Offered spring semester of every year and summer sessions of odd years.</td>
</tr>
<tr>
<td>003:112</td>
<td>Anatomy and Physiology of Speech Production 4 s.h.</td>
<td>Normal anatomy, physiology of structures used to produce speech; principles, methods for instrumental study of speech production. Offered spring semesters. Prerequisite: 003:110 or 103:110. Pre- or corequisite: 003:111 or consent of instructor.</td>
</tr>
<tr>
<td>003:113</td>
<td>Introduction to Hearing Science 4 s.h.</td>
<td>Normal auditory process; anatomy and physiology of auditory system; subjective correlates of auditory stimuli. Offered fall semesters and summer sessions of even years. Prerequisite: 003:111 or consent of instructor.</td>
</tr>
<tr>
<td>003:116</td>
<td>Basic Neuroscience for Speech and Hearing 3 s.h.</td>
<td>Basic anatomy, physiology of central nervous system; emphasis on neural systems involved in normal and disordered communication. Offered spring semesters. Prerequisite: course in biological sciences or zoology, or consent of instructor. Same as 103:177.</td>
</tr>
<tr>
<td>003:117</td>
<td>Psychology of Language 3 s.h.</td>
<td>Theoretical, empirical investigations of linguistic behavior; behavioral, rationalist models in context of formal linguistic structure and context of models of speech perception and production. Offered spring semesters. GE: social sciences. Prerequisite: 103:100 or consent of instructor. Same as 103:172.</td>
</tr>
<tr>
<td>003:118</td>
<td>Language Development 1-3 s.h.</td>
<td>Alternative models of language acquisition; empirical data describing language development from its prelinguistic roots through later development in the school years. Offered fall semesters. GE: social sciences Pre- or corequisite: 031:001 or consent of instructor. Same as 103:176.</td>
</tr>
<tr>
<td>003:123</td>
<td>Principles of Diagnosis 1-3 s.h.</td>
<td>Basic concepts of psychological measurement, their application to assessment and diagnosis of communication disorders; fundamental methods of observing, testing, diagnosing disordered communication in children, adults. Offered fall semesters. Prerequisites: 003:015, 003:110 or 103:110, 003:112, 003:118, and 031:155; or equivalents; and 3.00 grade-point average in the major; or consent of instructor. Corequisite: 003:145.</td>
</tr>
<tr>
<td>003:136</td>
<td>Principles of Intervention 1-3 s.h.</td>
<td>Principles underlying speech and language treatment procedures provided by speech-language pathologists and audiologists; historical perspective, current issues in management of individuals with speech, language, hearing disorders; focus on commonalities among intervention principles regardless of disorder. Offered spring semesters. Prerequisites: 003:015, 003:118, 003:135, and 031:145; and 3.00 grade-point average in the major; or consent of instructor. Pre- or corequisite: 003:117.</td>
</tr>
<tr>
<td>003:140</td>
<td>Manual Communication 1 s.h.</td>
<td>Training in use of sign systems in manual communication.</td>
</tr>
<tr>
<td>003:145</td>
<td>Speech-Language Pathology 1 3 s.h.</td>
<td>Speech sound disorders, developmental language disorders, stuttering; behavioral characteristics, developmental patterns, theories of etiology. Offered fall semesters. Prerequisites: 003:015, 003:110 or 103:110, 003:112, and 003:118; and 3.00 grade-point average in the major; or consent of instructor.</td>
</tr>
</tbody>
</table>
Development and Disorders 2 s.h.
Development of child’s phonological system; theoretical bases, normative data support; assessment of disordered sound systems in child and adult populations; intervention procedures for speech sound disorders. Offered spring semesters. Prerequisites: 003:110 or 033:118, 033:135, and 033:145. Corequisites: 003:117, 033:136, and 033:146 or consent of instructor.

003:283 Stuttering 2 s.h.
Issues, approaches to treatment of children, adults. Offered fall semesters. Prerequisites: 003:015, 033:112, and 033:145 or equivalents. Corequisites: 003:115 or consent of instructor.

003:280 Objective Measurements 3 s.h.
Theoretical bases, instrumentation, and clinical applications of multifrequency tympanometry and otoacoustic emissions measurements; biomechanical properties of auditory system; interpretation of clinical cases. Offered spring semesters. Consent of instructor required.

003:289 Stuttering 2 s.h.
Issues, approaches to treatment of children, adults. Offered fall semesters. Prerequisites: 003:015, 033:112, and 033:145 or equivalents. Corequisites: 003:115 or consent of instructor.

003:286 Speech and Language Disorders of Older Children: Birth to Five Years 2 s.h.
Nature, clinical management of communication problems of children and adults with mental retardation, pervasive developmental disorders, cerebral palsy. Offered spring semesters of even years. Prerequisites: 003:115, 033:136, and 033:145 or consent of instructor.

003:285 Communication Problems of Developmental Disorders and Disabilities 2 s.h.
Nature, management of communication problems of children and adults with mental retardation, pervasive developmental disorders, cerebral palsy. Offered fall semesters of odd years. Prerequisites: 003:115, 033:136, and 033:145 or consent of instructor.

003:284 Speech and Language Disorders of Children 2 s.h.
Nature, management of communication problems of children and adults with mental retardation, pervasive developmental disorders, cerebral palsy. Offered fall semesters of odd years. Prerequisites: 003:115, 033:136, and 033:145 or consent of instructor.

003:283 Stuttering 2 s.h.
Nature, etiology, principles of treatment of common disorders associated with cleft lip and palate, associated disorders. Offered fall semesters of even years. Prerequisites: 003:115, 033:136, and 033:145 or consent of instructor.

003:282 Phonological Development and Disorders 2 s.h.
Development of child’s phonological system; theoretical bases, normative data support; assessment of disordered sound systems in child and adult populations; intervention procedures for speech sound disorders. Offered spring semesters. Prerequisites: 003:110 or 033:118, 033:135, and 033:145. Corequisites: 003:117, 033:136, and 033:146 or consent of instructor.

003:281 Clinical Linguistics 3 s.h.
Theoretical approaches to issues in psycholinguistics; models demonstrating relation of formal language structure to psychological operations used in speech perception, production; laboratory emphasis on paradigms research in psycholinguistics. Offered fall semesters. Consent of instructor required. Same as 028:218.

003:280 Objective Measurements 3 s.h.
Theoretical bases, instrumentation, and clinical applications of multifrequency tympanometry and otoacoustic emissions measurements; biomechanical properties of auditory system; interpretation of clinical cases. Offered spring semesters of even years. Consent of instructor required.

003:279 Advanced Auditory Rehabilitation 2 s.h.
Current and developing procedures for assessment, habilitation of adults and children with hearing losses. Offered fall semesters of odd years. Consent of instructor required.
003:300 Professional Practice of Audiology and Speech Language Pathology 0 s.h.
Topics in the general practice. may be repeated. Consent of instructor required.

003:301 Practicum: Speech-Language Pathology 0 s.h.
Supervised clinical practice. may be repeated open only to MA professional emphasis students. Prerequisites: 003:135, 003:156, 003:923, 003:145, and 003:146 or equivalents. Consent of instructor required.

003:302 Practicum: Speech-Language Pathology Assessment 0 s.h.
Supervised clinical practice involving evaluation of individuals for speech or language impairments. Closed to professional MA speech language pathology students. Consent of instructor required.

003:311 Practicum: Audiology 0 s.h.
Supervised clinical practice may be repeated open only to MA professional emphasis audiologists students. Consent of instructor required.

003:312 Practicum: Hearing Measurement and Evaluation of individuals for hearing impairment and its impact; clinical practice. may be repeated. Consent of instructor required.

003:350 Preceptorship In Augmentative Communication 1 s.h.
Approaches to development of alternate modes of communication for individuals with limited oral communication. Consent of instructor required.

003:510 Seminar: Introduction to Research in Speech and Hearing 0 s.h.
Philosophy of science: basic principles of research; research design; research opportunities in the department. Offered fall semesters.

003:515 Presentation of research, results by faculty, students. 0 s.h.
003:520 Seminar: Developmental Language Disorders 2 s.h.
Critical issues research; multiculural issues in service delivery; research in speech sound disorders, single-subject designs in intervention, language assessment and remediation studies. May be repeated. Offered fall semesters and summer sessions. Consent of instructor required.

003:521 Seminar: Stuttering 2 s.h.
Theoretical issues, research literature. May be repeated. Offered spring semesters of "ev" years. Consent required.

003:522 Seminar: Voice 2 s.h.
Research on normal and disordered voice production, perception: vocal abuse, fatigue, endurance; perceptual correlates of vocal pathology; models of voice production; spasmodic dysphonia; voice assessment, voice improvement. May be repeated. Offered fall semesters. Consent of instructor required.

003:524 Seminar: Hearing Measurement and Evaluation 0 s.h.
Theoretical issues, research literature. May be repeated. Offered spring semesters of "ev" years. Consent required.

003:525 Seminar: Clinical Practice 2 s.h.
Research on normal and disordered voice production, perception: vocal abuse, fatigue, endurance; perceptual correlates of vocal pathology; models of voice production; spasmodic dysphonia; voice assessment, voice improvement. May be repeated. Offered fall semesters. Consent of instructor required.

003:526 Seminar: Rehabilitation Audiology 2 s.h.
Theoretical issues, research literature. May be repeated. Offered spring semesters. Consent of instructor required.

003:528 Seminar: Neuromotor Communication Disorders 2 s.h.
Speech, language, and cognitive problems associated with neuromotor disorders. May be repeated. Offered spring semesters. Consent of instructor required.

003:530 Seminar: Communication Disorders and Aging 2 s.h.
Emphasis on application of gerontology to speech-language pathology, audiology. May be repeated. Offered summer sessions be even years. Consent of instructor required.

003:532 Seminar: Speech Science 2 s.h.
Research of speech science, physiologic perceptual processes of speech. May be repeated. Offered summer sessions. Consent of instructor required. Same as 103:370.

003:533 Seminar: Psycholinguistics 2 s.h.
Perceptual processing and language, discourse theory, phonology, conversational competence, cognitive models of language. May be repeated. Offered spring semesters. Consent of instructor required. Same as 103:320.

003:535 Seminar: Evoked Potentials 2 s.h.
Auditory evoked potentials: theory, applications current issues. May be repeated. Consent of instructor required. Offered summer semesters.

003:536 Seminar: Experimental Audiology 2 s.h.
Topic related to experimental procedures for listeners with hearing loss. May be repeated. Offered summer sessions of odd years. Consent of instructor required.

003:537 Seminar: Clinical Audiology 2 s.h.
Selected topics. May be repeated. Offered summer sessions of "ev" years. Consent of instructor required.

003:538 Seminar: Auditory Physiology 2 s.h.
Topics of interest to group. May be repeated. Offered spring semesters of "ev" years. Consent of instructor required.

003:590 Research 0 s.h.
Consent of instructor required.

STATISTICS AND ACTUARIAL SCIENCE
Chair: James D. Broffitt
Professor emeritus: Leonard S. Feldt (Psychological and Quantitative Foundations)
Associate professors: Jian Huang, Joseph B. Lang, Russell V. Lehn, X Sheldon Lin, Osmat Stramer
Associate professors emeritus: John J. Burch Assistant professors: Grace Chan, M. Kathryn Cowles
Undergraduate degrees: B.S. in Statistics, Actuarial Science
Undergraduate nondegree program: minor in Statistics
Graduate degrees: M.S. in Actuarial Science (Statistics); M.S., Ph.D. in Statistics
Web site: http://www.stat.uiowa.edu

The world is filled with uncertainty; decisions are often made without full knowledge of how they may affect future events. The science of probability and statistics is used to formalize the decision-making process. This involves constructing mathematical models for random processes that are relevant data. Important steps in constructing models are the collection and analysis of data obtained from designed experiments or observational studies.

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 a strong background in mathematics and computer use. 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. They assist organizations in finding employment at all levels of the profession’s fields.

Undergraduate Programs
The Bachelor of Science can be earned in statistics or in actuarial science.

Bachelor of Science in Statistics
The program requires 10 core courses that provide essential instruction in statistical methods, applications, and theory. In addition, students concentrate on their particular interest areas by choosing one of the following three emphasis tracks, in which they complete at least four courses.

Statistics in Business, Industry, Government, and Research
This track emphasizes statistical applications and data analysis. It is appropriate for students interested in careers as applied statisticians.

Statistical Computing
This track emphasizes statistical applications and requires additional course work in computer programming. It prepares students for work in statistical applications that require extensive computer programming for data analysis.
Mathematical Statistics

This track provides a solid foundation in statistical theory and applications. It is good preparation for graduate study.

Requirements

CORE COURSES
All students must complete the following.

Computer Science
226:016 Computer Science I 4 s.h.

Mathematics
One of these sequences:
22M:025-026 Calculus I-II 8 s.h.
22M:035-036 Engineering Calculus I-II 8 s.h.
22M:045-046 Accelerated Calculus with Applications I-II 8 s.h.
22M:027 Introduction to Linear Algebra 4 s.h.

Statistics
223:030 Statistical Methods and Computing 3 s.h.
*22S:130-131 Introduction to Mathematical Statistics I-II 6 s.h.
22S:152 Applied Linear Regression 3 s.h.
22S:158 Experimental Design and Analysis 3 s.h.
063:163 Introduction to the Design of Sample Surveys 3 s.h.

22S:156 Applied Time Series Analysis 3 s.h.
22S:161 Applied Multivariate Analysis 3 s.h.
22S:162 Applied Generalized Regression 3 s.h.
22S:167 Environmental and Spatial Statistics 3 s.h.
22S:168 Analysis and Design of Experiments I 3 s.h.
22S:169 Analysis and Design of Experiments II 3 s.h.
22S:170 Applied Multivariate Analysis 3 s.h.
22S:171 Statistical Consultation 3 s.h.
22S:175 Risk Theory 4 s.h.
063:164 Research Data Management 3 s.h.

Special Emphasis Tracks

Statistics in Business, Industry, Government, and Research
063:164 Research Data Management 3 s.h.
Three of these:
223:133 Quality Control 3 s.h.
225:135 Continuous Quality Improvement 3 s.h.
22S:138 Bayesian Statistics 3 s.h.
22S:156 Applied Time Series Analysis 3 s.h.
22S:161 Applied Multivariate Analysis 4 s.h.
22S:162 Applied Generalized Regression 3 s.h.
22S:168 Analysis and Design of Experiments II 3 s.h.
22S:173 Statistical Consulting 3 s.h.
063:167 Intermediate Design of Sample Surveys 3 s.h.

Statistical Computing
22C:020 Computer Science II 4 s.h.
063:164 Research Data Management 3 s.h.

Two of these:
22C:036 Elementary Numerical Analysis 3 s.h.
22S:138 Bayesian Statistics 3 s.h.
22S:56 Applied Time Series Analysis 3 s.h.
22S:161 Applied Multivariate Analysis 4 s.h.
22S:162 Applied Generalized Regression 3 s.h.
22S:166 Analysis and Design of Experiments II 3 s.h.
22S:173 Statistical Consulting 3 s.h.

Mathematical Statistics

22M:055 Fundamental Properties of Spaces and Functions I 3 s.h.
22M:028 Calculus III 4 s.h.
or
22M:056 Fundamental Properties of Spaces and Functions II 4 s.h.
Two of these:
22S:138 Bayesian Statistics 3 s.h.
*22S:153-154 Mathematical Statistics I-II 6 s.h.
22S:156 Applied Time Series Analysis 3 s.h.
22S:161 Applied Multivariate Analysis 4 s.h.
22S:162 Applied Generalized Regression 3 s.h.
22S:167 Environmental and Spatial Statistics 3 s.h.
22S:168 Analysis and Design of Experiments I 3 s.h.
22S:169 Analysis and Design of Experiments II 3 s.h.
22S:170 Applied Multivariate Analysis 3 s.h.
22S:171 Statistical Consultation 3 s.h.
22S:175 Risk Theory 4 s.h.
063:164 Research Data Management 3 s.h.

*If 22S:153-154 are used to satisfy the core requirements, they may not be used to satisfy the emphasis requirement.

Bachelor of Science in Actuarial Science

Actuaries achieve professional status by passing a series of examinations administered by the Society of Actuaries and/or the Casualty Actuarial Society. These examinations are challenging. Mastering the examination material requires tenacity and a substantial commitment of time.

This B.S. prepares students for careers in the actuarial profession and helps them learn material included in the professional examinations. Students take a variety of actuarial science courses. In addition, preparation for business aspects of the actuarial profession requires the study of accounting, law, finance, insurance, and economics. Courses relating to communication skills, such as writing and speaking, are also very important.

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 pre-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. Students should apply no later than March 1 two years before they expect to graduate.

Students admitted to the actuarial science major usually have completed at least 40 semester hours at the University or another postsecondary institution, including a three-course calculus sequence, a course in linear algebra, and a course in probability and statistics. The admission decision is based on a student’s performance in these courses and other courses relevant to success in the major.

The trend in grades from semester to semester also is considered, and ACT scores are helpful in evaluating transfer students.

Students who have a thorough understanding of mathematics, as reflected by their performance in prerequisite math course work, tend to be most successful in actuarial science study.

For application forms and more information about selective admission, contact the Department of Statistics and Actuarial Science.

Permission to substitute course work taken at another institution for required courses at Iowa is decided case-by-case.

Courses required for the major are as follows.

Computer Science
22C:016 Computer Science I 4 s.h.

Economics
06E:001 Principles of Microeconomics 4 s.h.
06E:002 Principles of Macroeconomics 4 s.h.

Mathematics
One of these sequences:
22M:025-026 Calculus I-II 8 s.h.
22M:035-036 Engineering Calculus I-II 8 s.h.
22M:045-046 Accelerated Calculus with Applications I-II 8 s.h.

All of these:
22M:027 Introduction to Linear Algebra 4 s.h.
22S:055-056 Fundamental Properties of Spaces and Functions I-II 7 s.h.

Statistics and Actuarial Science

All of these:
22S:112 Introduction to Actuarial Science 3 s.h.
22S:130-131 Introduction to Mathematical Statistics I-II 6 s.h.
22S:153-154 Mathematical Statistics I-II 6 s.h.
22S:174 Stochastic Process Models 3 s.h.
22S:175 Risk Theory 4 s.h.
22S:180 Mathematics of Finance 3 s.h.
22S:181-182 Life Contingencies I-II 8 s.h.

In exceptional cases, the adviser may grant permission to waive 22S:130 and/or 22S:131.

Sample Schedule

The following is a sample schedule for completing actuarial science degree requirements.

First Year

Fall Semester
06E:001 Principles of Microeconomics 4 s.h.
22C:016 Computer Science I 4 s.h.
22M:045 Accelerated Calculus with Applications I 4 s.h.

Spring Semester
06E:002 Principles of Macroeconomics 4 s.h.
22M:027 Introduction to Linear Algebra 4 s.h.
22M:046 Accelerated Calculus with Applications II 4 s.h.
SECOND YEAR

Fall Semester
22M:055 Fundamental Properties of Spaces and Functions I 3 s.h.
22S:130 Introduction to Mathematical StatisticsI 3 s.h.

Spring Semester
22M:056 Fundamental Properties of Spaces and Functions II 4 s.h.
22S:112 Introduction to Actuarial Science 3 s.h.
22S:131 Introduction to Mathematical StatisticsII 3 s.h.

THIRD YEAR

Fall Semester
22S:135 Mathematical Statistics I 3 s.h.
22S:180 Mathematics of Finance 3 s.h.

Spring Semester
22S:154 Mathematical Statistics II 3 s.h.
22S:174 Stochastic Process Models 3 s.h.
22S:181 Life Contingencies I 4 s.h.

FOURTH YEAR

Fall Semester
22S:175 Risk Theory 4 s.h.
22S:182 Life Contingencies II 4 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.) Much of the work in the discipline 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 the department to confirm a four-year plan.

B.S. in Actuarial Science

Before the third semester begins: calculus I and II, 22M:027, and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: 22M:055-056, 22S:112, 22S:130-131, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: 22C:016, 22S:153-154, 22S:174, 22S:180-181, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: 22S:175 and 22S:182

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 complete the major department. Much of the work in the discipline 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 the department to confirm a four-year plan.

B.S. in Statistics

Courses must be taken in sequence, so students must begin work early.

Before the third semester begins: one or two courses in the major and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: four courses in the major and at least one-half of the semester hours required for graduation

Before the seventh semester begins: seven or eight courses in the major and at least three-quarters of the semester hours required for graduation

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

Honors

Qualified undergraduate students may earn a degree with honors.

To graduate with honors in statistics, a student must have a grade-point average of at least 3.40 in all departmental courses numbered 120 and above and a cumulative University of Iowa grade-point average of at least 3.40, and must complete three courses beyond those required for the B.S. degree, chosen from the following list:

22S:150 Regression, Time Series, and Forecasting 3 s.h.
22S:160 Introduction to Survival Analysis 3 s.h.
22S:176 Credibility and Loss Distributions 4 s.h.
22S:185 Asset and Liability Management 3 s.h.
22S:197 Readings in Statistics and/or Actuarial Science (honors project) 1-3 s.h.

An approved economics or finance course 3 s.h.

Students who choose to complete an honors project may earn up to 3 semester hours of credit in 22S:197 Readings in Statistics and/or Actuarial Science.

Students are responsible for making arrangements with a faculty member to supervise the honors project.

Minor

Students can earn a minor in statistics by taking 15 semester hours in statistics courses, 12 of which must be in courses taken at The University of Iowa numbered 22S:120 and above. The grade-point average in departmental courses must be at least 2.00. There is no minor in actuarial science.

Graduate Programs

Master of Science

Each M.S. candidate has a committee of three or four members, which is responsible for recommending action on the candidate’s degree. For nonthesis programs, the committee’s recommendation usually is based on two written examinations on topics covered in the required courses. For thesis programs, the committee’s final recommendation usually is based on an oral defense of the thesis, although it also may be based on a single written examination over the topics covered in the candidate’s program of study.

The department requires a grade-point average of at least 2.75 for courses that appear on the plan of study. This includes all courses used to meet degree requirements plus additional courses that are relevant to the student’s program. Specific course requirements for the M.S. programs follow.

M.S. in Statistics

The M.S. program prepares students for careers as professional statisticians or for entry into the Ph.D. program. It includes a solid foundation in statistical computing, regression analysis, experimental design, and mathematical statistics, plus electives in statistical methods and/or theory. Students have the opportunity to concentrate on theory, applications, or a combination of the two.

Students may choose to write a thesis, which substitutes for two courses. The thesis defense usually replaces the master’s final exam.

Nonthesis Program

The following course work is required for the nonthesis master’s degree in statistics.

Experience in a computer language such as C, C++, or FORTRAN is required.
22S:164-165 Applied Statistics I-II 7 s.h.
22S:166 Computing in Statistics 3 s.h.
22S:173 Statistical Consulting 3 s.h.
22S:193-94 Statistical Inference I-II 6 s.h.
22S:195 Probability and Stochastic Processes I 3 s.h.

At least four of these:
22S:135 Continuous Quality Improvement 3 s.h.
22S:138 Bayesian Statistics 3 s.h.
22S:156 Applied Time Series Analysis 3 s.h.
22S:161 Applied Multivariate Analysis 4 s.h.
22S:162 Applied Generalized Regression 3 s.h.
22S:163 Nonparametric Statistical Methods 3 s.h.
22S:167 Environmental and Spatial Statistics 3 s.h.
22S:168 Analysis and Design of Experiments II 3 s.h.
22S:190 Mathematical Methods for Statistics 3 s.h.
22S:196 Probability and Stochastic Processes II 3 s.h.

Any 200-level statistics course
An elective approved by the adviser
THESIS PROGRAM
The master’s thesis program requires the following course work. Experience in a computer language such as C, C+++, or FORTRAN is required.

22S:164-165 Applied Statistics I-II 7 s.h.
22S:166 Computing in Statistics 3 s.h.
22S:173 Statistical Consulting 3 s.h.
22S:191 Individual Study 6 s.h.
22S:193-194 Statistical Inference I-II 6 s.h.
22S:195 Probability and Stochastic Processes I 3 s.h.

At least two of these:
22S:135 Continuous Quality Improvement 3 s.h.
22S:138 Bayesian Statistics 3 s.h.
22S:156 Applied Time Series Analysis 3 s.h.
22S:161 Applied Multivariate Analysis 4 s.h.
22S:162 Applied Generalized Regression 3 s.h.
22S:163 Nonparametric Statistical Methods 3 s.h.
22S:167 Environmental and Spatial Statistics 3 s.h.
22S:168 Analysis and Design of Experiments II 3 s.h.
22S:190 Mathematical Methods for Statistics 3 s.h.
22S:196 Probability and Stochastic Processes II 3 s.h.

Any 200-level statistics course
An elective approved by the adviser

The typical thesis is a statistical presentation of the results of a meaningful research project in another field, or a study of the characteristics of a new statistical method. The thesis work is directed by a supervising professor. Students earn academic credit for thesis work by registering for 22S:191 Individual Study.

M.S. in Actuarial Science
This program prepares students for careers in the actuarial profession by emphasizing the theory that underlies risk processes and the application of this theory to practical problems of insurance pricing and management. The required course work helps the students prepare for the professional examinations administered by the Society of Actuaries and/or the Casualty Actuarial Society.

The master’s degree in actuarial science is available without thesis. Students must complete at least 37 semester hours of course work to earn the MS. The required courses are as follows.

22S:153-154 Mathematical Statistics I-II 6 s.h.
or 22S:193-194 Statistical Inference I-II (for well-prepared students) 6 s.h.
22S:174 Stochastic Process Models 3 s.h.
22S:175 Risk Theory 4 s.h.
22S:176 Credibility and Loss Distributions 4 s.h.
22S:180 Mathematics of Finance 3 s.h.
22S:181-82 Life Contingencies I-II 8 s.h.

At least three of these:
22S:150 Regression, Time Series, and Forecasting 3 s.h.
22S:160 Introduction to Survival Analysis 3 s.h.

22S:185 Asset and Liability Management 3 s.h.
An approved economics or finance course 3 s.h.
A relevant non-actuarial science graduate course approved by the student’s adviser

The course 06F:100 Introductory Financial Management may be included in the student’s plan of study, as long as a more advanced course, with 06F:100 as a prerequisite, is also included.

M.S. in Quality Management and Productivity
The Department of Statistics and Actuarial Science, the Department of Industrial Engineering, and the Department of Management Sciences jointly sponsor the M.S. in Quality Management and Productivity. This program prepares students to meet the quality management needs of industry, business, and government. Its focus is on training students to provide leadership in quality, flexibility, and innovation. For more information, see “Quality Management and Productivity” in the Graduate College section of the Catalog.

Doctor of Philosophy
The Ph.D. program prepares students for careers in research, applications, and teaching. Students choose one of four areas of concentration for their course work: biostatistics; probability/mathematical statistics; statistical modeling; and actuarial science/financial mathematics.

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.

Probability/mathematical statistics emphasizes a broad, solid foundation in techniques and underpinnings of mathematical statistics. Its focus on breadth and depth is intended to produce well-rounded, knowledgeable scholars. This concentration 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.

Statistical modeling 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 area of concentration 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 the modeling and analysis of data.

Actuarial science/financial mathematics emphasizes the theory of actuarial science, finance, and asset-liability management. It is excellent preparation for academic positions in universities that offer actuarial science programs or for positions in the insurance, pension, and financial industries.

Regardless of the area of concentration, students must complete a minimum of 72 semester hours of course work (including work done in the M.S. program). Students must pass comprehensive exams and write a dissertation. The Ph.D. program takes about three years to complete once the M.S. has been earned.

Course requirements for the Ph.D. in statistics are as follows.

CORE COURSES

22S:164-165 Applied Statistics I-II 7 s.h.
22S:166 Computing in Statistics 3 s.h.
22S:173 Statistical Consulting 3 s.h.
22S:185 Asset and Liability Management 3 s.h.
22S:195 Probability and Stochastic Processes I 3 s.h.
22S:203-204 Foundations of Probability I II 6 s.h.
22S:253-254 Advanced Inference I-II 6 s.h.
22S:255 Linear Models 4 s.h.
At least 2 s.h. of 22S:291, 223:293, or 223:295 (seminars)
At least 18 s.h. of 22S:299 Reading Research

CONCENTRATION AREA
Students take at least 4 courses in one of the following areas of concentration. At least two of these must be 200-level courses.

Biostatistics
22S:161 Applied Multivariate Analysis 4 s.h.
22S:167 Environmental and Spatial Statistics 3 s.h.
22S:220 Analysis of Categorical Data 3 s.h.
22S:225 Survival Data Analysis 3 s.h.
063:241 Statistical Methods in Epidemiology 3 s.h.
063:263 Statistical Genetics 3 s.h.
063:264 Longitudinal Data Analysis 3 s.h.

Probability/Mathematical Statistics
22S:196 Probability and Stochastic Processes II 3 s.h.
22S:235 Time Series Analysis 3 s.h.
22S:238 Bayesian Analysis 3 s.h.
22S:254 Multivariate Analysis 4 s.h.
22S:256 Empirical Processes with Applications 3 s.h.
22S:274 Martingales and Related Processes 3 s.h.

Statistical Modeling
22S:156 Applied Time Series Analysis 3 s.h.
22S:161 Applied Multivariate Analysis 4 s.h.
22S:162 Applied Generalized Regression 3 s.h.
22S:167 Environmental and Spatial Statistics 3 s.h.
22S:168 Analysis and Design of Experiments II 3 s.h.
22S:220 Analysis of Categorical Data 3 s.h.
22S:223 Time Series Analysis 3 s.h.
22S:238 Bayesian Analysis 3 s.h.
22S:248 Computer Intensive Statistics 3 s.h.
22S:257 Generalized Regression Models 3 s.h.

Actuarial Science/Financial Mathematics
06F:225 Finance Theory I 3 s.h.
06F:227 Finance Theory II 3 s.h.
22S:185 Asset and Liability Management 3 s.h.
22S:196 Probability and Stochastic Processes II 3 s.h.
22S:235 Time Series Analysis 3 s.h.
22S:274 Martingales and Related Processes 3 s.h.

In addition, each semester a graduate student registers for 6 or more semester hours, he or she must include at least one course of at least 2 semester hours offered by the Department of Statistics and Actuarial Science, excluding 22S:191, 22S:197, and 22S:299.

During the graduate program, students may take course work or seminars in other departments to achieve auxiliary goals of the doctoral program: to relate an area of specialization to other fields of knowledge, to acquire the ability to use electronic digital computing equipment, or to learn the language skills needed to read foreign scientific journals and respond in personal contacts with foreign scholars.

COMPREHENSIVE EXAM

Students take a comprehensive examination after completing most of the course work on their approved plan of study, typically during the third year of graduate study.

The comprehensive examination consists of a written core examination and an oral examination on statistical inference, linear models, and probability. These topics are generally covered in 22S:193-194-195, 22S:203, 22S:253, and 22S:255. Study guides for the core examination are available from the department.

A program that does not conform to the prescribed requirements but is of high quality may be approved by the department chair.

Financial Support

Limited funds are available to help support outstanding applicants. Fellowships, teaching assistantships, and research assistantships carry an attractive stipend plus resident tuition status for students who are appointed at least one-quarter time. In some cases, these awards are further enhanced by a full or partial tuition scholarship.

Students who wish to be considered for financial assistance for their third year in the program should request a Ph.D. candidacy review no later than the spring semester of their second year.

Facilities

The Department of Statistics and Actuarial Science is housed in Schaeffer Hall, adjacent to Old Capitol, a National Historic Landmark and the academic center of campus. The department operates two computer labs in Schaeffer Hall. One, which also is used as an electronic classroom, contains 30 IBM PCs. The second houses 18 high-end UNIX workstations. Students use these labs for both class work and research.

Statistical Consulting Center

Because statisticians often team with other scientists in research projects, it is important that students gain experience working in groups. The department provides that experience in the Statistical Consulting Center which offers assistance to members of the University community in planning experiments and carrying out the analysis of experimental data. Under faculty supervision, graduate students may participate in these activities as part of their training.

Although the majority of Statistical Consulting Center projects involve statistical problems arising in thesis research conducted by students in other departments, the center also seeks involvement in larger research projects and proposal writing.

Courses

Primarily for Undergraduates

Students may not receive credit for a Department of Statistics and Actuarial Science course numbered below 105 after receiving credit for one numbered above 105. Students may receive credit for only two of these courses: 22S:002, 22S:008, 22S:025 (same as 07P:025), or 22S:030. Credit for 22S:002 is given only if the course is taken before 22S:008, 22S:025 (same as 07P:025), or 22S:030. Students may receive credit for only one course from each of these pairs: 22S:030/035, 22S:101/102, and 22S:120/130.

22S:002 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 approaches to statistical evidence. GE: quantitative or formal reasoning. Prerequisite: 22M:001 or equivalent or consent of instructor.

22S:008 Statistics for Business 4 s.h.
Descriptive statistics, elementary probability, estimation and testing, regression, correlation; statistical computing packages. GE: quantitative or formal reasoning. Prerequisite: 22M:002.

22S:025 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. GE: quantitative or formal reasoning. Prerequisite: 22M:001 or equivalent. Same as 07P:025.

22S:029 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). Open only to first- and second-semester students.

22S:030 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. GE: quantitative or formal reasoning. Prerequisite: 22M:002.

22S:039 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
Descriptive statistics, exploratory data analysis, random variables, important discrete and continuous distributions, point and interval estimation, tests of hypotheses, regression; design of experiments, including factorial and fractional factorial designs. Prerequisite: 22M:028 or equivalent.

For Undergraduate and Graduate Students

22S:000 Cooperative Education Internship 0 s.h.

22S:101 Biostatistics 3 s.h.
Statistical methods primarily for research in health sciences and related fields; descriptive Statistics, estimation, tests of hypotheses. Prerequisite: 22M:001 or equivalent.

22S:102 Introduction to Statistical Methods 3 s.h.
Same as 07P:143.

22S:105 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. Prerequisite: 22M:002.

22S:112 Introduction to Actuarial Science 3 s.h.
Life and casualty insurance contrasted; deterministic approach to life contingencies; elementary risk analysis, collective risk model; simulation. Closely to students who have completed 22S:181. Offered spring semesters. Prerequisite: 22S:130.

22S:120 Probability and Statistics 4 s.h.
Models, discrete and continuous random variables and their distributions, estimation of parameters, testing statistical hypotheses. Prerequisite: 22M:026 or 22M:036 or 22M:046.

22S:130 Introduction to Mathematical Statistics I 3 s.h.
Descriptive statistics, probability, discrete and continuous distributions, sampling, sampling distributions. Prerequisite: 22M:026 or 22M:036 or 22M:046.

22S:131 Introduction to Mathematical Statistics II 3 s.h.
Estimation, testing statistical hypotheses, linear models, multivariate distributions, nonparametric methods. Prerequisite: 22S:130.

22S:133 Quality Control 3 s.h.
Prerequisite: 22S:039. Same as 056:162.

22S:135 Continuous Quality Improvement 3 s.h.
Course for upper-level undergraduate and MS students dealing with Deming’s philosophy of Quality Improvement; Statistical Process Control, including Shewhart control charts, CUSUM, capability indices, and acceptance sampling; introduction to basic designs of experiments including Taguchi methods; communication skill development through oral and written reports. Prerequisite: 22S:120 or 22S:131 or equivalent. Same as 136:135.

22S:138 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. Prerequisite: 22S:120 or equivalent. Same as 07P:148.

22S:140 Design and Analysis of Experiments in Biomedical Science 3 s.h.
Prerequisite: 171:161. Same as 171:162.

22S:148 Intermediate Statistical Methods 3 s.h.
Prerequisite: 22S:102 or equivalent. Same as 07P:243.

22S:150 Regression, Time Series, and Forecasting 3 s.h.
Regression analysis, forecasting, time series methods; use of statistical computing packages. Prerequisite: 22S:120 or 22S:131 or 22S:254.

22S:152 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 SAS software. Prerequisite: 22S:030 or 22S:039 or 22S:120 or equivalent. Same as 056:176.

22S:153 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 techniques for sums, convergence in distribution, convergence in probability, central limit theorem. Prerequisites: 22M:027 and 22M:028, or equivalents.

22S:154 Mathematical Statistics II 3 s.h.
22S:156 Applied Time Series Analysis 3 s.h.
22S:172 Topics in Statistics 3 s.h.
22S:168 Analysis and Design of Experiments 3 s.h.
22S:173 Statistical Consulting 3 s.h.
22S:167 Environmental and Spatial Statistics 3 s.h.
22S:166 Computing in Statistics 3 s.h.
22S:171 4 s.h.
22S:159 Design of Experiments 3 s.h.

Primarily for Graduate Students

22S:203 Foundations of Probability I 3 s.h.
22S:204 Foundations of Probability II 3 s.h.
22S:210 Analysis of Categorical Data 3 s.h.

Consent of instructor required.

22S:225 Survival Data Analysis 3 s.h.
22S:235 Time Series Analysis 3 s.h.
22S:238 Bayesian Analysis 3 s.h.
22S:239 Survival Analysis 3 s.h.
22S:248 Computer Intensive Statistics 3 s.h.
22S:253 Advanced Inferential 3 s.h.
22S:254 Advanced Inferential II 3 s.h.
22S:255 Linear Models 4 s.h.
22S:256 Multivariate Analysis 4 s.h.
22S:257 Generalized Regression Models 3 s.h.
22S:258 Multivariable models; correlation, regression, polynomial models.
22S:259 Multivariable models; correlation, regression, polynomial models.
22S:260 Multivariable models; correlation, regression, polynomial models.
22S:261 Multivariable models; correlation, regression, polynomial models.
22S:262 Multivariable models; correlation, regression, polynomial models.
22S:263 Multivariable models; correlation, regression, polynomial models.
22S:264 Multivariable models; correlation, regression, polynomial models.
22S:265 Multivariable models; correlation, regression, polynomial models.
22S:266 Multivariable models; correlation, regression, polynomial models.
22S:267 Multivariable models; correlation, regression, polynomial models.
22S:268 Multivariable models; correlation, regression, polynomial models.
22S:269 Multivariable models; correlation, regression, polynomial models.
22S:270 Multivariable models; correlation, regression, polynomial models.
22S:271 Multivariable models; correlation, regression, polynomial models.
22S:272 Multivariable models; correlation, regression, polynomial models.
22S:273 Multivariable models; correlation, regression, polynomial models.
22S:274 Multivariable models; correlation, regression, polynomial models.
22S:275 Multivariable models; correlation, regression, polynomial models.
22S:276 Multivariable models; correlation, regression, polynomial models.
22S:277 Multivariable models; correlation, regression, polynomial models.
22S:278 Multivariable models; correlation, regression, polynomial models.
THEATRE ARTS

Chair: Alan MacVey
Professors: Eric Forsythe, Alan MacVey, Jon Whittmore
Professors emeriti: Cosmo A. Catalano, David Schaal, David Thayer
Associate professors: Lyce Arthur, Art Borreca, John Cameron, Merrel Darle Clibb, Alison Ford, Kim Marr
Assistant professor: Brvon Winn
Adjunct assistant professor: Carol MacVey
Lecturers: Meredith Alexander, Ralph Hall, Judy Leigh-Johnson
Undergraduate degree: B.A. in Theatre Arts
Undergraduate nondegree program: minor in Theatre Arts
Graduate degree: M.F.A. in Theatre Arts
Web site: http://www.uiowa.edu/theatre

The Department of Theatre Arts, the Department of Dance, and the School of Music belong to the University's Division of Performing Arts. For information about the division, see "Division of Performing Arts" in this section of the Catalog.

Undergraduate Program

Bachelor of Arts

The undergraduate major in theatre arts is based on the belief that the best way to develop future artists is to expose them to rigorous professional practice within the framework of a liberal arts education. Iowa theatre arts students take workshop courses in acting, directing, design, technical theater, and playwriting and complement them with classes in dramatic literature, history, and criticism. Students also are actively encouraged to explore a range of courses throughout the University. Two dozen productions each year provide additional opportunities to learn the theater craft and to develop a personal artistic vision.

The department also is interested in educating students who plan to enter other fields in which understanding of the arts and experience with theater skills are useful. See "Opportunities for Nonmajors" in this section of the Catalog.

Degree Requirements

Requirements for the B.A. in theatre arts have changed. Students who declare the major on or after the first day of fall semester 2000 must complete the new requirements. Students who declare the major before that date may choose to complete either the old requirements (see the 1998-2000 General Catalog) or the new requirements. Students who choose the old requirements must complete the major and graduate by August 2004.

The following courses compose the basic experience for all undergraduate theatre arts majors. Registration in some courses required for the major requires special permission. Contact the Department of Theatre Arts for more information.

MINIMUM REQUIREMENTS

Students must maintain a grade-point average of at least 2.00 for all courses taken in the major.

The following course work is required (total of 33 semester hours).

Many of these courses have prerequisites, which students must complete before they register in these.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>049:025</td>
<td>Acting I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:043</td>
<td>Elements of Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:044</td>
<td>Theatre Crafts</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:060</td>
<td>Playscript Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:112</td>
<td>History of Theatre and Drama I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>049:113</td>
<td>History of Theatre and Drama II</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>


Students who complete 049:002 or 049:003 before declaring a major in theatre arts must consult the undergraduate director before registering in 049: 112 or 049: 113.

Four semester hours from these (all may be repeated):

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>049:045</td>
<td>Production: Run Crew</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>049:046</td>
<td>Production: Crew Chief</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:047</td>
<td>Production: Construction</td>
<td>1-2 s.h.</td>
</tr>
</tbody>
</table>

One of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>049:125</td>
<td>Voice for the Actor</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:127</td>
<td>Theatre Movement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:132</td>
<td>Stage Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:133</td>
<td>Theatre Design I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:134</td>
<td>Scene Design I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:135</td>
<td>Costume Design I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:136</td>
<td>Lighting Design I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:140</td>
<td>Sound Design for the Theatre</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:147</td>
<td>Technical Production I</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

One of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>049:130</td>
<td>Directing I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:172</td>
<td>Senior Seminar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>049:194</td>
<td>Dramaturgy</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

An upper-level playwriting course (049:063 or above) 3 s.h.

Students should complete 049:060 Playscript Analysis as soon as possible; it is prerequisite to several 100-level courses. Courses 049:025, 049:043, 049:060, and 049:112 or 049:113 normally are completed within the first three semesters of study in the major. Theatre Crafts (049:044) is prerequisite to all production courses; 049:045 Production: Run Crew is prerequisite to 049:046 Production: Crew Chief and 049:047 Production: Construction.

ELECTIVES

Majors may count up to 17 semester hours earned in theatre arts elective courses (prefix 049) toward the degree. Credit earned in theatre arts courses-including the minimum requirements and electives-may not exceed 50 semester hours. Majors are encouraged to choose electives in the arts, humanities, and social sciences.

AUDITIONS

All productions are open to anyone who wishes to audition. Each play is cast on the basis of who is best suited to the available roles; no preference is given to graduate or upper-level students.

Theatre arts majors are encouraged to audition in general auditions at the beginning of the fall semester. They normally present a four-minute audition consisting of two contrasting pieces. From this audition, call-back lists are posted for major productions offered during the first semester.

Materials and information about the general auditions are available from the theatre arts office in August. Notices of auditions for all subsequent productions are posted on the department's call board.

Transfer Students

Students who transfer to The University of Iowa from other accredited two- or four-year institutions must demonstrate that they have successfully completed course work equivalent to the basic requirements of the theatre arts department and the University before they may undertake advanced-level electives. Consult with the director of undergraduate studies for further information.

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: at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: three courses in the major (chosen from 049:025, 049:043, 049:060, 049:112, and 049:113) and at least one-half of the semester hours required for graduation

Before the seventh semester begins: three more courses in the major and an additional semester of production credit

Before the eighth semester begins: two more courses in the major and another semester of production credit

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

Honors

Senior theatre arts majors who are members of the University Honors Program, have earned a 3.20 grade-point average in the major, and have approval from the theatre arts faculty, may undertake an honors project. Projects may be analytical or creative or an appropriate combination of the two. Projects ordinarily require an oral presentation or performance for designated faculty members as well as a research and writing component, which is due upon project's completion.

Students who wish to complete an honors project meet with the departmental honors adviser, who helps them find an appropriate adviser, prepare and gain acceptance for a written proposal, present the work, and evaluate the outcome.
Theatre arts majors who are members of the University Honors Program may take honors courses in theatre arts. Courses in the major can be designated as honors courses with permission of the faculty member who teaches the course, the department, and the University Honors Program. For more information, contact the University Honors Program.

Minor
A minor in theatre arts requires 15 semester hours of course work in theatre arts, excluding 049:001, 049:002, and 049:003, with a grade-point average of at least 2.00. At least 12 of these semester hours must be taken at The University of Iowa in advanced courses. Advanced courses accepted by the department include 049:021, 049:025, 049:043, 049:044, 049:060, 049:062, 049:063, and any course numbered 049:100 and above.

Opportunities for Nonmajors
Students in other majors who have an interest in the theatre arts may take courses in the department. Courses open to nonmajors are 049:001 Art of the Theatre, 049:002 Theatre and Society: Ancients and Moderns, 049:003 Theatre and Society: Romantics and Rebels, 049:020 Basic Acting, 049:021 Basic Acting II, 049:042 Clothing as Nonverbal Communication, 049:062 Basic Playwriting, 049:072 Shakespeare, 049:190 Black Action Theatre. Nonmajors with backgrounds in the fine arts may take 049:134 Scene Design I, 049:135 Costume Design I, and 049:136 Lighting Design I, with consent of instructor. Other courses may be open to nonmajors with consent of the Instructor.

Graduate Program

Master of Fine Arts
The M.F.A. programs are dedicated to the creative development of theater 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 theater in society. Interactions among the various theater 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 theater. Students who demonstrate exceptional ability in acting, directing, dramaturgy, playwriting, design, or production stage management may apply for admission to the program of study and production leading to the M.F.A. Admission is based on 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.

Degree Requirements
Students normally must complete six semesters in residence (internships may be substituted), the requisite number of graduate semester hours in the individual program, a grade-point average of at least 3.00, and a record of substantial creative work of high quality. They also must make normal progress toward completion of the degree requirements to remain in the program. Normal progress is defined as maintenance of a 3.00 grade-point average in all course work within the primary area of concentration and 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. programs.

Facilities
The University of Iowa has one of the finest educational theater complexes in the country. The Theatre Building offers four theaters and up-to-date facilities for classroom, laboratory, shop, and performance work.

The E.C. Mabie Theatre, a continental-style, 477-seat proscenium playhouse, is one of the finest theaters 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 theater dedicated primarily to the production of new and experimental works. The flexible studio theater 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.

Productions
The Theatre Arts Department presents around 25 public productions each year. These include a subscription series of four or five plays, a festival of six new works by students, Iowa Summer Rep, 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. Graduates, undergraduates, faculty, and visiting guest artists work together on large and small projects throughout the year and in a special summer repertory season.

Courses

Primarily for Undergraduates

049:000 Cooperative Education Internship 0 s.h.
049:001 Art of the Theatre 3 s.h.
Fundamentals of acting, playwriting, directing. GE: fine arts or humanities.
049:002 Theatre and Society: Ancients and Moderns 4 s.h.
Play readings, performances examined in social context of ancient Egypt; classical Greece, Rome, India, and Japan; and medieval and early modern Europe. GE: fine arts or historical perspectives.
049:003 Theatre and Society: Romantics and Rebels 4 s.h.
Play readings, performances examined in social context of revolutionary and modern Europe and postwar United States. GE: fine arts or historical perspectives.
049:020 Basic Acting 3 s.h.
Concentration, relaxation, imagination, observation, communication, sensory awareness; development of theatrical creativity through objectives, obstacles, action, conflict, spontaneity; development of a scene from scripts. Open only to non-theatre arts majors. GE: fine arts or humanities.
049:021 Basic Acting II 3 s.h.
Continuation of 049:020; emphasis on development of scenes. GE: fine arts or humanities.
049:029 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). Open only to first- and second-semester students.
049:042 Clothing as Nonverbal Communication 3 s.h.
Clothing communicates culture, gender, self-concept, age, occupation, values, status, sexuality, clothing for international business, children, the elderly; fashion theory. Prerequisite: 2.50 grade-point average. Same as 36C:051.
049:043 Elements of Design 3 s.h.
Development of visual literacy; manipulation of line, shape, color, value, texture, form. Development of designs for theater through techniques explored in class.
049:044 Theatre Crafts 3 s.h.
Backstage operations: wardrobe, scenery, properties, lighting, sound. Prerequisite: theatre arts major.
049:045 Production: Run Crew 1-2 s.h.
Run crew member in scenery, props, or costumes; or light board, sound board, or follow spot operator; for mainstage production. Prerequisite: 049:044 or 137:050. Same as 137:051.
049:046 Production: Crew Chief 2 s.h.
Master electrician, stage manager, assistant stage manager, wardrobe master, production carpenter, or properties assistant for single production. Prerequisites: 049:044 and 049:045.
049:047 Production: Construction 1-2 s.h.
Production work in scenery, costume, or electrics shop. Consent of instructor required. Prerequisites: 049:044 and 049:045.
049:080 Playscript Analysis 3 s.h.
Develop basic tools for the dramaturgical analysis of play scrips as bases for performed events; explore dramatic genres and structures from classical Greece to the present. Aristotelian and non-Aristotelian approaches to the dramatic text; the relations between textual analysis and theatrical conceptualization, and between formal and ideological analysis; examine theatrical collaborators’ differing perspectives on the play script in the creation of performances.
049:082 Basic Playwriting 3 s.h.
Writing exercises leading to development of a one-act play. GE: fine arts or humanities.
049:083 Basic Playwriting II 3 s.h.
Continuation of 049:082; which is prerequisite; emphasis on demands of writing one-act play.
049:072 Shakespeare 3 s.h.
Same as 008:072.
For Undergraduate and Graduate Students

Acting and Directing

049:025 Acting I 3 s.h.
Direct the creative, imagination, and openness through exercises to engage mind, body, and voice in theatrical play and scene work. Consent of instructor required.

049:026 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.

049:107 Drama Therapy 3 s.h.
Basic principles and practices of drama therapy; exercises, theory, and technique used to foster understanding of dramatic processes and to encourage psychological growth and change.

049:108 Dance Kinesiology 3 s.h.
Movement analysis. Same as 117:147.

049:109 Introduction to Arts Management 3 s.h.
Historic and contemporary theater management; theater structures and operations; emphasis on not-for-profit organizations, unions, regional theater.

049:120 Acting II 3 s.h.
Extension of work begun in 049:025; scene study, with focus on contemporary realism, development of collaborative dynamic. Prerequisites: 049:025, and 049:125 or 049:127.

049:121 Advanced Scene Study 3 s.h.
Development of characterization, process; performance of difficult scenes. Audition and interview required. Prerequisites: 049:120, and 049:125 or 049:127.

049:122 Acting with Verse 3 s.h.
Approaches to poetic material; emphasis on Shakespeare; contemporary scenes written in poetic or abstract styles. Consent of instructor required. Prerequisites: 049:120 and 049:125.

049:123 Alternative Approaches to Acting 3 s.h.
Methods of acting expression that differ from standard realistic/cognitive approach: acting on impulse, internal/external “mask,” story theater, working within and against type, use of psycho-physical techniques. Consent of instructor required. Prerequisites: 049:120 and 049:127.

049:124 Acting: Special Topics 3 s.h.
Specialized study in a specific aspect or theory of acting. Consent of instructor required.

049:125 Voice for the Actor 3 s.h.
Progressive development of voice and speech for theater; physical awareness, relaxation, breathing, freeing the sound channel, resonance, articulation; application of voice work through prose, poetry, text. Prerequisite: 049:025.

049:126 Voice, Text, and the Actor 3 s.h.
Vocal study of prose/poetry/dramatic text to achieve connection to language (emotion, images, sensuality connected to a fully released voice); emphasis on Shakespearean verse. Prerequisite: 049:125.

049:127 Theatre Movement 3 s.h.
The body as a tool for dramatic expression; basic principles and practices of stage movement; approaches to physical technique, mime/movement studies, ensemble performance projects. Open only to theme arts majors.

049:128 Movement Styles 3 s.h.
Intensive study of a selected movement style, such as mask, clowning, melodrama, mime, commedia dell’arte, stage combat; presentation of student projects. May be repeated. Prerequisite: 049:127 or consent of instructor.

049:129 Stage Combat 3 s.h.
Principles, safety, techniques of nonviolent stage combat for actor, director, choreographer.

049:130 Directing I 3 s.h.
Basic elements of stage direction; exercises in composition, emphasis, movement, rhythm, directorial analysis, directing role in production process; short scenes, projects, papers. Consent of instructor required. Prerequisites: 049:025, 049:043, and 049:960.

049:131 Directing II 3 s.h.
Continuation of 049:130, which is prerequisite; practical direction of theater projects. Consent of instructor required.

049:132 Stage Management 3 s.h.
Duties and procedures of stage management; focus on development of production from preparatory work through performance; examine role of stage managers. Consent of instructor required. Prerequisite: 049:044.

049:200 Stage Management: Special Topics 3 s.h.
Topics in stage management, arts production, and their professional practices. Open only three times. Prerequisite: 049:133 or consent of instructor.

049:220 Advanced Acting 3 s.h.
Prerequisites: 049:120. Preprofessional training; may include psycho-physical training in impulse, openness and the “mask,” individual and group dynamics, improvisation, repetition, characterization and scenework, Shakespeare and style, on-camera, development of professional work habits and skills, audition and interview. Consent of instructor required.

049:225 Vocal Technique 3 s.h.
Prerequisites: 049:120. Audition and interview required. Same as 049:130.

049:227 Movement Technique 3 s.h.
Prerequisites: 049:025. Fundamental principles and practices required for physical acting technique; basic stage movement, stage combat, mime technique, Leo-berg based improvisation; a new work project. Open only to graduate acting majors.

049:228 Movement: Special Topics 3 s.h.
Stage movement.

049:230 Director’s Seminar 1-3 s.h.
Prerequisites: 049:120 and 049:127.

049:233 Theatre Design I 3 s.h.
Practice and techniques of stage management. May be repeated. Graduate standing or consent of instructor required.

Design

049:133 Theatre Design I 3 s.h.
The process of theater design; how to research, conceptualize, and design problems; production of design problems. Consent of instructor required. Prerequisites: 049:120 and 049:127.

049:134 Scene Design I 3 s.h.
The development of theatrical scenery; how to research, conceptualize, and express ideas through sketches, models, simple drafting. Consent of instructor required. Prerequisite: 049:043. Same as 01P:134.

049:135 Costume Design I 3 s.h.
The development of theater costumes; how to research, conceptualize, and express ideas through rendering and swatching; historical orientation. Consent of instructor required. Prerequisite: 049:135.

049:136 Lighting Design I 3 s.h.
How to research, conceptualize, and express ideas through light plots, other design paper; and theater lighting design projects. Consent of instructor required. Prerequisite: 049:135.

049:137 Scene Design II 3 s.h.
Design and execution of increasingly complex projects in a variety of formats, including refined perspective sketching, color models, property drawing, more detailed drafting. Consent of instructor required. Prerequisites: 049:060 and 049:134.

049:138 Costume Design II 3 s.h.
Research, conceptual, and character analysis skills; color, material, and volume are explored as expression of different styles. Consent of instructor required. Prerequisites: 049:060 and 049:135.

049:139 Lighting Design II 3 s.h.
Expands upon styles of production, and introduces new production venues; develop skills through increasing complex light plots and more precise paperwork. Consent of instructor required. Prerequisites: 049:060 and 049:136.

049:140 Sound Design for the Theatre 3 s.h.
Methods of sound recording, editing, and reinforcement; how to conceptualize and express ideas for theater production. Consent of instructor required. Prerequisite: 049:060.

049:141 History of Fashion and Decor 3 s.h.
Historical and contemporary fashion and design trends in relation to theater design. Consent of instructor required.

049:142 Textile Science 3 s.h.
Studies fabrics, textiles, dyeing, and printing, with particular emphasis on the textile industry. Consent of instructor required.

049:143 Sound Design II 3 s.h.
Sound design for theater using digital analog equipment; concept development, design execution; focus on computer-assisted design skills, design presentation, advanced editing techniques. Consent of instructor required.

049:144 Drafting for Designers I 3 s.h.
Prerequisites: 049:133. Tools and techniques of drafting for theater; draft each design project. Consent of instructor required.

049:145 Drafting for Designers II 3 s.h.
Two-dimensional computer drafting with Auto C.A.D. explored through principles of theater drafting; basic functions and commands, editing skills. Consent of instructor required.

049:146 Drawing and Rendering for the Theatre 3 s.h.
Consent of instructor required. Pre- or corequisite: 049:043 admission to M.F.A. program.

049:147 Technical Production I 3 s.h.
Preprofessional training; may include psycho-physical training in stage combat; historical orientation. Prerequisite: 049:133.

049:151 Scenic Art for Designers 3 s.h.
Prerequisites: 049:133. Technical aspects of scene painting; classical rivero’s Eve style. Consent of instructor required.

049:152 Costume Crafts I 3 s.h.
Patter drafting, draping, basic costume construction techniques. Consent of instructor required.

049:153 Costume Crafts II 3 s.h.
Supporting crafts used in costume building; projects using techniques such as simple millenary, mask making, dyeing, fabric painting, leatherwork, and so forth. Consent of instructor required. Prerequisite: 049:152.

049:156 Stage Makeup 2 s.h.
Basic techniques in design and application; develop analytical, research, and manual skills such as corrective makeup, aging, likeness makeup, simple prosthetics. Consent of instructor required.

049:157 Life Drawing II 3 s.h.
Same as 01F:105.

049:58 Environmental Design I 3 s.h.
Same as 01D:137.

049:59 Introduction to 3-D Computer Modeling 3 s.h.
Theoretical and practical aspects of computer-assisted three-dimensional modeling and animation, using supercomputing graphics workstation; rendering scenes, sharing, key frame animation. Consent of instructor required. Same as 050:152.

049:160 Intermediate 3-D Computer Modeling 3 s.h.
Application of concepts and techniques learned in 049:159; additional techniques for using modeling tools in practical situations. Prerequisite: 049:159. Same as 050:153.

049:161 Advanced 3-D Computer Modeling 3 s.h.
Prerequisites: 049:159 or consent of instructor. Same as 050:154.

049:237 Scene Design III 3 s.h.
Prerequisites: 049:160. Conceptual, and character analysis skills; color, material, and volume are explored as expression of various design elements. Consent of instructor required. Same as 050:153.

049:238 Costume Design III 3 s.h.
Prerequisites: 049:160. Conceptual, and character analysis skills; color, material, and volume are explored as expression of various design elements. Consent of instructor required. Same as 050:153.
049:239 Lighting Design III 3 s.h.
Advanced projects in venues such as dance, opera, industrials; preparation of lighting designs for production. Prerequisite: 049:139.

049:240 Scene Design IV 3 s.h.
Advanced projects; problem solving and techniques; development of clarity and speed in conceptualizing and documenting designs. Consent of instructor required.

049:241 Costume Design IV 3 s.h.
Analytical and studio skills for advanced projects in widening venues, including musical, dance, opera. Consent of instructor required.

049:242 Lighting Design IV 3 s.h.
Advanced projects in a variety of venues; development of clarity in concepts and design documentation. Consent of instructor required.

049:243 Scene Design V 3 s.h.
Portfolio development; collaborative. Consent of instructor required.

049:244 Costume Design V 3 s.h.
Portfolio development; collaborative. Consent of instructor required.

049:245 Lighting Design V 3 s.h.
Portfolio development; collaborative. Consent of instructor required.

049:249 Production Management 3 s.h.
Organization and supervision of theatrical productions; resources, procedures for successfully mounting theatrical production or season; personnel, equipment, facility and budget management, scheduling, communication.

049:251 Internship in Design 1-6 s.h.
Experience as designer or assistant designer with a professional theater, dance, or opera company or with a professional design studio. Open only to M.F.A. students in theater design. Consent of instructor required.

Playwriting

049:165 Advanced Playwriting 3 s.h.
Continuation of 049:063; original student writing; extensive rewriting, play finishing; playscipts of contemporary writers. Consent of instructor required.

049:173 Guest Seminar 3 s.h.
Consent of instructor required.

049:269 Playwrights Workshop 3 s.h.
Works by Iowa Playwrights Workshop members. Consent of instructor required.

049:270 Special Topics in Playwriting 3 s.h.
Consent of instructor required.

049:271 Orientation to Collaboration 1 s.h.
Strategies for working collaboratively; viewpoints of faculty members from acting, directing, design, playwriting, dramaturgy, and stage management. Open only to M.F.A. students in theatre arts.

049:272 The Collaborative Process 3 s.h.
Development of new plays, collaboratively created works. Consent of instructor required.

History, literature, Dramaturgy

049:112 History of Theatre and Drama I 4 s.h.
Major developments in Anglo-European, Indian, Asian, African theater and drama 3000 B.C.E. to C.E. 1700; sociopolitical, economic, cultural circumstances of original productions. GE: fine arts or historical perspectives. Offered fall semesters. Prerequisite: 049:060.

049:113 History of Theatre and Drama II 4 s.h.
Continuation of 049:112 (1700 to 1960); revolutionary and modern European theater, culturally diverse postwar U.S. theater. GE: fine arts or historical perspectives. Offered spring semesters. Prerequisite: 049:060.

049:114 Contemporary Theatre and Drama 3 s.h.
Major developments in contemporary drama, theater and performance since 1960. In contexts of Western European and “North American socioculture and theatrical history; representative plays and theatrical works in light of their modern and postmodern aesthetic practices and ideologies. GE: fine arts or humanities. Same as 008:184.

049:116 Dramatic Theory 3 s.h.
Theoretical questions of interest to dramatists and philosophers in western and non-western traditions; metaphysics of play; theories of character, psyche, and self; narrative and non-narrative dramatic forms. Prerequisites: 049:060, 049:112, and 049:113.

049:117 American Drama Since 1945 3 s.h.
Same as 008:197.

049:118 American Women Playwrights: 19th and 20th Century 3 s.h.
How women in the United States have expressed themselves in the theater for more than two centuries; diversity of voices examined through works by African American, Asian American, Latina, Native American, European American and lesbian playwrights; female-authored drama and theatrical production in relation to concurrent male-authored traditions and to larger socioeconomic, political, cultural phenomena. GE: fine arts or humanities.

049:119 Drama of the Spirit 3 s.h.
Western and non-western dramatic texts that enact journeys of the human spirit; textual analysis, consideration of the nature of spirit and the constitution of dramatic form. Prerequisites: 049:060, 049:112, and 049:113.

049:180 Greek Drama in Translation 3 s.h.
GE: fine arts or humanities. Same as 014:108.

049:181 Medieval Drama same as 008:144.

049:182 Shakespeare 3 s.h.
hf. as 008:122.

049:183 Shakespeare: Selected Plays 3 s.h.
Same as 008:165.

049:184 English Renaissance Drama same as 002:245.

049:185 Restoration Drama 3 s.h.
Same as 008:146.

049:186 Modern Drama: Ibsen to Shaw 3 s.h.
Same as 008:148.

049:188 Contemporary British Drama 3 s.h.
Same as 008:155.

049:190 Black Action Theatre 3 s.h.
Introduction to production; influential African American playwrights and material. Same as 129:175.

049:191 Advanced Black Action Theatre 3 s.h.
Development of theater techniques and methods through research, performance, production work; presentation of Black Action Theatre productions. Consent of instructor required. Same as 129:191.

049:192 African American Drama 3 s.h.
Survey of influential plays by African American playwrights from 1858 to present, through historical and theatrical reading, research, panel discussion, and viewing performances; relationship to theatrical and cultural communities. Same as 008:154, 129:180.

049:193 Studies in Drama 3 s.h.
Same as 008:167.

049:194 Dramaturgy 3 s.h.
Theory, practice: history in Europe and the United States; relationship to dramatic criticism; practical experience in critical writing, play analysis, dramaturgical research, conceptualization of productions, script writing and adaptation; season planning: evaluation, advocacy, and development of new plays; audience relations and education. Consent of instructor required. Prerequisite: 049:060.

049:213 Shakespeare same as 008:235.

049:215 Theatrical Analysis: Classical/Romantic 3 s.h.
Representative plays from the Classical to the Romantic periods, in historical context of their original productions; contemporary production potential. Open only to M.F.A. students in theatre arts.

049:216 Theatrical Analysis: Modern 3 s.h.
Questions of dramatic form and content examined in-depth through close readings of modern plays.

049:217 Theatrical Analysis: Post-Modern 3 s.h.
Diverse “postmodern” traditions, with emphasis on theatrical form and performance theory.

049:261 History of Criticism Plato to 1700 3 s.h.
Same as 008:261, 014:261, 048:261.

049:262 History of Criticism 1700-Present 3 s.h.
Same as 008:262, 048:262.

049:264 Dramaturgy Seminar 2-4 s.h.
Supervision and analysis of production dramaturgy projects and of collaboration among dramaturgs, directors, playwrights, designers. Consent of instructor required.

Workshops, Performances, Special Studies

049:009 Workshop in Theatre Arts 2 s.h.
Improvination, theater games, scene study, acting style; production or scene presentations. Two-week workshop. Offered summer sessions. Open only to high school students.

049:102 Workshop in the Teaching of Acting 2 s.h.
Techniques: improvisation, theater games, creativity exercises, analysis, group dynamics.

049:104 Workshop in Stage Directing: An Introduction 2 s.h.
Theory and practice of stage direction; script analysis for production, techniques for work with actors and designers. Two-week workshop.

049:115 London Performance Study 3 s.h.
Classes and performances in London Theatre. Same as 008:129.

049:172 Senior Seminar 3 s.h.
Collaborative methods for the theatre. Open only to senior theme arts maps.

049:196 Projects in Theatre Consent of instructor required.

049:197 Honors Theatre Arts 3 s.h.
Writers, directors, actors develop andproduce a new work for film or television.

049:199 Independent Study 3 s.h.

049:297 M.F.A. Production Assignments in all aspects of play production. Consent of instructor required.

THIRD WORLD DEVELOPMENT SUPPORT

Faculty members and students in the College of Liberal Arts participate in the Third World Development Support Program. For information about the program, see the Graduate College section of the Catalog.

TRANSPORTATION STUDIES

Faculty members and students in the College of Liberal Arts participate in the Transportation Studies Program. For information about the program, see the Graduate College section of the Catalog.

URBAN AND REGIONAL PLANNING

Faculty members and students in the College of Liberal Arts participate in the Urban and Regional Planning Program. For information about the program, see the Graduate College section of the Catalog.
Women's Studies

Women's Studies

Chair: Ellen Lewin
Professors: Susan Birrell (Health, Leisure, and Sport Studies/Women's Studies), Ellen Lewin (Women's Studies/Anthropology), Margaret Wolf (Anthropology/Women's Studies)
Associate professors: Florence Babb (Anthropology/Women's Studies), Anne Donadey (Film and Comparative Literature/Women's Studies), Rosamaria Scullion (French and Italian/Women's Studies)
Assistant professors: Melissa Deen (Rhetoric/Women's Studies), Johanna Schoen (History/Women's Studies), Joel Stillman
Affiliated faculty: Constance A. Berman (History), Barbara Bischocker (Rhetoric), Sharon Block (History), Florence Boos (English), Patricia T. Cain (Law), Diana F. Cates (Religion), Jane Desmond (American Studies), Carolyn Stewart Dyer (Journalism and Mass Communication), Barbara Ecker (English), Michelle Elison (Nursing), Mary Lou Emery (English), Sarah Farmer (History), Jennifer Glass (Sociology), Sabine Golz (German/Cinema and Comparative Literature), Laura Graham (Anthropology), Sarah Hanley (History), Nancy R. Hauserman (Management and Organizations), Karen Heimer (Sociology), Kathleen F. Janu (Health, Leisure, and Sport Studies), Kathleen Kanter (History), Linda Kerber (History), Joni Kinsley (Art and Art History), Kevin Kopelson (English), J. Kenneth Kuntz (Religion), Sue A. Lafky (Journalism), Kathleen Janz (Health, Leisure, and Sport Studies), Kathleen Kosters (History), Linda Kerber (History), Joni Kinsley (Art and Art History), Kevin Kopelson (English), J. Kenneth Kuntz (Religion), Sue A. Lafky (Journalism and Mass Communication), Susan Lawrence (History), Jean C. Love (Law), Tonglin Lu (Asian Languages and Literature), Heather I. MacDonald (Urban and Regional Planning), Margaret B. McDowell (Rhetoric, emeritus), Teresa Manguin (English), Kim Marra (Theatre Arts), Adalade Morris (English), Kathleen Newman (Spanish and Portuguese), Rita Noonan (Sociology), Carina Parratt (Health, Leisure, and Sport Studies), Lauren Rabinozit (American Studies/Cinema and Comparative Literature), Catherine O. Ringer (Linguistics), Rebecca S. Roberts (Geography), Adriana Mendez Rodenas (Spanish and Portuguese), Leslie Schwalm (History), Robin Simon (Sociology), Bonnie Slattum (Health, Leisure, and Sport Studies), Claire Sponsler (English), Bonnie Sunstein (Education), Diana Velez (Spanish and Portuguese), Mary Whelan (Anthropology), Adrian Wing (Law), Doris Witt (English)

Undergraduate nondegree program: minor in Women's Studies
Graduate degree: Ph.D. in Women's Studies
Web site: http://www.uiowa.edu/-women

Women's studies is a multidisciplinary department focusing on the study of women in culture, society, history, and literature. Its major goal is to bring to the University community new research on women and gender-research frequently overlooked by traditional disciplines. By taking courses through many departments, students become acquainted with feminist scholarship and its methodologies in the humanities and the social sciences. These courses may be used to establish a field of concentration within women's studies, or they may be applied to majors in other disciplines.

Undergraduate Study

Undergraduates interested in women's studies may develop programs of study in relation to course work in a major, as part of an area of concentration within the Bachelor of Arts in interdepartmental studies, as a minor, or as a set of electives to satisfy general interest.

It is strongly recommended that students contemplating a concentration in women's studies take 131:101 Introduction to Women's Studies.

Minor

Undergraduate students may complete a minor in women's studies by taking 15 semester hours of courses associated with the department, including at least 12 semester hours taken at The University of Iowa in 100-level courses; they must maintain a grade-point average of at least 2.00 in these courses.

It is strongly recommended that students minoring in women's studies take 131:101 Introduction to Women's Studies and 131:151 Feminist Theory.

Since women's studies is a multidisciplinary department, students contemplating a minor should choose their women's studies course work from several different disciplines.

Graduate Study

Doctor of Philosophy

The Ph.D. program in Women's Studies is committed to feminist research, teaching, and scholarship. It emphasizes the application of theoretical and methodological models developed from the broad range of cultural issues that affect both women and men. While pressing for inclusion of feminist critiques and theories in the curriculums of specific disciplines, it also advocates training in interdisciplinary, international feminist approaches.

Students who complete their Ph.D. at Iowa are expected to gain a firm grounding in the history of feminist inquiry, histories of feminisms, and feminist pedagogy; the ability to move easily among the disciplines in their research and teaching; and a broad understanding from interdisciplinary work balanced with depth from concentration in a single discipline.

To prepare students to seriously contest traditional practices in a discipline, the program requires a minimum of 18 semester hours in one discipline and close work with a faculty member from that discipline on relevant research projects.

Curriculum

The doctorate requires a minimum of 72 semester hours beyond the B.A. All Ph.D. students must complete the following.

Graduate core
15 s.h.
Gender and diversity core
9 s.h.
Women's studies electives
18 s.h.
Course work in a single discipline (e.g., anthropology, history, literature)
18 s.h.
Dissertation
9-12 s.h.

Graduate Core

131:200-201 Foundations for Feminist Inquiry-I
6 s.h.
131:203 Proseminar (taken during the first semester)
1 s.h.
131:205 Graduate Practicum
1 s.h.
131:210 Feminist Pedagogy (required of all women's studies teaching assistants)
3 s.h.
131:228 Readings: History of Feminisms (Ph.D. candidates should enroll for 3 s.h.)
arr.
131:400 Dissertation Seminar (not included in the 9-12 s.h. for the dissertation)
1 s.h.

Qualifying Paper

Students complete a qualifying paper in the second semester of their second year in residence, demonstrating their theoretical and methodological strengths and their intellectual development in feminist studies.

Comprehensive Exams

Once students have successfully completed their qualifying papers, they are eligible to begin the three comprehensive exams that show competence in their chosen specializations, as recommended by their advisory committee and approved by the faculty members who oversee the Ph.D. program.

The exams may be submitted any time following completion of the qualifying paper, but generally they are expected during the third year. When they are satisfactorily completed, the student is admitted to candidacy and can begin work toward the dissertation.

Admission Requirements

All applicants must have a bachelor's degree with a grade-point average of at least 3.00. Applicants must demonstrate a commitment to feminist scholarship. A writing sample, a statement of purpose in pursuing the Ph.D., transcripts from all undergraduate and graduate work undertaken, GRE General Test scores, and three letters of recommendation from faculty members familiar with the applicant’s academic work must be submitted before an application can be considered.

International applicants must submit a current TOEFL score.

The statement of purpose should describe how the applicant sees her- or himself in the world and why he or she wants to pursue graduate study in general and women's studies in particular. The department uses the statement of purpose and the sample of academic writing to evaluate applicants’ ability to present their views forcefully and gracefully, as well as their ability to analyze, critique, and interpret.

The department does not offer a master's degree.

Financial Support

Most students receive financial support for their first two years in the program. Research assistants and teaching assistants also are available through other departments. Students who hold assistantships of one-quarter time or more pay in-state tuition.
### Courses

#### Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>131:00</td>
<td>Cooperative Education Internship</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>131:05</td>
<td>Gender, Race, and Class In the U.S.</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:101</td>
<td>Introduction to Women’s Studies</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>131:105</td>
<td>Women’s Studies Practicum</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>131:115</td>
<td>Women, Medicine, and Society</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:145</td>
<td>Feminism in India</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:149</td>
<td>International Feminism</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:150</td>
<td>Topics in Women’s Studies</td>
<td>3 s.h.</td>
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<tr>
<td>131:151</td>
<td>Feminist Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:179</td>
<td>Independent Readings and Research in Women’s Studies</td>
<td>1-3 s.h.</td>
</tr>
<tr>
<td>131:188</td>
<td>Honors Senior Thesis</td>
<td>3 s.h.</td>
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<tr>
<td>131:199</td>
<td>Senior Research Seminar</td>
<td>2-3 s.h.</td>
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<tr>
<td>131:200</td>
<td>Foundations for Feminist Inquiry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:201</td>
<td>Foundations for Feminist Inquiry II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:203</td>
<td>Prosseminar</td>
<td>1 s.h.</td>
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<tr>
<td>131:204</td>
<td>Feminist Research Seminar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:205</td>
<td>Graduate Practicum</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>131:210</td>
<td>Feminist Pedagogy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:212</td>
<td>Women’s Issues: A Transnational View</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:279</td>
<td>Independent Study</td>
<td>arr.</td>
</tr>
<tr>
<td>131:400</td>
<td>Dissertation Seminar</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

#### Cross-Referenced Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>131:044</td>
<td>Lesbian Lives in the U.S.</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:087</td>
<td>Gender Roles and Communication</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:108</td>
<td>Women and Society</td>
<td>3 s.h.</td>
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<tr>
<td>131:111</td>
<td>Religion and Women</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:124</td>
<td>Gender and the Environment</td>
<td>3 s.h.</td>
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<tr>
<td>131:127</td>
<td>Women Writers of African Descent</td>
<td>3 s.h.</td>
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<tr>
<td>131:128</td>
<td>The African American Woman in America</td>
<td>3 s.h.</td>
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<tr>
<td>131:130</td>
<td>Dance in American Culture</td>
<td>3 s.h.</td>
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<tr>
<td>131:140</td>
<td>The Cultures of American Women</td>
<td>3 s.h.</td>
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<tr>
<td>131:141</td>
<td>History of Feminist Anthropology</td>
<td>3 s.h.</td>
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<td>131:142</td>
<td>Motherhood and Reproduction</td>
<td>3 s.h.</td>
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<td>131:143</td>
<td>Women, Health, and Healing</td>
<td>3 s.h.</td>
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<tr>
<td>131:146</td>
<td>Women and the City</td>
<td>1.5 s.h.</td>
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<tr>
<td>131:148</td>
<td>Population, Environment and Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>131:279</td>
<td>Independent Study</td>
<td>arr.</td>
</tr>
<tr>
<td>131:400</td>
<td>Dissertation Seminar</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>131:148</td>
<td>Population, Environment and Development</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Textual, Cultural Changes in Concepts of Women in Literature

- Textual, cultural changes in concepts of women presented in and between periods of literary history; changes in novel’s conventions for portraying women from 18th through 19th centuries, or changes in dramatic presentation of women from Middle Ages through the Renaissance. Same as 008:160.
- American History through women’s eyes; emphasis on interaction of biology, economics, politics, ideology; how traditional historical generalizations change when women’s experience is considered; legal history, women’s education. Same as 16A:171.
- From passage of Fourteenth Amendment to present; emphasis on suffrage movement, economic roles, educational patterns Same as 16A:172.
131:173 U.S. Women’s Legal History 3 s.h.
Same as 16A:173.

131:174 Topics in History: Women and Gender in the U.S. 1940-Present 3 s.h.
Same as 16A:174.

131:175 Gender and Development Studies 3 s.h.
Consequences of economic and political development on women of Latin America, Africa, Asia; current theoretical perspectives, including Marxist, feminist, postmodern approaches. Consent of instructor required. Same as 113:175.

131:181 Society and Gender in Europe, 1200-1789 3 s.h.
How ideas about community were influenced by gender ideologies inscribed in patterns of authority-household, church, state; ranges of human endeavor-intellectual, psychological, biological, community organization-social, economic, legal, sexual. GE: foreign civilization and culture. Same as 16E:125.

131:182 Society and Gender in Europe, 1750-Present 3 s.h.
Social structures, gender roles in modern Europe; changes in politics, social organization, social relationship of sexes (education, sexuality, occupation), forms of social protest (feminism, socialism). GE: foreign civilization and culture. Same as 16E:148.

131:188 Prose by Women Writers 3 s.h.
Nonfiction, largely contemporary; style and content, redefinition of form and tradition of essay; Woolf, Dillow, Dillard, Walker. Same as 008:188.

131:194 Introduction to Feminist Criticism 3 s.h.
Feminist literary criticism of the past 20 years; emphasis on intersection of race, colonialism, sexuality, gender issues. Prerequisite: 131:181 or equivalent for undergraduates. Same as 008:194, 048:194.

131:197 Gender in Chinese Literature and Culture 3 s.h.
Changing image of woman in modern Chinese history through analysis of literary texts, films by women authors of different periods. Same as 039:197.

131:220 Seminar: Feminist Anthropology 3 s.h.
Contemporary, traditional anthropological issues from a feminist perspective. Background in feminist theory, anthropology required. Same as 113:220.

131:223 Feminist Medical Anthropology 3 s.h.
Directions feminists have taken in medical anthropological scholarship; focus on ethnographies that have become classics of the genre and on influential theoretical and applied work. Consent of instructor required. Same as 113:223.

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 016:225.

131:228 Readings: History of Feminisms arr.
Same as 016:228.

131:229 Feminist Ethics arr.
Same as 032:229.

131:240 Women and Television In American Culture 3 s.h.
Relationships posited between women and television through feminist critical scholarship; cultural analysis. Same as 36M:240.

131:241 American Indian Women’s Literature 3 s.h.
Origin, issues pertinent to development of American Indian women’s literature; traditional trial modes of expression, appropriation of European literary forms. Same as 008:241.

131:243 Feminist Cultural Studies Same as 008:243.

131:244 Readings: Comparative Gender Frontiers arr.
Same as 016:244.

131:245 Seminar: Feminist Ethnography 3 s.h.
Feminist critiques of traditional ethnographies; analysis of ethnographies informed by contemporary feminism. Consent of instructor required. Same as 113:221.

131:246 Women Writers of Latin America 3 s.h.
Women’s sport involvement from ancient times to present; focus on social class, attitudes, religion, race, ethnicity, medical opinion, economic considerations, political events, educational philosophies that have influenced women’s participation. Same as 028:278.

131:254 History of Women in Sports 3 s.h.
Women’s sport involvement from ancient times to present; focus on social class, attitudes, religion, race, ethnicity, medical opinion, economic considerations, political events, educational philosophies that have influenced women’s participation. Same as 028:278.

131:256 Gender Stratification Seminar 3 s.h.
Occupational gender segregation, gender gap in pay, role of family caregiving in women’s lower pay, devaluation of caregiving work and comparable work. Same as 034:256.

131:265 Feminist Criticism 3 s.h.
Issues in feminist theory, such as constructions of the subject, ethical issues, identity politics, essentialism, postmodernism. Same as 008:265, 048:265.

131:266 Changing Families and Public Policy 3 s.h.
Current sociological research on public policies that affect family life and wellbeing; divorce and child custody policies, teen pregnancy and abortion, family poverty, child care and work/family policies. Same as 034:266.

131:270 Readings In the History of Women and Gender in the U.S.A. arr.
Older literature as well as work of last decade; focus on use of gender as an analytical device, changing social relations of the sexes over long periods of time, concept of separate spheres, sex segregation in the workplace, gender and deviance, feminism and politics, women’s history as intellectual history. Same as 016:270.

131:274 Post-Colonial Women’s Writing 3 s.h.
Women’s distinct position in post-colonial literary traditions; international and comparative content, with emphasis on Native American women’s writing as post-colonial tradition. Same as 008:274.

131:283 Feminist Theory: Historians’ Perspectives arr.
Same as 016:283.

Same as 016:284.

Same as 016:287, 129:287.

131:290 Feminist Perspectives on Biology and Culture 3 s.h.
Physical anthropology and prehistoric archaeology from feminist perspective; emphasis on gender investigation methods of the past; role of women investigators, and criticism of male-centered theories for human evolution and prehistoric events, such as the domestication of plants. Consent of instructor required. Same as 113:290.
Tippie College of Business

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Dean: Gary C. Fethke
Senior associate dean: Robert Forsythe
Associate dean, undergraduate program: Nancy R. Hauserman
Associate dean, school of management: Gary J. Gaeth
Degrees: B.B.A., M.Ac., M.B.A., M.A., Ph.D.
Web site: http://www.biz.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 undergraduate and graduate programs of the college are accredited by AACSB-The International Association for Management Education.

Research, executive development, and continuing education activities are supported by the centers and institutes of the college: Hawkinson Institute of Business Finance, Institute for Economic Research, Manufacturing Productivity Center, John Pappajohn Entrepreneurial Center, Ira B. McCladrey Institute for Accounting Research, Iowa Institute for International Business, and Small Business Development Center.

Undergraduate Program

Bachelor of Business Administration

The Tippie College of Business offers the Bachelor of Business Administration (B.B.A.) in all six departments and in business administration. Most B.B.A. students complete background studies either in the College of Liberal Arts at The University of Iowa or at another institution and enter the Tippie College of Business as juniors. First-year students who meet the honors program’s ACT/SAT and high school class rank criteria may enter the college through the early admission program.

The B.B.A. degree requires a minimum of 120 semester hours of credit, of which at least 48 must be earned in business courses and at least 60 must be earned in nonbusiness courses.

The last 30 consecutive semester hours (or 45 of the last 60 for transfer students and others counting credit earned outside of the University toward the degree) must be earned in residence following admission to the Tippie College of Business, and must include 06J:165 Business Policy. At least 24 semester hours of credit in courses offered by the business college and at least two-thirds of the semester hours of credit 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 and all work by correspondence, including University of Iowa Guided Correspondence Study courses.

To graduate, B.B.A. candidates must have a cumulative grade-point average 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 Requirements

B.B.A. candidates must satisfy the following minimum common requirements or approved equivalents. For approved equivalents, consult the college’s Undergraduate Program Office.

GENERAL EDUCATION REQUIREMENTS
Students may not count courses taken to fulfill general education requirements toward other requirements for the B.B.A.

Rhetoric (010:001-002, or 010:003) 4-8 s.h.
Natural sciences 3 s.h.
Historical perspectives 3 s.h.
Global and cultural studies 3 s.h.
Humanities (including 08G:001 Interpretation of Literature) 6 s.h.
Social sciences (excluding 06E:001 and 06E:002) 3 s.h.

PREREQUISITES FOR ADMISSION TO THE COLLEGE
06A:001 Introduction to Financial Accounting 3 s.h.
06A:002 Introduction to Managerial Accounting 3 s.h.
06E:001 Principles of Microeconomics 4 s.h.
06E:002 Principles of Macroeconomics 4 s.h.
22M:017 Calculus and Matrix Algebra for Business 4 s.h.
22S:008 Statistics for Business 4 s.h.

BUSINESS CORE
06E:071 Statistics for Strategy Problems 3 s.h.
06F:100 Introductory Financial Management 3 s.h.
06J:047 Introduction to Law 3 s.h.
06J:048 Introduction to Management 3 s.h.
06J:165 Business Policy 3 s.h.
06K:070 Computer Analysis 3 s.h.
06K:100 Operations Management 3 s.h.
06M:100 Introduction to Marketing 3 s.h.

In addition, students must complete a major area of study. The majors offered by the college are business administration, accounting, economics, finance, management, management information systems, and marketing. With the exception of the major in business administration, the requirements for each are established by the college’s individual departments.

Students with Associate of Arts Degrees

Students who receive Associate of Arts (A.A.) degrees from community colleges participating in the Iowa Community College/Regents Articulation Agreement are considered to have met the rhetoric, natural sciences, social sciences, historical perspectives, and humanities requirements, but not the global and cultural studies (formerly foreign civilization and culture) requirements. The program of study for which the A.A. was awarded must have included:

- a minimum of 60 semester hours (90 quarter hours) of credit acceptable toward graduation from The University of Iowa (mathematics courses comparable to 22M:001 Basic Algebra I, 22M:002 Basic Algebra II, and 22M:003 Basic Geometry are not accepted toward graduation);

- completion of the agreed-upon group of courses at the community college; and

- a grade-point average of at least 2.00.

Students who use the provisions of the articulation agreement are granted a maximum of 60 semester hours of transferable credit from two-year colleges toward the 120 semester hours required for a B.B.A. If a student has earned more than 60 semester hours of credit in completing the A.A., the excess credit is used in computing the grade-point average and may be used to satisfy course requirements, but it does not count toward the bachelor’s degree. Transfer credit for business courses taken during the freshman and sophomore 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. Students who transfer fewer than enough hours to meet a common requirement may use only approved courses to complete the remainder of the requirement. Only junior- and senior-level courses taken at accredited four-year institutions may be used to satisfy common business requirements numbered 100 and 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: The following checkpoints are designed for students who enter the University as first-year prebusiness 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.

Before the third semester begins: 06E:001 or 06E:002, 22M:017, and 228:008, or equivalents; and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: 06A:001, 06A:002, and 06E:001 or 06E:002 (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 except for 06J:165, 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: enrollment in 06J:165, all remaining course work in the major, and a sufficient number of semester hours to graduate.

Major in Business Administration

This major permits students to pursue a less specialized curriculum than is provided by any of the other majors in the college. It also allows students to concentrate in areas in which majors are not available but in which courses are offered by the college’s departments (e.g., international business).

The requirements for the major in business administration are as follows.

Six business courses numbered above 100 (total of 18 semester hours), including at least four of these:

- 06A:113 Taxes and Business Decisions 3 s.h.
- 06G:125 International Economics 3 s.h.
- 06F:117 Corporate Finance 3 s.h.
- 06F:130 International Finance 3 s.h.
- 06J:130 Individuals, Teams, and Organizations 3 s.h.
- 06J:131 Strategic Human Resource Management 3 s.h.
- 06J:146 International Business Environment 3 s.h.
- 06K:180 Applied Information Systems 3 s.h.
- 06M:134 Marketing Research 3 s.h.
- 06M:151 International Marketing 3 s.h.

*Students may choose only one of these courses (total of 3 semester hours) to satisfy the four-course requirement for the major.

In addition to the required grade-point averages listed above, students in this major must have a grade-point average of at least 2.00 on all courses taken from the list above and on all business courses numbered above 100 (excluding 06J:165 Business Policy). Students in this major may not take business courses numbered above 100 pass/nonpass.

The business administration major may not be combined with any other business major.

B.B.A. with Honors

The Tippie College of Business Honors Program provides outstanding students in the college the opportunity to undertake independent study and to work closely with faculty members and other honors students. Students in the program participate in junior and senior honors seminars and complete an honors project under the direction of a faculty adviser. Students who successfully complete all college and honors program requirements with a grade-point average of at least 3.20 in all business courses and all business courses taken at Iowa are awarded the B.B.A. with honors.

The program is open to students who are enrolled in the business college and who have earned a grade-point average of at least 3.20 in all courses taken, all courses taken at Iowa, all business courses taken, and all business courses taken at Iowa. Prebusiness students interested in the honors program are encouraged to participate in the University Honors Program until they are admitted to the business college.

Minors

Nonbusiness Minors

Undergraduate students in the business college may elect to complete a minor in another college of the University. For example, students interested in international business might choose a foreign language as a minor. For the minor requirements, students should consult with an adviser in the relevant department. To have the minor recorded on their transcripts, students must complete the “minor” section on the B.B.A. degree application before submitting the form to the Office of the Registrar early in their junior year, or when they apply for the degree using the ISIS system.

Business Minor

Students majoring in another college of the University may elect a minor in business administration. The courses listed below, or their equivalents, satisfy all requirements for the minor. At least 15 semester hours of courses taken for the minor must be completed in residence at The University of Iowa, and at least 15 semester hours must be course work completed in the business college. A grade-point average of at least 2.00 is required on all courses taken in the minor and on all courses in the minor taken at Iowa. Courses in the minor may not be taken pass/nonpass.

Calculus (22M:016, 22M:017, 22M:025, or 22M:035) 3-4 s.h.
Statistics (07P:143, 223:008, 22S:039, 22S:102, 22S:120, or 031:142) 3-4 s.h.
06A:001 Introduction to Financial Accounting 3 s.h.
06A:002 Introduction to Managerial Accounting 3 s.h.
06E:001 Principles of Microeconomics 4 s.h.
06E:002 Principles of Macroeconomics 4 s.h.
*06F:100 Introductory Financial Management 3 s.h.
06J:047 Introduction to Law 3 s.h.
06J:048 Introduction to Management 3 s.h.
06K:070 Computer Analysis 3 s.h.
*06M:100 Introduction to Marketing 3 s.h.

*Must be taken in junior or senior year.

Students who have completed all requirements for the minor in business administration when they graduate should indicate a business minor on the application for degree before submitting the form to the registrar’s office early in their final semester, or when they apply for the degree using the ISIS system.

Recognition for Academic Achievement

Dean’s list

Undergraduate students who achieve a grade-point average of 3.50 or higher on 12 or more semester hours of graded work (excluding UI Guided Correspondence Study courses) during a given semester and who have no 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 who achieve a grade-point average of 4.00 on 12 or more semester hours of graded work and who have no hours of I (incomplete) or 0 (no grade reported) for two consecutive semesters (excluding summer sessions) are recognized by inclusion on the President’s List.

Graduation Honors

High scholastic achievement is recognized upon graduation in two ways: graduation with distinction based on grades only, and graduation with honors in business administration based on both grades and the completion of special work as outlined by the college.

To be eligible for either form of recognition, a student must complete 60 semester hours in residence as an undergraduate at The University of Iowa, 45 of which must be completed before the final registration.

Graduation with Distinction

The Office of the Registrar certifies to the dean of the college the names of students eligible to graduate with distinction. The college awards degrees “with highest distinction” to students in the highest 2 percent of the graduating class, “with high distinction” to students in the next highest 5 percent, and “with distinction” to the next highest 5 percent. Ranking is based on students’ grade-point averages for all college-level study undertaken before their final registration.

Admission

Admission standards are set by the undergraduate program committee. The college usually admits undergraduate students at the beginning of their junior year. Students are eligible for admission to the college after they have completed 60 semester hours, have satisfied prerequisite requirements, and have submitted an application by the deadline (April 1 for summer or fall admission, November 1 for spring admission). Students who wish to apply after the deadline must file a petition with the college’s Undergraduate Program Office. Late applications are reviewed separately and do not qualify for automatic admission. Students transferring in from another university or college are not held to the admission deadlines; they may apply at any time.

Admission to the Tippie College of Business is guaranteed to students who have earned junior standing, who meet the previously stated course requirements, and who have earned a grade-point average of at least 2.60 (effective April 1, 2002: at least 2.75) on the six prerequisite courses, on all college course work, and on all course work at Iowa. In addition, students admitted to The University of Iowa fall 1998 or later must have earned no grade lower than C on any prerequisite course.
Admission is not guaranteed for students who have grade-point averages below 2.60 (effective April 1, 2002: below 2.75) for one or more of the categories (the six prerequisites, all college course work, and all course work at Iowa). Students still may apply to the college and their applications may be considered by the admissions committee. In addition to grade-point averages in selected categories, a student’s pattern of grades over time and other academic factors relevant to predicting success in the business college also may be considered for admission purposes. The committee focuses on recent semesters to determine whether a student’s record reflects an upward trend in challenging and relevant course work.

Early Admission
Highly qualified first-year students may be admitted directly to the Tippie College of Business through the Early Admission Program. High school students who have no high school unit deficiencies and meet one of the following criteria are invited to apply:
- an ACT composite score of at least 29 (or SAT of at least 1250) and a rank in the top 10 percent of their high school class;
- an ACT composite score of 30-32 (or SAT I of 1290-1420) and a rank in the top 15 percent of their high school class; or
- an ACT composite score of at least 33 (or SAT 1 of at least 1430) and a rank in the top 20 percent of their high school class.

For more information, contact the Undergraduate Program Office.

Credit and Grading

Credit by Examination
Students may earn up to 32 semester hours of credit by examination. Selected tests from the College-Level Examination Program (CLEP) and the Advanced Placement Program (APP) of the College Entrance Examination Board are used. It is possible to receive credit for some of the college’s common requirements. Information on the CLEP and APP examinations is available from the University’s Evaluation and Examination Service.

Maximum Schedule
During early registration, students admitted to the Tippie College of Business may register for a maximum of 16 semester hours. Course schedules that exceed 16 semester hours require approval from the Undergraduate Program Office. After early registration, students may register for a maximum of 18 semester hours. Course schedules of more than 18 semester hours for a semester or 9 semester hours for a summer session require approval of the associate dean for the undergraduate program. For additional information about a maximum schedule for summer session, consult the Undergraduate Program Office.

Adding and Dropping Courses
Courses may be added during the first three weeks of the semester or first one and one-half weeks of the summer session with approval of the instructor. Courses may be dropped during the first 10 weeks of the semester, the first six weeks of the eight-week summer session, and the first four weeks of the six-week summer session with approval of the instructor. Students must have the approval of the associate dean for the undergraduate program in order to add or drop a course after these deadlines. Approval for adds or drops after these deadlines is granted only in extraordinary circumstances.

Undergraduates receive the mark of W for any course dropped after the third week of the semester. Summer session deadline dates for the mark of W are listed in the Schedule of Courses.

Pass/Nonpass
Of the total semester hours required for a B.B.A., up to 16 may be taken pass/nonpass with the consent of the adviser and instructor. However, students may not count more than 8 semester hours of pass/nonpass credit in the last 60 semester hours of course work. 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, common, or major business requirements. (Major business requirements include any course that could serve to fulfill a major course requirement.) Pass/nonpass registration must be completed during the first three weeks of a semester or the first one-and-one-half weeks of a summer session, and it requires the approval of the instructor and the academic adviser. For courses taken pass/nonpass, an earned grade of C- or higher is recorded as a P; an earned grade of D+ or lower is recorded as an N.

Second-Grade-Only Option
This option is not available to junior and senior students in the Tippie College of Business. Students admitted to the early admission program are eligible to apply for the second-grade-only option before they reach junior standing. Early admission students who wish to apply for the option must follow the second-grade-only option rules established by the College of Liberal Arts.

Correspondence Courses
B.B.A. candidates may not satisfy any requirement whether common or major through correspondence courses. Credit earned by correspondence study does not count toward the residency requirement.

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 undertaken, all course work undertaken at The University of Iowa, all course work taken to satisfy requirements for the major, and all course work taken at The University of Iowa to satisfy requirements for the major. In probation decisions, a 6-semester-hour minimum is used to calculate the grade-point average for all course work taken to satisfy requirements for the major, and all course work taken at The University of Iowa to satisfy requirements for the major.

When all of the above grade-point averages equal or surpass 2.00, students are removed from probation. Usually, students are allowed only one session to return to good academic standing. They also may be required to attend a course designed specifically for students who have been placed on academic probation. 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, even 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 the expiration of one calendar year following the end of the term in which the dismissal took place.

Entrepreneurship Certificate
The Tippie College of Business and the Pappajohn Entrepreneurial Center offer University of Iowa students the opportunity to earn a Certificate in Entrepreneurship while pursuing their undergraduate degrees. The Colleges of Engineering and Liberal Arts and the UI health science colleges also collaborate in the certificate program. Students learn from a select team of faculty members and business leaders distinguished by their ability to teach, model, and inspire the entrepreneurial process.

The certificate program helps prepare students to start and lead their own companies and expands their understanding of how entrepreneurial firms operate. It encourages innovation and creativity and develops skill in recognizing opportunity—all necessary for entrepreneurs and successful business leaders.

Students in the entrepreneurship program gain understanding of the entrepreneurial approach to acquiring and managing resources, acquire team-building skills critical to both small and large companies, and develop sound business planning skills necessary for launching new ventures and products. Certificate students also enjoy networking opportunities with successful entrepreneurs and other business leaders.

Requirements
To earn the Certificate in Entrepreneurship, students must complete a minimum of 18 semester hours in entrepreneurship-related course work, which must include the following: (With approval, students may apply 6 semester
The certificate program is designed not only for politics of the related geographical area. In this section of the Catalog.

Nonbusiness students also must take 06A:020 Accounting for Nonbusiness Students (3 semester hours) or another approved accounting course.

ELECTIVES

Students choose 9 semester hours of electives. They may choose from the following list or use other University of Iowa courses to fulfill the requirement (contact the Pappajohn Entrepreneurial Center for more information).

06T:103 Small Business Management 3 s.h.
06T:106 Innovation and Change 3 s.h.
06T:108 Entrepreneurship: Business Consulting 3 s.h.
06T:109 Legal Aspects of Entrepreneurship 3 s.h.
06T:111 Data Product Design and Development 2-3 s.h.
06T:114 Strategic Management of Technology and Innovation 2-3 s.h.
06T:115 Technology Applications for Entrepreneurs 2 s.h.
06T:140 Writing a Successful Business Plan 1 s.h.
06T:190 Seminar in Entrepreneurship 2-3 s.h.

Entrepreneurship Certificate for Engineering Students

Students enrolled in the College of Engineering should consult with the college’s Student Development Center for information about requirements for the Technological Entrepreneurship Certificate.

Courses

For a complete listing of entrepreneurship courses offered by the Tippie College of Business, see “Entrepreneurship Courses” later in this section of the Catalog.

International Business Certificate

The Tippie College of Business and the College of Liberal Arts offer a joint program leading to a certificate in international business. This program entails study of international business and economics, international relations and institutions, a foreign language, and the contemporary art, literature, culture, and/or politics of the related geographical area.

The certificate program is designed not only for undergraduate students who intend to pursue careers in international business but for any undergraduate 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. The range of courses in the program permits students to tailor areas of specialization suited to their individual interests and to complement majors in both liberal arts and business.

When students complete the certificate requirements and graduate, the notation “Certificate in International Business” is added to their transcript. Questions should be directed to the Tippie College of Business Undergraduate Program Office or the College of Liberal Arts Office of Academic Programs.

Application

Only undergraduate students pursuing a degree from The University of Iowa are eligible to work toward the certificate in International Business. In order to receive the certificate, students must receive an undergraduate degree from The University of Iowa.

Interested students must declare their intention to pursue the certificate with an international business certificate adviser and must submit a plan of study.

Requirements

Students must maintain a grade-point average of at least 2.00 on all international business certificate course work. Courses used to satisfy the certificate may not be taken pass/no pass. A minimum of 20 semester hours of certificate course work (other than language courses) must be completed at The University of Iowa or in approved study abroad programs. Students who want to use credit earned while studying abroad should consult an international business certificate adviser before leaving campus. A course may not be used to satisfy more than one certificate requirement. Correspondence study is not accepted toward the certificate.

The certificate requires course work in international business, international relations and institutions, foreign language, and area studies, as follows.

INTERNATIONAL BUSINESS

Both of these:
06E:125 International Economics 3 s.h.
06E:129 Economic Growth and Development 3 s.h.
06E:164 Economics in Transition 3 s.h.
06E:173 Advanced International Economics 3 s.h.
06F:130 International Finance 3 s.h.
06J:146 International Business Environment 3 s.h.
06M:151 International Marketing 3 s.h.
091:282 International Business Transactions 3 s.h.
091:287 International Economic Relations 3 s.h.

INTERNATIONAL RELATIONS AND INSTITUTIONS

Two of these (total of 6 semester hours):
16W:138 (152:138) History of International Health 3 s.h.
019:156 Comparative Communication Systems 3 s.h.
019:157 (044:157) Third World Development Support 3 s.h.
030:040 Introduction to Politics of Industrial Democracies 3 s.h.
030:041 Introduction to the Politics of Russia and Eurasia 3 s.h.
030:042 Introduction to the Politics of Developing Areas 3 s.h.
030:060 Introduction to International Relations 3 s.h.
030:061 Introduction to American Foreign Policy 3 s.h.
030:149 Problems in Comparative Politics 3 s.h.
030:150 Politics of Emerging Market Economies 3 s.h.
030:156 Politics of Ethnic and Cultural Conflict 3 s.h.
030:160 International Politics 3 s.h.
030:161 International Organization and World Order 3 s.h.
030:162 American Foreign Policies 3 s.h.
030:164 Continuity and Change in the International System 3 s.h.
030:165 International Conflict 3 s.h.
030:166 Global Political Communication 3 s.h.
030:167 Politics and the Multinational Enterprise 3 s.h.
030:169 Problems of International Politics 3 s.h.
030:170 The Politics of International Economics 3 s.h.
030:179 Transitions to Democracy 3 s.h.
034:159 Families in Comparative Perspective 3 s.h.
034:163 Comparative Sociology 3 s.h.
36C:093 (042:093) Inter-cultural Communication 3 s.h.
044:011 Population Geography 3 s.h.
044:015 Introduction to Political Geography 3 s.h.
044:030 The Global Economy 3 s.h.
044:035 World Cities 3 s.h.
044:094 International Development 3 s.h.
044:162 Work, Gender, and Development 3 s.h.
044:163 Geography of Newly Industrializing Countries 3 s.h.
044:172 Development Planning and Policy 3 s.h.
044:176 Social Consequences of Global Change 3 s.h.
044:194 Geographic Perspectives on Development 3 s.h.
047:005 Making of the Modern Global System 3 s.h.
047:010 1044:0101 The Contemporary Global System ‘ 4 s.h.
047:150 Internetworks in International Development 3 s.h.
113:010 Anthropology and Contemporary World Problems 3 s.h.
113:135 Work and Society 3 s.h.
113:143 Environment and Culture 3 s.h.
113:175 (131:175) Gender and Development Studies 3 s.h.
113:181 (129:151) Race, Ethnicity, and International Relations 3 s.h.
FOREIGN LANGUAGE

Students must complete a foreign language sequence. For languages not listed below, for study abroad course work, or for questions, see an international business certificate adviser.

Chinese
039:008-009 First-Year Chinese: First and Second Semesters 10 s.h.
or
039:100-101 Advanced First-Year Chinese 10 s.h.
or
039:010-011 Second-Year Chinese: First and Second Semesters 10 s.h.

French
009:001-002 Elementary French I-II 8 s.h.
or
009:010 First-Year French Review 5 s.h.
or
009:011-012 Intermediate French I-II 8 s.h.
A course for which 009:012 is prerequisite

German
013:011-012 Elementary German I-II 8 s.h.
or
013:013 Intensive Elementary German 6 s.h.
or
013:014 First-Year German Review 4 s.h.
or
013:021-022 Intermediate German I-II 8 s.h.
A course for which 013:022 is prerequisite

Hindi
039:031-032 First-Year Hindi: First and Second Semesters 10 s.h.
or
039:033-034 Second-Year Hindi: First and Second Semesters 8 s.h.

Italian
018:001-002 Elementary Italian I-II or 8 s.h.
or
018:103 Intensive Elementary Italian 6 s.h.
or
018:011-012 Intermediate Italian I-II or a.s.h.
A course for which 018:012 is prerequisite

Japanese
or
39J:008-009 First-Year Japanese: First and Second Semesters 10 s.h.
or

Portuguese
038:100 Accelerated Elementary Portuguese 0-5 s.h.
or
038:102 Portuguese for Spanish Speakers 3 s.h.
or
038:101 Accelerated Intermediate Portuguese 0-5 s.h.
A course for which 038:101 is prerequisite

Russian
041:001-002 First-Year Russian I-II 8 s.h.
or
041:003-004 Second-Year Russian I-II a.s.h.
A course for which 041:004 is prerequisite

Spanish
035:001-002 Elementary Spanish I-II 8 s.h.
or
035:005 Elementary Spanish Review 5 s.h.
or
035:011-012 Intermediate Spanish I-II a.s.h.
or
035:013 Accelerated Intermediate Spanish 6 s.h.
A course for which 035:012 is prerequisite

Swahili
103:015-016 Elementary Swahili I-II 8 s.h.
or
103:017-018 Intermediate Swahili I-II a.s.h.

Zulu
103:031-032 (129:031-032, 141:031-032) Elementary Zulu I-II 8 s.h.
or
103:033-034 (129:033-034, 141:033-034) Intermediate Zulu I-II 8 s.h.

Area Studies

Students complete 6 semester hours from one geographic area. The area should be appropriate to the language the student chooses for the language requirement.

Asia
Appropriate for these languages: Chinese, Hindi, or Japanese

01H:016 (039:016) Asian Art and Culture 3 s.h.
or
016:005 (039:055) Civilizations of Asia: China 3 s.h.
or
016:006 (039:056) Civilizations of Asia: Japan 3 s.h.
or
16W:173 (039:173) Modern Japan to 1945 3 s.h.
or
16W:194 (039:134) Imperialism and Modern India 3 s.h.
or
16W:196 (039:154) Modern China 1800 to Present 3 s.h.
or
16W:197 U.S. and China in the 20th Century: Culture and Diplomacy 3 s.h.
or
026:144 Indian Philosophy 3 s.h.
or
026:145 Buddhist Philosophy 3 s.h.
or
030:143 (039:178) Government and Politics of the Far East 3 s.h.
or
032:004 (039:064) Living Religions of the East 3 s.h.
or
032:006 (039:066) Introduction to Buddhism 3 s.h.
or
032:008 (039:018) Asian Humanities: India 3 s.h.
or
032:009 (039:019) Asian Humanities: China 3 s.h.
or
032:169 (039:169) Karma, Rebirth, and Human Destiny 3 s.h.
or
032:176 (039:161) Chinese Religions 3 s.h.
or
032:177 (039:136) Indian Literature 3 s.h.
or
032:184 (039:184) Religious Themes in Japanese Literature 3 s.h.
or
032:189 Religion in Modern Japan 3 s.h.
or
032:191 (039:167) Religion in India 3 s.h.
or
034:154 Society and Politics in East Asia 3 s.h.
or
039:020 Asian Humanities: Japan 3 s.h.
or
039:057 (016:007) Civilizations of Asia: South Asia 3 s.h.

Europe
Appropriate for these languages: French, German, Italian, Portuguese, or Spanish

009:110 Introduction to French Literature: Twentieth Century 3 s.h.
or
009:114 French Civilization 3 s.h.
or
009:147 (36F:105) French Cinema 3 s.h.
or
009:168 (048:168) Post-Colonial Literature in France 3 s.h.
or
013:101 Introduction to German Literature 3 s.h.
or
013:105 German Cultural History 3 s.h.
or
013:108 The German Media 3 s.h.
or
013:112 Twentieth-Century German Literature 3 s.h.
or
013:115 Contemporary German Civilization 3 s.h.
or
013:119 German Film 3 s.h.
or
16E:135 Twentieth-Century Europe: The Nazi Era 3 s.h.
or
16E:136 Twentieth-Century Europe: The Cold War and After 3 s.h.
or
16E:146 France from 1815 to the Present 3 s.h.
or
16E:148 (131:182) Society and Gender in Europe 1750-Present 3 s.h.
or
16E:152 Modern Britain 1867-Present 3 s.h.
or
16E:156 Germany Since 1914: Weimar, Hitler, and After 3 s.h.
or
16E:161 Politics and Culture in Twentieth-Century Europe 3 s.h.
or
018:105 Modern Italian Fiction 3 s.h.
or
018:106 Modern Italian Poetry and Drama 3 s.h.
or
030:176 French Politics and Society 3 s.h.
or
035:121 Readings in Spanish Literature and Culture 3 s.h.
or
035:150 Spanish Civilization 3 s.h.
or
035:152 Modern Spanish Literature 3 s.h.
or
035:165 Topics in Contemporary Spain 3 s.h.
or
36F:021 (048:021) European Film History 3 s.h.
or
038:107 Introduction to Portuguese Literature 3 s.h.
or
038:114 Culture and Civilization of the Portuguese-Speaking World 3 s.h.

Latin America
Appropriate for these languages: Portuguese or Spanish

16W:110 Topics in Latin American History 3 s.h.
or
16W:112 Introduction to Modern Latin America 3 s.h.
Returning for Baccalaureate Degrees

Returning for a Second Business Major

Persons who already have earned a B.B.A. degree at The University of Iowa and who are not enrolled in a graduate or professional program may complete the requirements for another business major (except accounting and business administration). They must apply for readmission to the Tippie College of Business, meet the guaranteed admission requirements, and declare the appropriate major on their application. Those interested in pursuing a second major in accounting and business administration should consult with the department to discuss the B.B.A. or Master of Accountancy (M.Acc.) programs.

Students who return to The University of Iowa to earn an additional undergraduate degree must meet the requirements for that major; they need not meet the residence requirement. It is their responsibility to notify the Office of the Registrar upon completion of the requirements for the second major so that a notation can be placed on their permanent record.

Students who hold a bachelor’s degree from another college or university may not complete a second business major at The University of Iowa. They may apply for admission to complete an additional degree (see “Returning for an Additional Bachelor’s Degree”).

Returning for an Additional Bachelor’s Degree

Persons who hold a bachelor’s degree from another University of Iowa college (for example, a B.A., B.S., B.M., or B.F.A. from the College of Liberal Arts, a B.S.N. from the College of Nursing, or a B.S.E. from the College of Engineering) and who are not enrolled in a graduate or professional program may return for an additional bachelor’s degree from the Tippie College of Business.

They must satisfy all requirements for undergraduate admission to the business college. Once admitted, they must satisfy the business college’s course and residence requirements.

Students must complete a minimum of 24 semester hours of University of Iowa course work in business. At least two-thirds of the required course work in the major must be taken in the major department at The University of Iowa. Students must satisfy all common course requirements for the Bachelor of Business Administration degree and must satisfy all grade-point-average requirements to remain in good academic standing and qualify for graduation.

In addition, students must complete (or have completed) a minimum of 48 semester hours in business course work and at least 60 semester hours in nonbusiness course work in order to graduate.

Students with Baccalaureates from Other Institutions

Students with a bachelor’s degree from another college or university may apply for admission to The University of Iowa to earn an additional undergraduate degree from the Tippie College of Business. The requirements are the same as those listed under “Returning for an Additional Bachelor’s Degree.”

Accounting as a Second Degree

Students who hold a bachelor’s degree in a nonbusiness area, either from The University of Iowa or from another college or university, may in some cases be considered for admission to the Tippie College of Business to pursue a second undergraduate major in accounting. Students interested in earning a second degree with a major in accounting should consult with the department to discuss the B.B.A. or Master of Accountancy (M.Acc.). For more information see “Accounting” in this section of the Catalog.

Students may not earn a second major in accounting if they already hold a B.B.A. from The University of Iowa.

Combined Business and liberal Arts Degree

The College of Liberal Arts and the Tippie College of Business offer a combined degree program whereby students earn two University of Iowa baccalaureate degrees. Successful candidates are awarded a Bachelor of Business Administration (B.B.A.) by the business college 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.) by liberal arts.

To enter the combined degree program, students must be eligible for admission to the Tippie College of Business. Interested students should schedule an appointment with an adviser in the business college’s Undergraduate Program Office. Students must be approved for candidacy
in the combined degree program by the business college and must be admitted to both colleges.

Students who enter the program are required to complete all General Education, college, and major requirements for both colleges.

To qualify for both degrees in the combined degree program, candidates must complete an overall total of 150 semester hours, including at least 30 in courses offered by the business college and at least 30 in courses offered by the liberal arts college.

Interdepartmental Graduate Programs

The following interdepartmental graduate programs are offered in the Tippie College of Business: Master of Business Administration (M.B.A.); Master of Accountancy (M.Ac.), Master of Arts (M.A.) in Management information systems; and Doctor of Philosophy (Ph.D.) in business administration. Dual degree options allow M.A. or M.B.A. candidates to pursue a second graduate degree in another college. For information on M.A. programs, see the respective departmental listings in this section of the Catalog. For information on graduate programs in economics, see “Economics” in this section of the Catalog.

Doctor of Philosophy

The Ph.D. program in business administration is designed for students preparing for research positions in business and government, or for research and teaching positions at academic institutions. The program is flexible, permitting students to choose an area of specialization 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 area of study. Students also have opportunities to develop research and teaching skills.

Course work in the Ph.D. program consists of prerequisites (as necessary), the Ph.D. core, major and minor areas of study, and dissertation research. Most students, including all with master’s degrees from programs accredited by the International Association for Management Education, take 60 semester hours of course work. Additional courses may be required to ensure satisfactory completion of business prerequisites and/or the Graduate College requirement of 72 semester hours of graduate credit, which includes courses taken before entering the University of Iowa Ph.D. program. Interested students should contact individual departments for complete program information.

Prerequisites

The AACSB common body of knowledge requirements must be satisfied with undergraduate or graduate courses, including those in accounting, finance, management, marketing, organizational behavior, quantitative methods, and the economic and legal environment of profit and/or nonprofit organizations.

Core Courses

Core courses develop research competence and provide background for specialized study. Graduate course requirements include behavioral sciences (3 semester hours), economics (6 semester hours), and research methods/statistics/quantitative analysis (12 semester hours).

Doctoral candidates consult with their advisers to develop a plan of study that reflects the background and interests of individual students and satisfies core requirements.

Major Area of Study

At least 12 semester hours 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 Area of Study

Students must complete a minimum of 9 semester hours of doctoral-level courses beyond the Ph.D. core course requirements. Available areas include all major areas of study listed in addition to concentrations outside the Tippie College of Business.

Comprehensive Examinations

Students must successfully complete a written examination in the major area of study. The examination committee is made up of a minimum of three faculty members. Students also complete a written examination in the minor area of study if required by the student’s major department or minor study department. Scope, timing, and format of examinations are determined by individual departments. Students should consult specific departmental program information or contact departments directly for details.

Dissertation

A dissertation proposal must be presented before a forum attended by dissertation committee members and open to interested faculty and graduate students, as established by the major department. Students are required to complete 15 semester hours of dissertation credit. Researching and writing the dissertation typically requires two years of full-time effort.

Final Examination

The dissertation must be defended in an oral examination attended by the dissertation committee members. The examination also is open to other interested faculty members and graduate students.

Admission

Applicants to the Ph.D. program must submit a completed application for graduate admission, official transcripts from all institutions attended, official Graduate Management Admission Test (GMAT) scores, and three letters of recommendation to the sponsoring department. The Graduate Record Examination (GRE) scores may be submitted in place of GMAT scores for applicants to the Ph.D. program in finance, management and organizations, and management sciences. Students should contact the sponsoring department and consult the Graduate College section of the Catalog for more information.

Application Deadlines

Application deadlines for the Doctor of Philosophy are as follows. Students may enter in fall only.

February 1 -International applicants who are applying for financial assistance from The University of Iowa.

March 1 -International applicants who are not applying for financial assistance from The University of Iowa.

March 1 -U.S. citizens and permanent residents. Applications received by February 1 receive priority in consideration for financial aid.

Other Graduate Programs

Master of Accountancy (M.Ac.)

See “Accounting” in this section of the Catalog.

M.A. and Ph.D. in Economics

See “Economics” in this section of the Catalog.

M.A. in Management Information Systems

See “Management Sciences” in this section of the Catalog.

Facilities

The Tippie College of Business is located in the John Pappajohn Business Building, at the heart of the campus. The Pappajohn Building contains seminar and conference rooms, a computer laboratory, two auditoriums, three computer classrooms, a behavioral laboratory, a restaurant (Pat’s Diner), the Marvin A. Pomerantz Business Library, and a variety of classroom facilities.

Extensive research materials for business and economics are maintained in the Main Library, and the facilities of the Weeg Computing Center are available to all students. Students also have direct access to a large computer laboratory in the Pappajohn Building. The laboratory serves the instructional programs of the college, and the staff maintains a current library of computational programs, CD-ROMs, and data tapes to accommodate user’s needs.
Centers and Institutes

Hawkinson Institute of Business Finance

The Hawkinson Institute of Business Finance offers specialized education and training related to the investment banking and securities industries for students in the Tippie College of Business. It supports the Hawkinson Scholarship Program, which recognizes academic excellence and leadership and seeks to guide Hawkinson Scholars toward competitive and rewarding internships and careers. The institute also presents instructional seminars and participates in outreach efforts to industry.

Institute for Economic Research

The Institute for Economic Research engages in and supports economic research and establishes a formal mechanism for providing interaction with and economic advice to industry and government. The institute’s main objectives are to provide economic information, services, and advice to business and public agencies; to provide a state focal point for applied economic research; and to promote and enhance academic research and teaching in economics.

Iowa Institute for International Business

This institute is dedicated to the development and advancement of knowledge related to international business. Its mission of research and teaching aims to provide students at all levels with the education, experience, and skills they will need for success in the global marketplace, and to promote innovative and cross-cultural approaches to management decision making and problem solving.

Ira B. McGladrey Institute for Accounting Research

The Ira B. McGladrey Institute fosters quality accounting and auditing education and research at The University of Iowa by encouraging and participating in the creation and dissemination of knowledge in the academic, business, government, and professional accounting communities.

Manufacturing Productivity Center

The Manufacturing Productivity Center facilitates partnerships with Iowa manufacturing and service firms. These arrangements enable business faculty members and students, working with the firms’ managers and engineers, to jointly address ways to improve manufacturing productivity.

Pappajohn Entrepreneurial Center

The Pappajohn Entrepreneurial Center offers entrepreneurship education for University of Iowa students and citizens throughout Iowa. Through a partnership with Iowa community colleges, the Pappajohn Entrepreneurial Center teaches entrepreneurship programs statewide, and it offers several programs that foster the development of entrepreneurial skills in Iowa’s youth. On campus it is the seat of an entrepreneurship program that gives all University of Iowa students, no matter what their discipline, the opportunity to earn the Certificate in Entrepreneurship while pursuing their undergraduate degree (see “Entrepreneurship Certificate” in this section of the Catalog). Several entrepreneurship courses are available to University of Iowa graduate students.

Small Business Development Center

Since 1981, The University of Iowa Small Business Development Center has played an important role in helping enterprising Iowans to manage their own businesses successfully. The center provides support for small business owners and entrepreneurs. Its personnel are trained to meet the various needs of small business management, including market, business, and financial planning, cash flow analysis, human resource planning, product commercialization, market research and analysis, strategic planning, international trade, and advertising and public relations.

Placement Services

The placement needs of the Tippie College of Business are served by the Office of Business and Liberal Arts Placement, located in Phillips Hall. A placement media library, job search advising, and interview facilities provide students and recruiting organizations with a full range of placement services.

Alumni Relations

Relationships with alumni are maintained by the director of communication and external relations in the Dean’s Office. The college circulates its magazine, BUSINESS AT IOWA, to alumni and friends of the college and hosts events each semester ranging from individual visits to receptions in cities nationwide. Members of the Business Student Ambassadors, an undergraduate student organization, serve as hosts and guides for alumni when they visit the college.

Courses

**Nondepartmental Course**

620:117 Frankfurt Exchange Program

Regular degree course work at Johann Wolfgang Goethe University, Frankfurt, West Germany; taught in German. Academic year. Arranged through Tippie College of Business. Prerequisite: at least two years of college German and business background.

**Interdepartmental Undergraduate Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>06B:000</td>
<td>Cooperative Education Internship</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>06B:001</td>
<td>Business Issues In Literature and Film</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06B:100</td>
<td>Business Issues, trends examined through fiction, biography, film, business research; ethics, diversity, gender in the workplace; downsizing, technological change, family/work conflict; leadership, teams, productivity.</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>06B:101</td>
<td>First-Year Honors Orientation</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>06B:050</td>
<td>Information Retrieval for Business</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>06B:060</td>
<td>Undergraduate Leadership Council</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>06B:105</td>
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06T:111 Data Product Design and Development 2-3 s.h.
Preparation, techniques, and technology required in using data as raw material for new products; experience in creating venture, venture plan specific to an industry.

06T:114 Strategic Management of Technology and Innovation 2-3 s.h.
Role of technology in creation, growth, and survival of industries; process, risks, and rewards of technological innovation, production, commercialization; successful approaches to developing technological strategy and products.

06T:115 Technology Applications for Entrepreneurs 2 s.h.
From database development and use to the latest in software applications and telecommunications; how to understand and evaluate the application of current and future technological resources.

06T:118 Entrepreneurial Marketing 3 s.h.
Practical marketing concepts for application in new business settings; experience developing a marketing plan, identifying markets, creating products, designing promotions and sales programs, assessing ongoing customer service needs.

06T:127 Entrepreneurship and New Business Formation 3 s.h.
The process of new venture creation; assessing one's interests, evaluating opportunity. Prerequisite: 06A:020 or equivalent.

06T:140 Writing a Successful Business Plan 1 s.h.
The business planning process; components of a business plan, strategies for writing a successful plan; how potential investors evaluate business plans.

06T:189 Capital Acquisition and Cash Flow Management 3 s.h.
Understanding the process of capital acquisition and cash flow management; techniques, applications, valuations, measurements used in both, specific applications to new and growing ventures. Prerequisites: 06A:020 or equivalent, and 06T:127.

06T:190 Seminar in Entrepreneurship 2-3 s.h.
Special topics may include business acquisition, franchising, real estate, business valuation, technology transfer.

06C:206 Innovation and Change 3 s.h.
Environment necessary for innovation; innovation applied to products, services, processes; strategies to regain competitive advantage; management of stress created by innovation and change.

06T:208 Entrepreneurship: Business Consulting 3 s.h.
Team participation in solving unique problems of early-stage opportunities; experience writing proposals, developing final reports. Prerequisite. 06T:227

06T:209 Legal Aspects of Entrepreneurship 3 s.h.
Areas of law significant to new and emerging businesses; legal system pitfalls, constraints, opportunities; overview. Prerequisite. 06T:227

06T:210 Developing Professional Service Business 2.3 s.h.
Use of professional skills and functional knowledge in creating a specialized service business. Same as 053:210.

06T:211 Data Product Design and Development 2.3 s.h.
Processes, techniques, and technology required for using data as raw material for new products; experience in creating venture, venture plan specific to an industry.

06T:214 Strategic Management of Technology and Innovation 2-3 s.h.
Role of technology in creation, growth, and survival of industries; process, risks, and rewards of technological innovation, production, commercialization; successful approaches to developing technological strategy and products.

06T:215 Technology Applications for Entrepreneurs 2-3 s.h.
From database development and use to the latest in software applications and telecommunications; how to understand the analysis, evaluation, and application of current and future technological resources.

061:218 Entrepreneurial Marketing 3 s.h.
Practical marketing concepts for application in new business settings; experience developing a marketing plan, identifying markets, creating products, designing promotions and sales programs, assessing ongoing customer service needs.

06R:219 Managing the Entrepreneurial Process 3 s.h.
Strategic choices and analysis of company objectives; focus on start-up and emerging growth companies. Prerequisites: 06T:218, 06T:227, and 06T:289.

06T:220 Corporate Venturing and Innovation 2.3 s.h.
Initiating, launching, and managing an internal venture within an organization; process and strategies for fostering innovation, change, competitive advantage in larger firms.

06T:227 Entrepreneurship: New Business Formation 3 s.h.
The process of new venture creation; assessing one's interests, evaluating opportunity. Prerequisite: 06N:215 or equivalent.

06T:240 Writing a Successful Business Plan 1 s.h.
The business planning process; components of a business plan, strategies for writing a successful plan; how potential investors evaluate business plans.

06T:289 Capital Acquisition and Cash Flow Management 3 s.h.
Understanding the process of capital acquisition and cash flow management; techniques, applications, valuations, measurements used in both, specific applications to new and growing ventures. Prerequisites: 06N:215 or equivalent, and 06T:227. Same as 06T:219.

06C:290 Seminar in Entrepreneurship 2-3 s.h.
Special topics; may include business acquisition, franchising, real estate, business valuation, technology transfer.

ACCOUNTING
Chair: Daniel W. Collins
Director, Professional Program in Accounting: Valdek C. Lembeck
Director, Ira B. McCladrey Institute: Morton Pincus
Director, Master of Accountancy program: Lynn M. Pringle
Professors: Ranji Balakrishnan (Ernst and Young Faculty Fellow), Daniel W. Collins (Henry B. Tippie Research Chair in Accounting), Douglas V. De Jong (John F. Murray Professor), W. Bruce Johnson (Arthur Andersen Professor), Valdek C. Lembeck, Albert A. Scheepmans
Associate professors: Joyce E. Berg, Morton Pincus, Richard Tobbs, Charles E. Wasley
Assistant professors: Sonja L. Olhoft, Bente Villadsen, Robert Yetman
Clinical assistant professor: Lynn M. Pringle
Lecturers: Amy An, Thomas J. Carroll, Robert Hartman

Undergraduate degree: B.B.A. in Accounting Graduates degrees: M.M.; Ph.D. in Business Administration
Web site: http://www.biz.uiowa.edu/acct

The Department of Accounting offers a broad education that prepares undergraduate and graduate students for careers in public accounting, private industry, government, nonprofit organizations, and academia.

Professional Program
The Professional Program in Accounting at The University of Iowa leads to a B.B.A. in accounting (after completion of the undergraduate degree requirements-120 semester hours) and a Master of Accountancy (M.Acc.) degree (after completion of 30 semester hours of graduate course work). Under the accountancy law effective in Iowa as of January 1, 2001, students who wish to become certified public accountants (CPAs) must complete a minimum of 150 semester hours of course work. Program descriptions are provided here for students entering the program during the junior year who wish to complete the B.B.A. degree, the M.Acc. degree, or both degrees.

The program 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 professional program provides the academic background required for leadership positions in business, government, and public accounting. It also qualifies students to sit for the Certified Public Accountant (CPA) and Certified Management Accountant (CMA) examinations.

Completion of prebusiness course work and acceptance to the Henry B. Tippie College of Business are required before entry into the Professional Program in Accounting at the beginning of the junior year. Students who have been admitted to the Tippie College of Business and wish to declare accounting as a major are admitted automatically if they have University of Iowa and cumulative grade-point averages of at least 3.00 and a B- average in 06A:001 Introduction to Financial Accounting and 06A:002 Introduction to Managerial Accounting. Those who wish to declare accounting as a major but do not have a B- average in 06A:001 and 06A:002, or do not have a University of Iowa or cumulative grade-point average of at least 3.00, may be allowed to enroll as pre-accounting majors in the first two accounting programs courses. 06A:131 Income Measurement and Asset Valuation and 06A:133 Introduction to Taxation. If they earn at least a B- average in these two courses, they are admitted to the Professional Program in Accounting.

Courses taken during the junior and senior years provide concentrated coverage of professional accounting subjects and closely related topics in commercial law, business, and information systems.

Courses taken during M.Acc. candidacy are designed to build upon the technical skills acquired during the undergraduate program, broaden the student's perspective on the role of accounting in organizations and decision making, and further develop written and oral communication skills. This course work focuses on the conceptual and economic foundations of accounting with applications to current and emerging problems of professional practice. In addition, the masters-level course work provides an opportunity to acquire added expertise in one of four areas of specialization: financial accounting/auditing, management information systems, taxation, and managerial accounting.

Students who seek admission to the M.Acc. program must apply to The University of Iowa Graduate College. Candidates applying for admission to the Graduate College must include the accountancy law effective in Iowa as of January 1, 2001, students who wish to complete the undergraduate degree program typically require three semesters of course work before becoming eligible to sit for the CPA examinations, and four semesters to complete the M.Acc. All programs are adjusted to reflect the particular academic background of each candidate.
Accounting majors in the undergraduate program are subject to the probation and dismissal rules described in the Tippie College of Business introductory section of the Catalog. Students in the M.Ac. program are subject to the probation and dismissal rules described in the Graduate College section of the Catalog.

**Bachelor of Business Administration**

This program is for students who have completed their prebusiness program at The University of Iowa and qualified students from other institutions.

Undergraduate students entering the Professional Program in Accounting must complete 60 semester hours of course work and be admitted to the Tippie College of Business. The following general prebusiness core courses must be completed prior to admission to the professional program. (A B- average in 06A:001 and 06A:002 is required for automatic admission to the Professional Program in Accounting.)

06A:001 Introduction to Financial Accounting 3 s.h.
06A:002 Introduction to Managerial Accounting 3 s.h.
06E:001 Principles of Microeconomics 3-4 s.h.
06E:002 Principles of Macroeconomics 3-4 s.h.
22N:017 Calculus and Matrix Algebra for Business 4 s.h.
22S:008 Statistics for Business 4 s.h.

Students receive the B.B.A. upon successful completion of the junior and senior years of the Professional Program in Accounting and the M.Ac. degree upon completion of the fifth year. Students should take the Graduate Management Admission Test (GMAT) during the junior year to facilitate their admission to the M.Ac. program.

**JUNIOR YEAR**

**Fall Semester**
06A:131 Income Measurement and Asset Valuation 3 s.h.
06A:133 Introduction to Taxation 3 s.h.
06A:150 Professional Orientation Seminar Series 1 s.h.
06F:100 Introductory Financial Management (must be taken during first semester in the college) 3 s.h.
Two business core requirements 6 s.h.

The business core requirements (06J:047, 06J:048, 06K:100, 06M:100) may be taken in any sequence, preferably before the senior year; 06J:047 is prerequisite to 06A:148, so it should be taken before spring semester of the senior year.

**Spring Semester**
06A:130 Accounting for Management Analysis and Control 3 s.h.
06A:132 Valuation of Financial Claims 3 s.h.
06K:180 Applied Information Systems 3 s.h.
Two business core requirements 6 s.h.

**INTERNSHIP PROGRAM FOR SENIORS**

Students who wish to integrate a formal accounting internship (06B:199) into their degree program during spring semester of the senior year should pursue the following internship study. To receive 6 semester hours of academic credit for the internship, students must have applied for admission to the M.Ac. Program and have received departmental approval before the beginning of their internship semester. Students who participate in the spring internship program normally need to attend a summer session either before or after their senior year to complete the requirements for a B.B.A. degree.

**SENIOR YEAR**

**Fall Semester**
06A:144 Auditing 3 s.h.
06A:141 Advanced Tax Topics or 06A:145 Accounting for Multi-Segment Enterprises 3 s.h.
06A:148 Business Law (or summer if offered) 3 s.h.
06J:165 Business Policy (or summer if offered) 3 s.h.
Elective(s) 3 s.h.

**Spring Semester**
06B:199 Academic Internship 6 s.h.

**SUMMER SESSION**
06A:145 Accounting for Multi-Segment Enterprises (if not taken fall semester) 3 s.h.
or 06A:146 Government and Not-for-Profit Accounting 3 s.h.
06A:148 Business Law (if not taken fall semester) 3 s.h.
06J:165 Business Policy 3 s.h.
Elective(s) 3 s.h.

**NONINTERNSHIP PROGRAM FOR SENIORS**

The following program of study should be pursued by students who do not wish to include the internship program during the senior year.

**Fall Semester**
06A:144 Auditing 3 s.h.
*Accounting elective 3 s.h.
Business core course (if not taken previously) 3 s.h.
Two or three electives 6-9 s.h.

**Spring Semester**
06A:148 Business Law 3 s.h.
06J:165 Business Policy 3 s.h.
*Accounting elective 3 s.h.
Electives 6 s.h.

*Students choose two of the three following accounting electives during their senior year.
06A:141 Advanced Tax Topics 3 s.h.
06A:145 Accounting for Multi-Segment Enterprises 3 s.h.
06A:146 Government and Not-for-Profit Accounting 3 s.h.

The accounting law effective in Iowa as of January 1, 2001, requires candidates who sit for the CPA examination to have at least a B.B.A. degree and 24 semester hours of course work in accounting beyond principles of accounting (06A:001). However, the CPA certificate is not awarded to successful candidates until they have completed 150 semester hours of course work.

**Master of Accountancy**

The Master of Accountancy (M.Ac.) is a nonthesis program that permits students sufficient flexibility to specialize in accounting areas according to their interests and objectives.

A total of 30 semester hours beyond the B.B.A. is required for completion of the M.Ac. degree. At least 12 semester hours must be in graduate-level accounting courses. A total of at least 21 semester hours in 200-level courses must be completed.

The M.Ac. program offers students who enter with an undergraduate degree in accounting the opportunity to focus their elective course work in one of four areas of specialization. The program is designed to be completed within one calendar year. Those who enter the program with a bachelor's degree in another area of business or with no prior study in business or accounting generally take two years to complete the degree. These students may exceed the minimum number of semester hours required for the M.Ac. degree in order to develop an area of specialization.

Courses leading to areas of specialization and those required for the core program are as follows. Because of the cross-disciplinary nature of the subject matter included in the areas of specialization, courses in a number of other departments are included.

**SPECIALIZATION IN FINANCIAL ACCOUNTING/AUDITING**

**Accounting Courses**
Total of 12 semester hours
All of these:
06A:221 Financial Reporting: Theory and Practice 3 s.h.
06A:230 Advanced Auditing 3 s.h.
06A:245 Financial Information and Capital Markets 3 s.h.
One of these:
06A:220 Design and Use of Cost Management Systems 3 s.h.
06A:231 Taxes and Business Strategy 3 s.h.

**Finance Courses**
Total of 6 semester hours
06N:225 Managerial Finance (requires consent of M.B.A. office) 3 s.h.
One of these:
06F:215 Corporate Finance 3 s.h.
06F:223 International Finance 3 s.h.
Management Information Systems
Total of 3-6 semester hours
22C:106 Computer Science 1 (if not already taken) 3 s.h.
Management information systems electives 3 s.h.

Electives
Total of 6-9 semester hours

SPECIALIZATION IN MANAGEMENT INFORMATION SYSTEMS
Students who specialize in management information systems must have taken a programming course (22C:106 or equivalent) before registering for 063:230, 06K:240, and 063:250. Due to the timing of course offerings, those who do not begin the M.Ac. program in the summer session should take the computer programming course while they are undergraduates. This decreases the number of required management information systems courses and increases electives by 3 semester hours in the M.Ac. program.

Accounting Courses
Total of 12 semester hours
06A:220 Design and Use of Cost Management Systems 3 s.h.
Two of these:
06A:221 Financial Reporting: Theory and Practice 3 s.h.
06A:230 Advanced Auditing 3 s.h.
06A:231 Taxes and Business Strategy 3 s.h.
One of these (not already taken):
06A:141 Advanced Tax Topics 3 s.h.
06A:145 Accounting for Multi-Segment Enterprises 3 s.h.
06A:146 Government and Not-For-Profit Accounting 3 s.h.
06A:220 Design and Use of Cost Management Systems 3 s.h.
06A:221 Financial Reporting: Theory and Practice 3 s.h.
06A:230 Advanced Auditing 3 s.h.
06A:245 Financial Information and Capital Markets 3 s.h.

Taxation Courses
Total of 12 semester hours
Both of these:
06A:231 Taxes and Business Strategy 3 s.h.
06A:241 Tax Research 3 s.h.
Six semester hours from these:
06E:176 Public Sector Economics 3 s.h.
*091:203 Income Taxation of Estates and Trusts 1-3 s.h.
091:278 Federal Tax Practice and Procedures 3 s.h.
091:351 Taxation of Partnerships and Limited-Liability Companies 1 s.h.
091:360 Taxation of Gratuitous Transfers 1-3 s.h.
091:378 Trusts and Estates 1-4 s.h.

Electives
Total of 9 semester hours
*College of Law courses (prefix 091) follow a different calendar than do business courses. Some courses may require consent of instructor.

SPECIALIZATION IN MANAGERIAL ACCOUNTING
Accounting Courses
Total of 12 semester hours
06A:220 Design and Use of Cost Management Systems 3 s.h.
Two of these:
06A:221 Financial Reporting: Theory and Practice 3 s.h.
06A:230 Advanced Auditing 3 s.h.
06A:231 Taxes and Business Strategy 3 s.h.
One of these (not already taken):
06A:141 Advanced Tax Topics 3 s.h.
06A:145 Accounting for Multi-Segment Enterprises 3 s.h.
06A:146 Government and Not-For-Profit Accounting 3 s.h.
06A:221 Financial Reporting: Theory and Practice 3 s.h.
06A:230 Advanced Auditing 3 s.h.
06A:231 Taxes and Business Strategy 3 s.h.
06A:245 Financial Information and Capital Markets 3 s.h.

Management Information Systems Courses
Total of 9-12 semester hours
22C:106 Computer Science 1 (if not already taken) 3 s.h.
Three of these:
06K:220 Introduction to Information Systems (if equivalent content has not been covered in previous course work) 3 s.h.
06K:230 Database Systems 3 s.h.
063:240 Software Engineering 3 s.h.
063:250 Computer Networks 3 s.h.

Electives
Total of 6-9 semester hours

SPECIALIZATION IN TAXATION
Accounting Courses
Total of 9 semester hours
Two of these:
06A:220 Design and Use of Cost Management Systems 3 s.h.
06A:221 Financial Reporting: Theory and Practice 3 s.h.
06A:230 Advanced Auditing 3 s.h.
One of these (not already taken):
06A:141 Advanced Tax Topics 3 s.h.
06A:145 Accounting for Multi-Segment Enterprises 3 s.h.
06A:146 Government and Not-For-Profit Accounting 3 s.h.

Total of 15 semester hours

CORE PROGRAM COURSE REQUIREMENTS
In some cases, students who transfer from other institutions upon completing their B.B.A. programs or who do not commit to the fifth year until the end of their senior year may find it difficult to complete an area of specialization in one calendar year of study. Students who do not wish to pursue an area of specialization must complete 30 semester hours beyond the B.B.A. At least 15 semester hours must be taken in graduate-level accounting courses and a total of at least 21 semester hours must be in courses at the 200 level. The following courses are required.

Accounting Courses
Total of 15 semester hours
06A:221 Financial Reporting: Theory and Practice (taken fall semester) 3 s.h.
06A:231 Taxes and Business Strategy (taken fall semester) 3 s.h.
06A:220 Design and Use of Cost Management Systems (taken spring semester) 3 s.h.
06A:230 Advanced Auditing (taken spring semester) 3 s.h.
One of these (not already taken):
06A:141 Advanced Tax Topics 3 s.h.
06A:145 Accounting for Multi-Segment Enterprises 3 s.h.
06A:146 Government and Not-For-Profit Accounting 3 s.h.
06A:245 Financial Information and Capital Markets 3 s.h.

Electives
A total of 15 semester hours is required. Students must select a minor area consisting of at least 6 semester hours.

COURSE WORK FOR STUDENTS WITHOUT UNDERGRADUATE DEGREES IN ACCOUNTING
Courses taken by students who enter the program with an undergraduate degree in accounting are determined by each student’s background and area of interest. 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 an undergraduate degree in another area of
business typically are required to take 51 semester hours in order to complete the M.Ac. program. Those with degrees outside of business and with no accounting courses typically are required to take 60 semester hours.

Admission

Students enrolled in the UI undergraduate degree program in accounting must apply before the beginning of their senior year. Students must have applied to the M.Ac. program and received departmental approval in order to receive credit for the internship program taken during spring semester of the senior year. Students who have received B.B.A. degrees from other institutions and those who choose not to participate in the internship program may apply during their senior year.

Admission to the M.Ac. program is competitive. The admissions committee reviews applications on an individual basis, looking at both quantitative aspects (grade-point average and GMAT scores) and qualitative aspects of each applicant’s background and professional experience (if applicable). In reviewing applications, the committee seeks to assess an individual’s potential for academic success and future professional growth. Candidates should provide three letters of recommendation from individuals capable of evaluating their academic potential.

Admission to the program requires acceptance to the Graduate College.

APPLICATION MATERIALS

Applicants to the Master of Accountancy program must submit a completed application file, including the following: an application to the Graduate Admissions Office (a copy of the application must be submitted to the Department of Accounting); official transcripts of all undergraduate and graduate course work submitted to the Office of Admissions by each institution attended; official Graduate Management Admission Test (GMAT) scores submitted to the Office of Admissions; the supplemental application form with essay, responses, and a resume and cover letter; and at least three letters of reference from former instructors or employers. Undergraduate accounting majors at The University of Iowa do not need to provide letters of reference.

Applicants whose first language is not English must submit an official score of 600 or higher on the Test of English as a Foreign Language (TOEFL).

Application packets are available from the University’s Office of Admissions.

APPLICATION DEADLINES

Students may enter in fall, spring, or summer. Application deadlines are as follows:

February 1 - International applicants for spring enrollment.
May 1 - U.S. citizens and permanent residents applying for summer enrollment.
July 15 - U.S. citizens and permanent residents applying for fall enrollment.

October 1 - International applicants for spring enrollment.
December 1 - U.S. citizens and permanent residents applying for spring enrollment.

Joint Accounting and Law Program

The Department of Accounting and the College of Law offer a joint program that leads to an M.Ac. degree and a J.D. degree. Students in the program may apply up to 12 semester hours of law courses as electives in the Master of Accountancy program, and up to 12 semester hours of graduate accounting courses as electives in the J.D. program. A minimum of 18 semester hours of graduate course work in accounting is required for the joint J.D.-M.Ac. degree. To participate in the joint program, students must be enrolled in the College of Law and must gain admission to the Graduate College.

Graduate Program

Doctor of Philosophy

Students majoring in accounting may earn a Ph.D. in business administration. For information about degree requirements, see “Interdepartmental Graduate Programs” in the Tippie College of Business introductory section of the Catalog.

Faculty

The department’s faculty members maintain currency in their discipline through active participation in the production and dissemination of accounting-related knowledge. They keep abreast of the latest developments in the field of education and the profession through participation in educational conferences and seminars and publication in leading academic journals.

Courses

Primarily for Undergraduates

06A:000 Cooperative Education Internship 0 s.h.
06A:001 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.
06A:002 Introduction to Managerial Accounting 3 s.h. Basic topics in cost behavior, measurement, accumulation; use of cost data for relevant analysis, budgeting, performance evaluation. Prerequisites: 06A:001, 06E:001, and 22M:017.
06A:020 Accounting for Nonbusiness Students 3 s.h. Financial and managerial accounting: financial statements—their elements, format, interrelationship, interpretation, and uses; analyzing corporate annual reports; cost/volume/profit relationships; decision analysis, performance evaluation.

06A:113 Taxes and Business Decisions 3 s.h. Tax concepts, emphasis on tax-planning opportunities, pitfalls inherent in common management decisions. Nonmajor status or consent of adviser required. Prerequisite: 06A:002 or equivalent.
06A:120 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. Nonmajor status or consent of adviser required. Prerequisite: 06A:002 or equivalent.
06A:130 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. Admission to professional program in accounting required. Prerequisites: 04E:071 and 08K:070.
06A:131 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. Admission to Professional Program in Accounting or pre-accounting standing required.
06A:133 Introduction to Taxation 3 s.h. Federal income taxation; individual, corporate, partnership, income tax laws, regulations; emphasis on developing a broad perspective on structure, administration, rationale of federal income tax system. Admission to Professional Program in Accounting or pre-accounting standing required.
06A:141 Advanced Tax Topics 3 s.h. Taxation of corporations, partnerships from organization through liquidation; relative merits of conducting business through partnership, corporation, proprietorship, S corporation; introduction to tax research. Senior standing required. Prerequisite: 06A:131.
06A:144 Auditing 3 s.h. General framework underlying auditing, role of audit standards in planning and conduct of audits, effect of regulation, ethics, liability, an audit practices. Senior standing required. Prerequisite: 06A:132.
06A:145 Accounting for Multi-Segment Enterprises 3 s.h. Accounting and reporting standards, practices for business combinations, multinational enterprises, joint ventures, partnerships, business segments, other organizational forms. Senior standing required. Prerequisite: 06A:132.
06A:146 Government and Not-for-Profit Accounting 3 s.h. Accounting and financial reporting procedures used by government and not-for-profit entities; role of SEC in accounting regulation. Senior standing required. Prerequisite: 06A:131 or 06A:240.
06A:148 Business Law 3 s.h. Contracts, sales, debtor-creditor relations, business organizations, other aspects of law applied to business. Senior standing required. Prerequisite: 06A:047.
06A:150 Professional Orientation Seminar Series 1 s.h. Overview of careers in accounting, how accounting information is used in today’s business world; the M.Ac. program and tracks, internships, technical and personal skills. Offered fall semesters. Corequisite: 06A:131 or 06A:132.
06A:170 Special Topics in Accounting arr. Consent of instructor required.
Primarily for Graduate Students

06A:220 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 firms manage their costs, processes, and people. Prerequisite: 06A:130 or 06A:235 or consent of instructor.

06A:221 Financial Reporting: Theory and Practice 3 s.h.

06A:230 Advanced Auditing 3 s.h.
Advanced issues such as ethics, independence, regulation and litigation, audit evidence, models of audit testing, graduate standing in business required. Prerequisite: 06A:144.

06A:231 Taxes and Business Strategy 3 s.h.
Effect of taxes on business decisions, including investment strategies, financial policies, emphasis on tax planning, evaluating tax consequences of business decisions. Graduate standing in business required. Prerequisite: 06N:215 or consent of instructor.

06A:232 Contemporary Issues in Accounting 3 s.h.
Accounting/reporting issues being addressed by FASB, recognition and measurement issues related to derivative financial instruments, measuring and reporting comprehensive income, improving disclosure effectiveness. Graduate standing in business required. Prerequisite: 06A:235 or equivalent or consent of instructor.

06A:240 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. Prerequisite: 06N:215 or consent of instructor.

06A:241 Tax Research 3 s.h.
Deciding what research is needed, evaluating tax materials, developing facility with electronic and printed tax materials. Prerequisite: for undergraduates, 06A:141.

06A:245 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. Prerequisite: 06A:240 or equivalent.

06A:286 Seminar in Accounting Research arr.
Forum on current research in accounting, related disciplines, faculty, student, guest papers, Ph.D. dissertation proposals. Open only to doctoral students.

06A:287 Seminar in Selected Accounting Topics arr.
Individual study, research paper preparation Doctoral student standing and consent of instructor required.

Doctoral student standing and consent of instructor required.

ECONOMICS

Chair: Stephen D. Williamson
Professors: William P. Albrecht, Carol C. Fethke, Gary C. Fethke, Robert Forsythe (Leonard A. Hadley Chair in Leadership), John W. Fuller, John F. Geweke (Harlan L. McGregor Professor of Economic Theory), Joel L. Horwitz (Henry B. Tippie Research Professor in Economics), Hyman Joseph, Forrest D. Nelson, George R. Neumann (George Daly Professor of Economics), Thomas F. Pogue, Raymond G. Riezman, N.E. Savin (George Daly Professor of Economics), Charles H. Whiteman (Pioneer H-Bred Professor of Financial Economics), Stephen D. Williamson (Chester A. Phillips Professor of Financial Economics)

Professors emeriti: Gerald L. Nordquist, Larry Sgontz, Calvin D. Siebert, S.Y. Wu

Adjunct professor: J. Richard Zecher

Associate professors: Michael S. Balch, Marlynne Beth Ingram, Harry J. Piersch, John L. Solow

Assistant professors: April M. France, Christopher M. Sleet, Ted P. Temzelides

Undergraduate degrees: B.A., B.S.

Undergraduate nondegree program: minor in Economics

Graduate degrees: M.A., Ph.D. in Economics

Web site: http://www.biz.uiowa.edu/econ

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.

Undergraduate Programs

The baccalaureate programs in economics provide 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.

The department offers three undergraduate degrees in economics—the Bachelor of Arts (B.A.) and Bachelor of Science (B.S.) in the College of Liberal Arts and the Bachelor of Business Administration (B.B.A.) in the Henry B. Tippie College of Business.

The B.A. program is designed to achieve a balance between economic theory, mathematical tools, and field applications. The B.S. program maintains the same balance but places more emphasis on developing analytic tools; it prepares students for graduate work in economics or related business and technical fields. The B.B.A. emphasizes the economic foundations of the business fields: accounting, finance, marketing, business law, and management.

The requirements for the B.B.A. are described here; those for the B.A. and B.S. are described in the College of Liberal Arts section of the Catalog. In planning a program of study, students should be aware that the order in which courses are taken is important; some courses are prerequisites for others. The Handbook for Economics Majors, available from the department office, offers help in planning an economics degree program.

Bachelor of Business Administration

In addition to the common requirements of the Tippie College of Business, the B.B.A. in economics requires 18 semester hours in 100-level economics courses, including the following.

06E:100 Economics for Business

Decision Making 3 s.h.

06E:104 Microeconomic Theory 3 s.h.

06E:105 Macroeconomics 3 s.h.

Two field courses numbered from 06E:170 through 06E:189 6 s.h.

Graduate Programs

Master of Arts

The Master of Arts is offered only to students working toward a Ph.D. or to those who earn a joint degree with geography or law.

Joint M.A. Programs

The department collaborates with the Department of Geography in a joint M.A. and with the College of Law in a joint M.A.-J.D. In these programs, the economics department accepts up to 9 semester hours of course work from the other academic units as credit toward the M.A. in economics, and the other academic units accept graduate credits in economics toward their degrees.

Doctor of Philosophy

The Ph.D. program is designed to provide rigorous training in microeconomics, macroeconomics, mathematics, economics, and econometrics. In addition, students select a major area for intensive study and specialization. The program has four components: a coordinated sequence of core courses, a set of major field courses, examinations and papers, and a dissertation. Applications for admission and financial support are considered any time until February 15 for fall semester enrollment.
**Courses**

**Primarily for Undergraduates**

Note: 06E:001 and 06E:002 may be taken in either order or they may be taken simultaneously; they are approved for General Education in social sciences.

06E:000 Cooperative Education Internship 0 s.h.

06E:001 Principles of Microeconomics 3-4 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. GE: social sciences (except for B.B.A. students).

06E:002 Principles of Macroeconomics 3-4 s.h.
- National income and output, employment and inflation; money, credit, government finance; monetary, fiscal policy; economic growth, development; international finance. GE: social sciences (except for B.B.A. students).

06E:007 Contemporary Economic Problems and Policy 3 s.h.
- Economic concepts developed and applied to analysis of current social problems, issues, policies; representative topics include: jobs versus environment, free trade versus protectionism, the war on drugs, American competitiveness, health care delivery costs and choices. GE: social sciences (except for B.B.A. students).

06E:029 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). Open only to first- and second-semester students.

06E:050 Introduction to Economic and Social Statistics 3 s.h.
- Statistical methods applied to problems in economics; regression analysis, contingency tables and goodness of fit tests, simple time series and index-number construction, survey and methods. Same as 044:085.

06E:071 Statistics for Strategy Problems 3 s.h.
- Decision analysis (Should McDonald’s market pizza?); regression (Will an increase in my GPA increase my income?); business forecasting (Should I invest in high-definition television?), analysis of variation (Something is not normal here?). Prerequisites: 22M:017 and 22S:008.

06E:099 Internship 3 s.h.
- Open only to students participating in the Washington Center for Learning Alternatives and other approved internship programs. Consent of undergraduate director required.

06E:100 Economics for Business Decision Making 3 s.h.
- Economic theories of consumer demand, producer behavior, and market equilibrium, with emphasis on applications to business decision making; organization and incentives, market imperfections and government policy; input markets. Junior standing required. Prerequisites: 06E:001 and 22M:017.

06E:104 Microeconomic Theory 3 s.h.
- Economic theory of consumer behavior, producer behavior, role of markets in coordinating economic decisions; conditions for efficient resource allocation by market mechanisms; market imperfections, strategic behavior. Prerequisites: 06E:001 and 22M:017, or consent of instructor.

06E:105 Macroeconomic Theory 3 s.h.
- Measurement of national product, unemployment, inflation; determination of national income, price level; role of stabilization policies; economic growth, dynamics of inflation. Prerequisites: 06E:002 and 22M:017, or consent of instructor.

06E:111 Labor 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: 06E:001 and 06E:002, or consent of instructor.

06E:113 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: 06E:001 and 06E:002, or consent of instructor.

06E:117 Money, Banking, and Financial Markets 3 s.h.
- Role of money, institutions in determination of income, employment, prices in domestic and world economy. Prerequisites: 06E:001 and 06E:002, or consent of instructor.

06E:119 Economics of the Government Sector 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: 06E:001 and 06E:002, or consent of instructor.

06E:125 International Economics 3 s.h.
- Foreign exchange, balance of payments; international monetary arrangements, policy; theory of international trade; role of tariffs, restrictions in international trade. Prerequisites: 06E:001 and 06E:002, or consent of instructor.

06E:129 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: 06E:001 and 06E:002, or consent of instructor.

06E:133 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: 06E:001 and 06E:002, or consent of instructor.

06E:135 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: 06E:001 and 06E:002, or consent of instructor.

06E:141 Economics of American Industries 3 s.h.
- Structural evolution; imperfect competition, resource allocation; development of public policy on monopoly; selected industries. Prerequisites: 06E:001 and 06E:002, or consent of instructor.

06E:145 Introduction to the Economics of Transportation 3 s.h.
- Transportation markets—intensity, rural, urban, transportation modes—railway, air, water, pipeline; issues in environmental and economic regulation, finance, policy, management, physical distribution. Same as 044:133, 102:135.

06E:150 Introduction to Economic History 3 s.h.
- Western economic development from antiquity to present; evolution of population, technology, business organization, production, trade; dynamics of economic system methodology. Prerequisite: 06E:001 and 06E:002, or consent of instructor.

06E:164 Economics in Transition 3 s.h.
- Emerging markets in Asia and Latin America; the role of capital markets in economic development; economic growth’s dependence upon development of financial markets, institutions; major factors affecting evolution, functioning of financial systems. Prerequisites: 06E:001 and 06E:002, or consent of instructor.

06E:171 Antitrust: Legal and Economic Analysis 3 s.h.
- Topics in federal antitrust policy; merger policy, monopolization, predatory pricing, collusion, vertical restrictions, resale price maintenance, enforcement; case law, economics literature. Prerequisite: 06E:100 or 06E:104 or 091:208 or consent of instructor. Same as 091:201.

06E:172 Law and Economics 2-3 s.h.
- Law examined through analytic tools of microeconomics; impact of legal rules on resource allocation, risk bearing, distribution of economic well-being. Prerequisite: 06E:000 or 06E:104 or consent of instructor. Same as 091:295.

06E:173 Advanced International Economics 3 s.h.
- Neoclassical model of international trade, theory of comparative advantage, role of trade barriers, balance of payments, foreign exchange, macroeconomic policy in an open economy. Prerequisites: 06E:000 or 06E:104, and 06E:105; or graduate standing.

06E:174 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. Prerequisite: 06E:105 or consent of instructor.

06E:175 Economic Analysis of Labor Markets 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: 06E:100 or 06E:104, and elementary calculus and statistics.

06E:176 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: 06E:104 and 06E:105, or consent of instructor.

06E:177 Industrial Organization 3 s.h.
- Market structure; effects of business practices, informational problems on market structure; appraisal of antitrust policies, government regulation of business. Prerequisite: 06E:100 or 06E:104.

06E:178 American Economic History 3 s.h.
- Emphasis on role of population, technology. Prerequisites: 06E:000 or 06E:104 for economics majors; 06E:001 and 164:002 for non-economics majors. Same as 161A:144.

06E:179 History of Economic Thought 2.3 s.h.
- Evolution of economics as a social science; ideas of Smith, Ricardo, Malthus, Marx, Marshall, Keynes, and their major critics. Prerequisite: 06E:000 or 06E:104 or 06E:105.

06E:184 Introduction to Econometrics 3 s.h.
- Single equation linear structural models, estimation and hypothesis testing; serial correlation, heteroscedasticity, generalized least squares estimation; specification analysis; errors in variables; emphasis on interpretation of econometric models, methods, use of computers. Prerequisite: 22S:120 or equivalent.

06E:187 Introduction to 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. Prerequisite: 06E:100 or 06E:104 or consent of instructor.

06E:189 Topics in Economics 3 s.h.
- Consent of instructor required.
For Advanced Undergraduates

06E:197 Honors Seminar arr. Consent of instructor required.
06E:198 Senior Thesis in Economics arr. Consent of instructor required.
06E:199 Readings and Independent Study In Economics arr. Consent of instructor required.

Primarily for Graduate Students

With consent of the department chair, qualified undergraduates may enroll in courses listed for graduate students.

06E:200 Mathematics for Economists I 3 s.h.
Constrained optimization, difference equations, differential equations, dynamic optimization.

06E:201 Statistical Methods 3 s.h.
Probability theory, statistical inference, linear regression model, econometric methods. Prerequisites: one year of calculus and matrix algebra.

06E:203 Microeconomics I 3 s.h.
Price theory; emphasis on problem formulation and solving, economic intuition; producer and consumer behavior; competitive and noncompetitive markets, welfare economics. Offered fall semesters. Consent of instructor required.

06E:204 Macroeconomics I 3 s.h.
Economic growth, business cycles, money and inflation. Offered fall semesters. Consent of instructor required.

06E:205 Microeconomics II 3 s.h.
Neoclassical paradigm; axioms, essential conclusions; limitations of paradigm, alternative theories. Offered spring semesters. Prerequisite: 06E:200 or 06E:203 or one year of calculus.

06E:206 Macroeconomics II 3 s.h.
Dynamic macroeconomic models; stochastic macroeconomics; time consistency; equilibrium business cycle theory. Offered spring semesters. Prerequisite: 06E:204 or consent of instructor.

06E:211 Mathematical Economics I 3 s.h.
Convex analysis in economic theory; ordinal and cardinal preference relations; quasiconcave, concave numerical representations; separation principle for convex sets-linear programming, concave programming; Brouwer fixed point theorem; existence of competitive equilibrium. Prerequisites: 06E:201 and 06E:205.

06E:212 Mathematical Economics II 3 s.h.
Theories of n-person games, noncooperative or cooperative; applications to general economic equilibrium analysis. Prerequisite: 06E:211.

06E:221 Econometrics 3 s.h.
Statistical inference in single and multiple equation stochastic models, models with nonindependent or nonnecessarily distributed error structure, dynamic models; OLS, GLS, IV, ML estimation; asymptotic distribution theory; exact, asymptotic hypothesis tests. Prerequisites: 228:154 or equivalent.

06E:222 Applied Econometrics 3 s.h.
Empirical problems; multiple linear regression, nonlinear regression, maximum likelihood, hazard functions, univariate and multivariate time series, flexible functional forms. Prerequisite: 06E:221.

06E:223 Econometric Theory I 3 s.h.
Statistical theory underlying econometric inference; emphasis on estimation, hypothesis testing in linear models. Prerequisite: 06E:221.

06E:234 International Business-M.B.A. 3 s.h.
Problems in international business; how to export; how to deal with import competition; international joint ventures; country studies. Consent of instructor required.

06E:235 International Trade Theory 3 s.h.
Tariff theory and policy. Consent of instructor required.

06E:236 International Monetary Economics 3 s.h.
Balance of payments adjustment; exchange controls; international investment, macroeconomics in an “open” economy. Consent of instructor required.

Advanced Graduate Seminars

06E:310 Seminar in Economic Theory arr. Consent of instructor required.

06E:321 Workshop in Macroeconomics 1 s.h.
Consent of instructor required.

06E:322 Workshop In Macro and Monetary Economics 1 s.h.
Consent of instructor required.

06E:241 Macroeconomics III 2-6 s.h.
Current research in macroeconomics; development of research topics with emphasis on theoretical and empirical analysis. Prerequisites: 06E:205 and 06E:221.

06E:245 Monetary Theory 2-3 s.h.
Research at the frontier of monetary theory and policy; overlapping generations models, search models of money, representative agent monetary models, intermediation and banking theory, and financial contracts. Prerequisites: 06E:205, and 06E:184 or 06E:221.

06E:250 Labor Economics 3 s.h.
Problems and models, including intertemporal models of labor markets; uncertainty and labor market activity; retirement decisions, economic theories of fertility; economics of discrimination; job search models; economic models of unions; bargaining and strikes, public sector labor market determinants of income distribution; emphasis on empirical verification of theory. Prerequisites: 06E:205, and 06E:184 or 06E:221.

06E:251 Labor Economics 3 s.h.
Current research, with emphasis on prospects for original research; may include life cycle models of labor supply, dynamic labor demand models, compensating wage differentials, labor turnover, cyclical employment fluctuations, aspects of collective bargaining. Prerequisites: 06E:205, and 06E:184 or 06E:221.

06E:263 Economic History 3 s.h.
Western economics; emphasis on population trends and labor force growth; evolution of capital markets, patterns of capital accumulation, resultant rates of economic growth; analyses of technological progress, growth of open economies. Consent of instructor required.

06E:271 Industrial Organization 2-4 s.h.
The firm, monopolistic competition, oligopoly and workable competition, industrial organization, nature of equilibrium under uncertainty. Prerequisites: 06E:205 and 06E:211.

06E:272 Economics of Organization 2-4 s.h.
Theoretical design of mechanisms for achieving efficient allocations within organizations, and development of empirical frameworks to implement such mechanisms; applications to problems in industrial organization and labor economics. Prerequisites: 06E:201 and 06E:205.

06E:281 Economics of the Government Sector 3 s.h.
Role and effects of major taxes on allocation of resources, distribution of income, economic growth and stability; debt finance as an alternative to tax finance. Prerequisite: 06E:205.

06E:299 Contemporary Topics in Economics 3 s.h.
Topics not offered in other courses. Consent Of instructor required.

06E:300 Readings in Economics arr. Consent of instructor required.

06E:301 Thesis in Economics arr. Consent of instructor required.

FINANCE

Chair: Jarjisu Sa-Aadu
Professors: Jarjisu Sa-Aadu (Justice Professor of International Business), Michael J. Stutzer, Emmett J. Vaughan (Partington Professor), Anand M. Vihj, Paul A. Weller (John F. Murray Professor)

Associate professors: Walter Krause, Charles E. Marberry, Robert M. Soldowsky, Richard A. Stevenson

Clinical professors: James R. Ledinsky, John H. Spitzer

Associate professors: David Bates, Thomas J. George, Puneet Handa, Thomas Rietz, Gerry L. Suchanek, Toni M. Whited

Associate professor emeritus: G. Carl Schweser

Assistant professors: Matthew T. Billett, Jon A. Garfinkel, Todd Houge, Ashish Tiwari

Undergraduate degree: B.B.A. in Finance
Graduate degrees: M.B.A.; Ph.D. in Business Administration

Web site: http://www.bsi.uiowa.edu/finance

Undergraduate Program

The undergraduate finance program provides a balance of theory, applications, and financial information technology to facilitate the transition from classroom to workplace.

Through fundamental finance principles and state-of-the-art financial markets information technologies, students develop analytical skills to interpret financial markets data, implement the latest trading and investment strategies, and make effective managerial decisions in national as well as international settings.

Careers for students majoring in finance include corporate treasury operations, cash management, mergers and acquisitions, investment banking, sales and security trading, risk management, commercial banking and financial services, credit analysis, mortgage lending, financial planning, consulting, public administration, and venture capital.

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.

Requirements for the Bachelor of Business Administration with a finance major (20 semester hours) are as follows.

06F:110 Financial Information Technology 2 s.h.

06F:111 Investment Management 3 s.h.

06F:117 Corporate Finance 3 s.h.

Three of these:

06F:112 Security Analysis 3 s.h.

06F:113 Markets for Fixed Income Securities 3 s.h.

06F:114 Commercial and Investment Banking 3 s.h.

06F:116 Futures and Options 3 s.h.

06F:126 Real Estate Process 3 s.h.

06F:130 International Finance 3 s.h.

06A:120 Financial Accounting Reporting 3 s.h.

06F:111 Investment Management 3 s.h.

06F:117 Corporate Finance 3 s.h.

Three of these:

06F:112 Security Analysis 3 s.h.

06F:113 Markets for Fixed Income Securities 3 s.h.

06F:114 Commercial and Investment Banking 3 s.h.

06F:116 Futures and Options 3 s.h.

06F:126 Real Estate Process 3 s.h.

06F:130 International Finance 3 s.h.
Graduate Program

Students majoring in finance may earn a Ph.D. in business administration. For information about degree requirements, see “Interdepartmental Graduate Programs” in the Tippie College of Business introductory section of the Catalog.

Courses

Primarily for Upper-Division Undergraduates

06F:000 Cooperative Education Internship 0 s.h.

06F:100 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; Junior standing required. Prerequisites: 06A:002, 06E:001, and 06E:002.

06F:101 Directed Readings in Finance arr.

Individually guided readings in selected topics. Consent of instructor required.

06F:102 General Insurance 3 s.h.

Theory of risk, risk bearing; arrangements for dealing with risk; insurance industry; types and functions of insurers, government regulation; social insurance; features of insurance contracts. Prerequisites: 06E:001 and 06E:002.

06F:110 Financial Information Technology 2 s.h.

Applications of commonly used financial software and data systems reviewed by student teams. Finance major or consent of instructor required. Prerequisite: 06F:100.

06F:111 Investment Management 3 s.h.

Investment in marketable securities in domestic and international markets; financial markets, securities trading, evaluation of risk/return tradeoff, formulation and implementation of investment strategies, efficient portfolio formation. Prerequisite: 06F:100 or consent of instructor. Corequisite: 06F:110.

06F:112 Security Analysis 3 s.h.

Valuation of financial securities using cases and financial information technology; macroeconomic and industry analysis, regulatory analysis, financial statement analysis, technical analysis, trading securities, active portfolio management, performance evaluation. Prerequisite: 06F:111.

06F:113 Markets for 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. Prerequisite: 06F:100 or consent of instructor. Corequisite: 06F:110.

06F:114 Commercial and Investment Banking 3 s.h.

Management of commercial banks and financial services firms; investment banking; asset and liability management, credit policy, capital risk, liquidity planning; use of swaps and derivatives to hedge interest rate risk, global banking, investment strategies. Prerequisite: 06F:100 or consent of instructor. Corequisite: 06F:110.

06F:116 Futures and Options 2.5 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 Prerequisite: 06F:111 or consent of instructor.

06F:117 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, collateral debt, warrants. Prerequisite: 06F:100 or consent of instructor. Corequisite: 06F:110.

06F:126 Real Estate Process 3 s.h.

Fundamentals of real estate finance and investments; economic base analysis, asset market analysis, mortgage analysis, mortgage markets, underwriting, alternative mortgages, mortgage-backed securities, real estate securitization, land development, valuation principles, investment analysis, tax consideration, portfolio management. Prerequisite: 06F:100 or consent of instructor. Corequisite: 06F:110.

06F:130 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. Prerequisite: 06F:100 or consent of instructor. Corequisite: 06F:110.

06F:201 Directed Readings in Finance arr.

Open only to nonthesis M.A. candidates. Consent of instructor required.

06F:205 Financial Information Technology 0 s.h.

Applications of commonly used financial software and data systems reviewed by student teams.

06F:212 Investment Management 3 s.h.


06F:213 Futures and Options 3 s.h.

Use of options, futures, and other derivative securities in financial management; types of derivative securities, markets, trading technology, applications of risk management and speculation; pricing relations with underlying securities. Prerequisite: 06N:225 or consent of instructor. Corequisite: 06F:210.

06F:214 Real Estate Finance and Investments 3 s.h.

Structuring real estate finance and investments; mortgage markets and pricing, mortgage-backed securities, development process, real estate valuation, tax effects, securitized real estate, real estate cycles, application of derivative instruments, strategic asset allocation. Prerequisite: 06F:126 or 06N:225 or consent of instructor. Corequisite: 06F:210.

06F:215 Corporate Finance 3 s.h.

Structural problems and cases in corporate financial policy decisions; financial decision models, current and fixed asset administration, cost of capital, capital budgeting, dividends, cash flow projections, cash management, mergers and acquisitions. Prerequisite: 06N:225 or consent of instructor. Corequisite: 06F:210.

06F:216 Fixed Income Securities 3 s.h.

Theories of fixed income securities, term structure of interest rates; asset pricing models, valuation of fixed income securities, valuation of contingent claims, fixed income portfolio management. Prerequisite: 06N:225 or consent of instructor. Corequisite: 06F:210.

06F:217 Bonds and Interest Rate Derivatives 3 s.h.

Advanced tools for managing interest rate risk and models of interest rate dynamics applied to fixed-income securities, fixed-income derivatives; projects in fixed income management. Prerequisite: 06F:212 or consent of instructor.

06F:218 Advanced Corporate Finance 3 s.h.

Advanced corporate finance; applied management; financial instruments and innovations; IPOs, SEOs, mergers and acquisitions, leverage buyouts, capital structure, dividend policy, corporate restructuring, treasury operations, risk, real options, corporate control, executive compensation. Prerequisite: 06N:225 or consent of instructor. Corequisite: 06F:210.

06F:219 Capital Acquisition and Cash Flow Management 3 s.h.

Process of capital acquisition and cash flow management; techniques, applications, projections, valuations, and measurements, with specific application to new and growing ventures. Prerequisites: 06F:212, 06F:215, and 06N:225. Same as 06F:220.

06F:220 Investment Banking and Financial Institutions 3 s.h.


06F:221 Applied Securities Management I 3 s.h.

Hands-on approach to portfolio management; setting goals, trading securities, developing programs to evaluate fund performance. First of a two-semester sequence; must be followed by 06F:222. Consent of instructor required. Prerequisite: 06N:225.

06F:222 Applied Securities Management II 3 s.h.

Continuation of 06F:221, which is prerequisite. Consent of instructor required.

06F:223 International Finance 3 s.h.


06F:224 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. Prerequisite: 06N:225 or consent of instructor.

06F:225 Finance Theory I 3 s.h.

Options valuation; financial leverage, market efficiency and information economics, term structure models, capital market equilibrium models, corporate finance issues; emphasis on theory Open only to doctoral students.

06F:226 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; options pricing theory; state preference model. Open only to doctoral students.

06F:227 Finance Theory II 3 s.h.

Continuous time theories of financial markets, including connection between a” arbitrage free pricing system and martingales; pricing of contingent claims, general equilibrium and term structure theory. Open only to doctoral students.

06F:228 Advanced Empirical Finance 3 s.h.

Market efficiency and term structure theory tests; tests of asset pricing models, dividend policy and financial structure issues. Open only to doctoral students.

06F:229 Seminar in Finance 0 s.h.

Open only to doctoral students.

06F:250 Thesis in Business 0 s.h.

Open only to doctoral students.


Consent of instructor required.
Management and Organizations • Tippie College of Business 313

Management and Organizations

Chair: Sara L. Rynes
Professors: Jay Christensen-Szalanski, John T. Delaney, Nancy R. Hauskam (Williams Teaching Professor), Timothy A. Judge (Stanley M. Howe Professor in Leadership), Lola L. Lopes (Marvin and Rose Lee Pomerantz Professor in Business Administration), Michael K. Mount (Henry B. Tippie Professor), Frank L. Schmidt (Ralph L. Sheets Professor), Jude P. West
Clinical associate professor: Lon Moeller
Assistant professors: Terry L. Bole, Kenneth G. Brown, Amy Kristof-Brown, Marvin Washington
Undergraduate degree: B.B.A. in Management Administration
Graduate degrees: M.B.A.; M.A., Ph.D. in Business Administration

Web site: http://www.biz.uiowa.edu/manorg

Students majoring in management take courses of study that deal with human resource management; individual, team, and organizational behavior; employment law and ethics; leadership and personal development; negotiations; training and development; and organizational design. The program is designed to give students a thorough background in these 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.

The management major prepares students for a variety of line, staff, and professional positions in business, consulting firms, government, nonprofit institutions, and education. Work areas for which graduates are qualified include general management, human resource management, strategic reward systems, staff benefits, organizational staffing, performance appraisal, training and development, career management, managing union employees, and employing law.

Undergraduate Program

Requirements for the Bachelor of Business Administration with a major in management are as follows (total of 18 semester hours).

06J:163 Organizational Design and Transformation 3 s.h.
06J:171 Strategic Reward Systems 3 s.h.

Graduate Programs

Master of Arts

A Master of Arts in human resource management/organizational behavior is awarded as a special nonthesis degree only to students who have begun the Ph.D. program and who elect not to continue. The M.A. is not available to incoming students.

Doctor of Philosophy

Students majoring in human resource management and organizational behavior may earn a Ph.D. in business administration. For information about degree requirements, see “Interdepartmental Graduate Programs” in the Henry B. Tippie College of Business introductory section of the Catalog.

Courses

Primarily for Upper-Division Undergraduates

060:000 Internship in Management and Organizations 0 s.h.
06J:047 Introduction to Law 3 s.h.
General history, structure of law; law’s action in guiding changing economic, social patterns. Sophomore standing required.
06J:048 Introduction to Management 3 s.h.
Prerequisites: business core courses.
06J:130 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: 06J:131.
06J:131 Strategic Human Resource Management 3 s.h.
People management practices, policies, and practices that promote effective organizations; how changes in technology, business restructuring, legal and social concerns, other issues affect human resource management. Prerequisites: 06J:131.
06J:132 Law and Ethics in Management 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: 06J:131.
06J:145 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. Prerequisite: 06J:131.

06J:152 Collective Bargaining 3 s.h.
Labor relations; theories of collective bargaining, techniques related to negotiations, dispute resolution; emphasis on union/management dynamics. Prerequisite: 06J:131.

06J:156 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. Prerequisite: 06J:131.
06J:160 Staffing Organizations 3 s.h.
Principles of management, organizational structure, decision making, leadership, line-staff relationships, administration of organizations. Sophomore standing required.
06J:162 Leadership and Personal Development 3 s.h.
Principles of management, organizational structure, decision making, leadership, line-staff relationships, administration of organizations. Sophomore standing required.
06J:171 Strategic Reward Systems 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; nomenetary forms of reward. Prerequisite: 06J:131

06J:252 Collective Bargaining 3 s.h.
Labor relations; theories of collective bargaining, techniques related to negotiations, dispute resolution; emphasis on dynamics of union-management interaction. Prerequisite: 06J:212.
06J:256 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. Consent of instructor required for non-M.B.A. students.
06J:257 Legal Issues in Human Resource Management 3 s.h.
Laws, regulations governing human resource management policies, practices; employee discipline, termination, layoffs, privacy, involvement programs; occupational safety and health; workers’ compensation; discrimination. Prerequisite: 06J:212.
06J:260 Staffing Organizations 3 s.h.
Principles of management, organizational structure, decision making, leadership, line-staff relationships, administration of organizations. Sophomore standing required.
06J:262 Leadership and Personal Development 3 s.h.
Managerial skills to enhance individual, organizational effectiveness. Prerequisite: 06J:212.

Primarily for Graduate Students

06J:201 Directed Readings in Management and Organizations 3 s.h.
Open only to nonthesis M.B.A. students.
06J:205 Contemporary Topics in Management and Organizations 3 s.h.
Ph. D. seminar; research topics in human resources and organizational behavior.
06J:243 Dynamics of Consulting 3 s.h.
Consulting models, trends, processes; characteristics of internal versus external consulting services; integration of behavioral and organizational principles into organizational change programs. Prerequisite: 06N:212.
06J:245 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. Prerequisite: 06N:212.
06J:252 Collective Bargaining 3 s.h.
Labor relations; theories of collective bargaining, techniques related to negotiations, dispute resolution; emphasis on dynamics of union-management interaction. Prerequisite: 06N:212.
06J:256 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. Consent of instructor required for non-M.B.A. students.
06J:257 Legal Issues in Human Resource Management 3 s.h.
Laws, regulations governing human resource management policies, practices; employee discipline, termination, layoffs, privacy, involvement programs; occupational safety and health; workers’ compensation; discrimination. Prerequisite: 06N:212.
06J:260 Staffing Organizations 3 s.h.
Principles of management, organizational structure, decision making, leadership, line-staff relationships, administration of organizations. Sophomore standing required.
06J:262 Leadership and Personal Development 3 s.h.
Managerial skills to enhance individual, organizational effectiveness. Prerequisite: 06N:212.
Management and Organizations

06J:263 Organizational Design and Transformation 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. Prerequisite: 06N:212.

06J:268 Seminar in Management 3 s.h.
Topics vary.

06J:269 Meta-Analysis in Behavioral and Social Sciences 3 s.h.
Methods for quantitative integration of findings in behavioral, social sciences: overall effect size or correlation, whether conflicting findings documented in research literature are due to moderators (interactions) or statistical and measurement artifacts.

06J:270 Research Methods in Management and Organizations (Ph.D.) 3 s.h.
Methods commonly used in behavioral research; critical evaluation of research; research process from idea generation to publication; practice in generating hypotheses, drafting surveys, analyzing data, reviewing manuscripts.

06J:271 Strategic Reward Systems 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. Prerequisite: 06N:212.

06J:272 Training and Careers (Ph.D.) 3 s.h.
Research-based examination of training and development programs; emphasis on societal, legal, organizational factors that affect training program design, implementation, evaluation; systemic relationships among training, careers, organizational development management.

06J:273 Measurement Theory and Methods in the Behavioral and Social Sciences 3 s.h.
Classical and modern measurement theory, methods applied to psychological tests, questionnaires, ratings of work-related and other performances, behaviors; reliability theory and methods, instrument construction and item analysis, criterion construction, validity, combining and weighting instruments, cross-validation. Prerequisite: Basic statistical methods.

06J:274 Staffing Organizations (Ph.D.) 3 s.h.
Aspects of selection, including professional and legal standards, job analysis techniques, validation strategies, criterion development, selection techniques (e.g., psychological tests, interviews, biographical data, assessment centers), ethical issues.

06J:275 Group Processes and Conflict (Ph.D.) 3 s.h.
Understanding and implementing work groups in organizations, social influence and group processes, including communications, conflict, intergroup relations.

06J:276 Leadership (Ph.D.) 3 s.h.
Understanding and implementing leadership in organizations, focus on reading and analysis of basic research-related leadership theories; “great person” theories in contrast to traditional behavioral and situational theories.

06J:277 Motivation and Attitudes (Ph.D.) 3 s.h.
Motivational processes, attitudes, communication and organizational network?, emphasis on motivational antecedents and consequences, theoretical implications for models of work performance.

06J:278 Reward Systems and Performance Evaluation (Ph.D.) 3 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.

06J:290 Thesis in Management and Compensation and Individual Wage Determination; Compensation systems, government influences, equity in models of work performance.

06J:295 Mentored Research (arr.)
Facility supervision; culminates in second-year research paper.

06K:166 Systems Analysis and Design (10 weeks) 2 s.h.
Systems participate in a variety of educational opportunities in both manufacturing and service organizations. Typical starting positions include computer programmers, systems analysts, sales representatives with computer companies, and management trainees. Entry-level positions in operations management include materials management, line supervision, purchasing, and manufacturing systems.

06K:176 Managerial Decision Models 3 s.h.
06K:182 Applications Database Management Systems 3 s.h.
06K:183 Systems Analysis and Design 3 s.h.
06K:184 Introduction to Data Communications 3 s.h.
22C:016 Computer Science I 4 s.h.
One additional course from approved list of management sciences courses 3 s.h.
One additional computer science programming course (22C:009 or 22C:030 recommended, 22C:001 and 22C:005 not eligible)

Graduate Programs

Master of Arts

The Master of Arts in Management requires a minimum of 48 semester hours. Students must complete 15 semester hours of core management information systems courses and a minimum of 12 semester hours of courses in databases and information systems, software engineering, networking and systems, and intelligent systems. In addition, students must complete 15 semester hours of M.B.A. core courses and 6 semester hours of courses for the minor.

A final oral examination is required to complete the M.A. degree. Additional requirements are determined in consultation with the student’s adviser.

The joint M.A./M.B.A. degree requires a minimum of 75 semester hours. For students who need to take 22C:106, the joint degree requires a minimum of 78 semester hours.

The following course work is required for the M.A.

Prerequisites

Students who enter the program must have a rigorous background in structured or object-oriented programming equivalent at least to the following course (22C:106), which should be taken in the fall semester of the first year.

22C:106 Computer Science I (JAVA) 3 s.h.

Business (M.B.A. Core Courses)

Students earn 15 semester hours.

06N:211 Marketing Management 3 s.h.
06N:212 Management in Organizations 3 s.h.
06N:215 Corporate Financial Reporting 3 s.h.
06N:216 Data and Decisions (students with a strong background in statistical methods may substitute 06N:229 Operations Management) 3 s.h.
06N:225 Managerial Finance 3 s.h.

Management Information Systems Core

Students earn 15 semester hours in these courses, which provide a strong grounding in management information sciences.

063:220 Introduction to Information Systems 3 s.h.
063:230 Database Systems 3 s.h.
06K:240 Software Engineering 3 s.h.
06K:250 Computer Networks 3 s.h.
06K:260 Intelligent Systems 3 s.h.

Management Information Systems Concentration

These courses help students develop applied knowledge and hands-on experience in several management information systems areas. Students must complete at least 12 semester hours.

Databases and Information Systems

06K:233 Text Retrieval 3 s.h.
06K:234 Distributed Information Systems (10 weeks) 2 s.h.
063:235 Electronic Commerce (5 weeks) 1 s.h.
06K:236 Client/Server Planning and Management (10 weeks) 2 s.h.
063:237 E-Commerce Tools I (15 weeks) 3 s.h.
063:239 Topics in Databases and Information Retrieval (5 weeks) 1 s.h.

Software Engineering

06K:242 Object-Oriented Analysis and Design Laboratory (10 weeks) 2 s.h.
063:248 Software Design Laboratory (15 weeks) 3 s.h.
063:249 Topics in Software Engineering (5 weeks) 1 s.h.

Tippie College of Business
Admission

Not English must submit an official score of 600

The computer and its uses in organization operation, see the Catalog.

MINOR AREA

06K:262 Adaptive Systems with Applications (10 weeks) 2 s.h.
06K:263 Human/Computer Interaction (5 weeks) 1 s.h.
06K:269 Topics in Artificial Intelligence (5 weeks) 1 s.h.

MINOR AREA

Students earn 6 semester hours in the minor area. Courses for minor must be graduate level courses chosen from one of the business functional areas (e.g., operations management, marketing, finance, economics, and so forth); computer science; or another field, with adviser’s approval. Course selection must be approved by the student’s adviser.

Admission

Applicants must submit the following: an application for graduate admission, official transcripts of all undergraduate and graduate course work from each institution attended, Official Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE) scores, and at least three letters of recommendation from former instructors or employers. Applicants whose native language is not English must submit an official score of 600 or higher on the Test of English as a Foreign Language (TOEFL).

Application deadline is April 15. Application packets are available from the University’s Office of Admissions.

Doctor of Philosophy

Students majoring in management sciences may earn a Ph.D. in business administration. For information about degree requirements, see “Interdepartmental Graduate Programs” in the Tippec College of Business introductory section of the Catalog.

Courses

Primarily for Undergraduates

06K:224 Operating Systems Survey (5 weeks) 1 s.h.
06K:252 Computer and Network Security (10 weeks) 2 s.h.
06K:253 Algorithms (5 weeks) 1 s.h.
06K:259 Topics in Networking (5 weeks) 1 s.h.

Intelligent Systems

06K:261 Network Management 2 s.h.
06K:262 Adaptive Systems with Applications (10 weeks) 2 s.h.
06K:263 Human/Computer Interaction (5 weeks) 1 s.h.
06K:269 Topics in Artificial Intelligence (5 weeks) 1 s.h.

For Undergraduate and Graduate Students

06K:300 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 Junior standing required. Pre- or corequisite: 06K:70.

06K:101 Directed Readings arr.
Consent of instructor required.

06K:102 Management Science Topics 3 s.h.

Special topics in management information systems. Junior standing required.

06K:126 Visual Basic 3 s.h.

Introduction to Visual Basic programming language with emphasis on design and development of graphical user interfaces. Prerequisite: 06K:70.

06K:176 Managerial Decision Models 3 s.h.

Mathematical programming, incl. linear, nonlinear, dynamic programming, with applications in economics, management; classical optimization techniques, transportation, network flow problems. Prerequisite: 06K:70.

06K:177 Management Sciences Topics 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 using accounting software. Prerequisites: 06A:001, 06A:002, 06E:071, and 06K:70.

06K:182 Applications Database Management Systems 3 s.h.

Design, implementation of a database using relational DBMS, emphasis on issues of logical and physical design, database administration, concurrency control, maintenance. Prerequisite: 06K:70.

06K:183 Systems Analysis and Design 3 s.h.

Design, implementation of an information system; student projects in determination of information needs, system design, information plan development; construction of prototype information system. Open only to business administration seniors. Corequisite: 06K:182 or consent of instructor

06K:184 Introduction to Data Communications 3 s.h.

Computer communications; telecommunications system, hardware, data transmission principles; examples of existing communication networks; related managerial issues. Open only to business administration seniors. Prerequisite: 06K:70.

06K:188 Information Systems Management 3 s.h.

Managerial aspects of information technology, strategic and operational information technology issues; case studies. Prerequisites: 06K:182 and 06K:183.

Primarily for Graduate Students

06K:201 Directed Readings arr.
Consent of instructor required.

06K:202 M.A. Research Report 1 s.h.
Open only to nonthesis M.A. candidates. Consent of instructor required.

06K:205 International Dimensions of Management 3 s.h.

Framework for understanding international aspects of management, formulating effective strategies and making them work; factors that influence international competitive dynamics. Consent of instructor required.

06K:217 Data and Decisions II 3 s.h.

Advanced quantitative analysis techniques with management applications; multiple regression, time series, monte-carlo simulation, and linear, nonlinear, and discrete optimization emphasis on spreadsheet-based modeling. Prerequisite: 06N:216 or consent of instructor.

06K:220 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 component; emphasis on case studies.

06K:221 Managing Information Technology 3 s.h.

Effective management of information systems; focus on managerial issues rather than underlying technologies. Pre- or corequisite: 06K:220.

06K:224 Operating Systems Survey 1 s.h.

Operating systems such as UNIX, Windows, and MVS; user interface, productivity tools, memory/disk management, file management, and networking and communications support, other utilities. Corequisite: 22C:106.

06K:225 Informatics Tools for Health Care Decision Support 3 s.h.

Technological tools that support health care administration, management, and decision making; Graduate standing or consent of Instructor required. Same as 021:275, 06N:283, 06K:287, 06K:283, 174:226.

06K:226 Virtual Basic 3 s.h.

Introduction to Visual Basic programming language with emphasis on design and development of graphical user interfaces.

06K:230 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 Pre- or corequisites: 06K:220 and 22C:106.

06K:233 Test Retrieval 3 s.h.


06K:234 Distributed Information Systems 2 s.h.

Issues in distributed, networked, heterogeneous, dynamic information environments (intratranet, web), hypertext, XML; CGI; scripting languages; algorithms for coping with information overload and scalability-indexing, crawlers, search engines, information filtering, information agents and brokers. Prerequisites: 06K:230 and 06K:230. Same as 021:234.

06K:235 Electronic Commerce 1 s.h.

Introduction to problems and structures surrounding the emergence of electronic commerce; technology, policy, legal issues, current practices, opportunities related to information systems. Prerequisite: 06K:230.

06K:236 Client/Server Planning and Management 2 s.h.

Development of information systems strategy, enterprise information architecture and service delivery models; business process reengineering and quality improvement; information engineering, client/server architecture, open systems, composition of solutions, and organizational and change management. Prerequisite: 06K:220.

06K:237 E-Commerce Tools I 3 s.h.

Technical tools necessary for e-commerce; active server pages, VBScript, and Javascript; construction of a prototype e-commerce site. Corequisites: 06K:230, and 22C:106 or equivalent.

06K:239 Topics in Databases and Information Retrieval 3 s.h.

Topics from emerging information systems technologies, including object oriented, distributed, and multimedia databases; data warehousing; data mining; adaptive filtering; event/topic detection and tracking; information fusion; cross-language retrieval; vocabulary mining; image and speech retrieval; text categorization. Consent of instructor required.

06K:240 Software Engineering 3 s.h.

Software engineering paradigms, software project planning and risk analysis, software analysis and design methodologies, software quality assurance/testing, software configuration management, computer-aided software engineering tools useful for business applications. Prerequisite: 22C:106. Corequisite: 22K:200.

06K:242 Object-Oriented Analysis and Design Laboratory 2 s.h.

Application of object-oriented methodologies to analysis and design of business software systems; group project involving feasibility study, software requirement analysis, design. Prerequisites: 06K:240 and 22C:106.
06K:248 Software Design Laboratory 3 s.h.

06K:249 Topics in Software Engineering 1 s.h.
Consent of instructor required.

06K:250 Computer Networks 3 s.h.
Software engineering paradigms, software project planning and risk analysis, software analysis/design methodologies, software quality assurance/testing, software configuration management, computer-aided software engineering tools useful for business applications; group project. Prerequisites: 06K:220 and 22C:106. Same as 021:232.

063:252 Computer and Network Security 2 s.h.
Introduction to computer and network security concepts; encryption, access control and schemes, viruses, worms, Trojan horses, secure communication, firewalls, gateways. Prerequisites: 06K:250 and 06K:253.

06K:253 Algorithms 1 s.h.
Foundations of computing applicable to modern business; the basic idea of an algorithm; data manipulation and data structures, correctness and efficiency of algorithms; nonmathematical survey. Prerequisite: 22C:106.

063:259 Topics in Networking 1 s.h.
Consent of instructor required.

06K:260 Intelligent Systems 3 s.h.
Artificial intelligence and applications for decision support systems emphasizing knowledge representation, search, logic, expert systems, knowledge engineering, neural networks, probabilistic reasoning, fuzzy logic, and intelligent agents; group project building an expert system. Prerequisite: 22C:106. Corequisite: 06K:220.

06K:262 Adaptive Systems with Applications 2 s.h.
Introduction to the construction of adaptive decision-making systems with emphasis on applications; application of statistical methods, machine learning and data mining techniques, neural networks, genetic algorithms. Prerequisite: 06K:260.

06K:263 Human-Computer Interaction 1 s.h.
Principles of human/computer interaction for design of information systems; topics from intelligent user interfaces-multiplex input analysis, automated graphic design, cognitive science, user modeling, agent interfaces; applications to design of World Wide Web-based interfaces.

06K:269 Topics in Artificial Intelligence 1 s.h.
Topics from adaptive, autonomous, and intelligent agents; evolutionary algorithms; heuristic search and optimization algorithms; neural networks; supervised, unsupervised, and reinforcement learning; natural language processing; planning; robotics; vision; distributed artificial intelligence; artificial life. Consent of instructor required.

06K:271 Applied Multivariate Data Analysis 3 s.h.
Conceptual framework for multivariate statistical analysis techniques applicable to business administration; examples, case studies in accounting, marketing, finance, management. Prerequisite: 06N:216 or equivalent.

06K:274 Service Operations Management 3 s.h.
Managing services; design of services and service delivery process; service quality; global management of service operations. Prerequisite: 06N:229 or consent of instructor.

063:277 Management Sciences Topics 3 s.h.
Consent of instructor required.

06K:278 Forecasting 3 s.h.
Ad hoc models such as moving average, exponential smoothing; structured models such as regression, Box-Jenkins time series models. Prerequisite: 06N:216 or equivalent.

06K:279 Convex Analysis 3 s.h.
Convex sets, polar cones, functions; directions of recession and subgradients, separation of convex sets, Fenchel conjugates, Lagrangian principles and duality, set-valued mappings and semicontinuity, minimum theory, linear inequalities. Same as 22M:279.

06K:284 Operations Strategy 3 s.h.
A firm’s strategic use of operations for competitive advantage through decisions on facility size, degree of vertical integration, product technology selection, process technology selection, proper approach to quality, productivity, and technology.

06K:286 Topics in Continuous Optimization 3 s.h.
Recent progress in continuous optimization; linear and quadratic programming, complementarity problem, nonlinear programming, semidefinite programming, their applications; various algorithms, their efficiency and implementation. Future research directions. Prerequisites: 06K:285.

06K:287 Topics in Discrete Optimization 3 s.h.
Recent progress in discrete and combinatorial optimization and application; various algorithms, including approximation algorithms, online algorithms/competitive analysis, randomized algorithms/sampling, network-flow algorithms, interior-point algorithms.

06K:288 Applied Stochastic Processes 3 s.h.

06K:289 Research Seminar in Management Science 4 s.h.
Current research topics. Doctoral standing or consent of instructor required.

06K:290 Thesis in Management Sciences 3 s.h.
Arr. Open only to Ph.D. candidates. Consent of instructor required.

06K:291 Operations Planning and Control 3 s.h.
Research on planning, control of production systems; aggregate production planning, production and work force scheduling, project planning and scheduling, vehicle scheduling, inventory theory, forecasting, purchasing, manufacturing planning, control systems. Prerequisite: 06N:216.

06K:292 Management of Logistics Systems 3 s.h.
Design, operation, and management of a logistics system; design of production/service and warehousing systems, including distribution channel selection, inventory, transportation, customer partnering. Graduate standing required.

06K:293 Research Seminar in Operations Management 3 s.h.
Capacity planning, facilities management, technology management, product design and development, inventory theory, production scheduling. Consent of instructor required.

06K:294 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. Consent of instructor required.

06K:298 Managing Product Development 3 s.h.
Key concepts, tools in using the product development process to gain sustainable competitive advantage. Graduate standing required.

06K:299 Special Topics in Management Sciences 3 s.h.
Consent of instructor required.

06M:100 Introduction to Marketing 3 s.h.
Marketing: basic concepts, methods, and applications associated with doing business; marketing careers. Students majoring in marketing may earn a Ph.D. in business administration. For information about degree requirements, see “Interdepartmental Graduate Programs” in the Tippie College of Business introductory section of the Catalog.

06M:105 Web Business Strategy 3 s.h.
Introduction to World Wide Web business and marketing: concepts, methods, and applications associated with doing business on the web; page construction and design; case studies and/or entrepreneurial projects. Prerequisite: 06M:100.

06M:106 Direct Marketing Strategies 3 s.h.
Graduate degree: M.B.A.; Ph.D. in Business Administration.

06M:134 Marketing Research 3 s.h.
Graduate degree: M.B.A.; Ph.D. in Business Administration.

06M:147 Advertising Theory 3 s.h.
Graduate degree: M.B.A.; Ph.D. in Business Administration.

06M:151 International Marketing 3 s.h.
Graduate degree: M.B.A.; Ph.D. in Business Administration.

06M:190 Topics in Marketing 3 s.h.
Graduate degree: M.B.A.; Ph.D. in Business Administration.

Several decades ago, the study of marketing dealt almost exclusively with business activities involved in the flow of goods from production to consumption. Today the study of marketing 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.

Students who graduate with a major in marketing may find opportunities for employment as market analysts, merchandise managers, buyers, purchasing agents, advertising managers, brand managers, or sales representatives in a variety of profit and nonprofit organizations.

The requirements for the Bachelor of Business Administration with a major in marketing are as follows.

06M:134 Marketing Research 3 s.h.
06M:135 Consumer Behavior 3 s.h.
06M:147 Marketing Management (must be taken in the senior year) 3 s.h.

At least two, but no more than three, of these:

06M:105 Web Business Strategy 3 s.h.
06M:125 Direct Marketing Strategies 3 s.h.
06M:137 Advertising Theory 3 s.h.
06M:139 Sales Management 3 s.h.
06M:151 International Marketing 3 s.h.
06M:190 Topics in Marketing 3 s.h.

Graduate Programs

Students majoring in marketing may earn a Ph.D. in business administration. For information about degree requirements, see “Interdepartmental Graduate Programs” in the Tippie College of Business introductory section of the Catalog.

Courses

Primarily for Upper-Division Undergraduates

06M:000 Cooperative Education Internship 0 s.h.
Prerequisites: a 3.00 grade-point average in 06M:300 and 06M:134.

06M:134 Marketing Research 3 s.h.
Graduate degree: M.B.A.; Ph.D. in Business Administration.

For Undergraduate and Graduate Students

06M:101 Directed Readings in Marketing 3 s.h.
Consent of instructor required.

06M:105 Web Business Strategy 3 s.h.
Graduate degree: M.B.A.; Ph.D. in Business Administration.
06M:135 Consumer Behavior 3 s.h.
Behavioral and social aspects of marketing: research methods and findings from behavioral sciences, their relation to production, consumption, and marketing of products, services. Prerequisite: 06M:100.

06M:137 Advertising Theory 3 s.h.
Advertising as a promotional force; emphasis on theory, planning, resulting strategic and tactical decisions made by advertising executives. Prerequisite: 06M:100.

06M:139 Sales Management 3 s.h.
Personal selling, management of sales force; emphasis on recruitment, selection, training of sales representatives; problems in allocation of sales effort, supervision, control. Prerequisite: 06M:100.

06M:147 Marketing Management 3 s.h.
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. Senior standing required. Prerequisites: 06M:134 and a marketing course numbered above 100.

06M:151 International Marketing 3 s.h.
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. Prerequisite: 06M:100.

06M:190 Topics in Marketing 3 s.h.
Topic not regularly offered in other courses. Consent of instructor required. Prerequisite: 06M:100.

Primarily for Graduate Students

06M:201 Directed Readings in Marketing arr.
Consent of instructor required.

06M:205 Web Business Strategy 3 s.h.
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. Prerequisite: 06N:211.

06M:222 Marketing Geographic Information Systems 1 s.h.
Hands-on introduction to marketing geographic information systems; census data, geodemographic clustering systems, geocoding, thematic mapping; focus on marketing applications. Prerequisite: 06M:230 or consent of instructor.

06M:225 Direct Marketing Strategies 3 s.h.
Principles and processes of direct and database marketing; insight into the requirements for building a customer-based marketing strategy. Prerequisite: 06N:211.

06M:227 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. Prerequisite: 06N:211.

06M:230 Marketing Research Methods 3 s.h.
Managerial applications of marketing research techniques, including methods of design, analysis, interpretation of marketing research studies; assessing value of information, sampling, sources of bias, instrument construction, interpretation of scanner data, geodemographic data, applications of integrated research systems. Prerequisites: 06N:211 and 06N:216.

06M:231 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 formulating marketing strategies for industrial products and services, in industrial marketing problem solving and decision making. Prerequisite: 06N:211.

06M:232 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, services; application of consumer behavior concepts to managerial decision making. Prerequisite: 06N:211.

06M:233 Service Marketing 3 s.h.
Production, consumption, and marketing of services; solutions to problem; faced by service managers; development of an organizational marketing system for delivery of quality service. Prerequisite: 06N:211.

06M:234 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: 06N:211 and 06N:216.

06M:235 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. Prerequisite: 06N:211.

06M:236 Advertising and Promotion Strategy 3 s.h.
Marketing communications as dialogue between producers and consumers, how national mix evolves, emphasis on advertising, sales promotion, branding. Prerequisite: 06N:211.

06M:237 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 finding into action recommendations for management. Prerequisites: 06N:211 and 06N:216. Recommended: 06M:230.

06M:238 Contemporary Topics in Marketing 3 s.h.
Topics not regularly offered in other courses. Open only to graduate students. Prerequisite: 06N:211.

06M:239 Analysis for Marketing Decisions 3 s.h.
Analysis, decision making in context of marketing programs; emphasis on functions of marketing research and models as they pertain to marketing manager’s role; marketing cases structured around spreadsheet analysis. Prerequisite: 06N:211. Recommended: 06M:250.

06M:241 Management Models-Ph.D. 3 s.h.
Analytic models that support marketing decision making; emphasis on structure, use of models for decision situations; case studies. Consent of instructor required.

06M:242 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. Consent of instructor required.

06M:243 Research in Consumer Behavior 3 s.h.
Key facets of consumer behavior-information processing, perception, memory, learning, attitude formation, attitude change, decision making, emotion; behavioral research methods. Consent of instructor required.

06M:244 Multivariate Application-Ph.D. 3 s.h.
Multivariate analysis: principal components, factor analysis, canonical correlation, discriminant analysis, linear structural relations; emphasis on structural commonality across procedures, applications of procedures to marketing research problems. Recommended: substantial familiarity with linear algebra and inferential statistics. Consent of instructor required.

06M:245 Research Workshop-Ph.D. arr.
Individual research topics. Consent of instructor required.

06M:290 Thesis in Marketing arr.
Consent of instructor required.

TIPPIE SCHOOL OF MANAGEMENT - M.B.A. PROGRAM
Associate dean: Gary J. Gaeth
Graduate degree: M.B.A.
Web site: http://www.biz.uiowa.edu/mba

The Henry B. Tippie School of Management offers a Master of Business Administration (M.B.A.) degree program that provides students with a foundation for future growth and flexibility in professional management. The program, which is fully accredited by the International Association for Management Education-AACSB, enables students to build broad-based personal portfolios of analytical skills, knowledge, and professional experiences. The curriculum is rigorous, yet learning takes place in a collaborative environment that builds teamwork skills and encourages independent problem solving.

Students in the Iowa M.B.A. program come from every region of the United States and from countries throughout the world. They represent a variety of backgrounds, undergraduate majors, and prior professional experience. The curriculum is designed for college graduates in any field-previous course work in business is not required. However, full-time work experience is a requirement for admission. Interested students should review a current M.B.A. brochure available from the School of Management for complete program requirements.

Full-Time, On-Campus Program

The full-time, on-campus M.B.A. program requires 60 semester hours, including 12 semester hours in an area of concentration and 24 semester hours of elective course work in business or from another area of the University. Students may transfer up to 9 semester hours from another AACSB-accredited institution.

Plan of Study

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>06N:199</td>
<td>M.B.A. Competitive Preparation</td>
<td>0 s.h.</td>
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<tr>
<td>06N:211</td>
<td>Marketing Management</td>
<td>3 s.h.</td>
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<tr>
<td>06N:213</td>
<td>Managerial Economics</td>
<td>3 s.h.</td>
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<tr>
<td>06N:215</td>
<td>Corporate Financial Reporting</td>
<td>3 s.h.</td>
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<tr>
<td>06N:216</td>
<td>Data and Decisions</td>
<td>3 s.h.</td>
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<tr>
<td>06N:225</td>
<td>Managerial Finance</td>
<td>3 s.h.</td>
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Second Semester

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>06N:212</td>
<td>Management in Organizations</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06N:229</td>
<td>Operations Management</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06N:240</td>
<td>Strategic Management and Business Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06N:249</td>
<td>Concentrations/Electives</td>
<td>9 s.h.</td>
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</tbody>
</table>

Third Semester

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>06N:240</td>
<td>Strategic Management and Business Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06N:249</td>
<td>Concentrations/Electives</td>
<td>12 s.h.</td>
</tr>
</tbody>
</table>
Fourth Semester
Concentrations/Electives 15 s.h.

CONCENTRATION OPTIONS
M.B.A. students choose an individual area of concentration during the first year of the program. The concentration consists of at least 12 semester hours in a specific discipline. Main areas of concentration include accounting, finance, product development and management, human resources and organizational performance, leadership and consulting, entrepreneurship, management information systems, operations management, and marketing. Individual students may devise their own concentration area, subject to approval by the School of Management.

ELECTIVES
Each student chooses 24 semester hours of graduate-level electives; up to 12 semester hours may be earned in nonbusiness electives. Courses outside the College of Business Administration must be approved by the School of Management.

Admission
Applicants to the M.B.A. program must submit a complete application file, including the following:
- a completed School of Management application form and fee;
- official transcripts of all undergraduate and graduate course work submitted to the Office of Admissions by each institution attended;
- official Graduate Management Admission Test (GMAT) scores submitted to the Office of Admissions;
- the completed supplemental application form with essay responses, and a resume and cover letter; and
- at least three letters of reference from employers or former instructors.

Applicants whose first language is not English must submit an official score of 600 or higher on the Test of English as a Foreign Language (TOEFL) paper-based exam, or 250 or higher on the computer-based test. Application packets are available from the University’s Office of Admissions.

APPLICATION DEADLINES
Students may enter the full-time, on-campus M.B.A. program only in the fall. Application deadlines are as follows.
- April 15 -International applicants for fall (August).
- April 15 -priority deadline for fall (August) applications; U.S. citizens and permanent residents' applications for fall admission after this date are reviewed on a space available basis.
- July 1 -U.S. citizens and permanent residents applying for fall (August). Applications received after April 15 are reviewed on a space available basis.

Evening M.B.A. Program
The Evening M.B.A. Program is designed for working professionals who recognize the long-term benefits of a graduate business degree. It is designed to prepare college graduates for a professional career in business or in the public sector. The curriculum is designed for students representing a variety of backgrounds, undergraduate majors, and professional experience. Previous course work in business is not required.

Courses are offered each semester during evening hours in Cedar Rapids at the college’s Cedar Rapids Area Education and Conference Center; in Newton at the Newton Polytechnic campus of the Des Moines Area Community College; in Des Moines at the Krause Center for Entrepreneurial Education; and in the Quad Cities at the Kahl Educational Center in downtown Davenport. Students admitted to the Evening M.B.A. Program also may enroll in on-campus courses on a space-available basis. Evening students may complete up to 30 semester hours of credit toward the M.B.A. on the Iowa City campus.

Plan of Study
Degree requirements include a business core of 10 courses, to develop competency in general management skills and key functional areas of business, and five electives, for a total of 45 semester hours. Elective courses, which contribute to the development of an area of expertise and foster a deeper understanding of management and business practices, are available in accounting, entrepreneurship, finance, human resources/organizational performance, management information systems/operations management, and marketing. Students who wish to earn an M.B.A. in three years must complete two courses each fall and each spring semester and one course during the summer. Students have some latitude in course sequence and length of time allowed to complete the plan of study, following is a sample plan of study.

First Year
- 06N:211 Marketing Management 3 s.h.
- 06N:212 Management in Organizations 3 s.h.
- 06N:215 Corporate Financial Reporting 3 s.h.
- 06N:216 Data and Decisions 3 s.h.
- Business elective (summer session) 3 s.h.

Second Year
- 06N:213 Managerial Economics 3 s.h.
- 06N:225 Managerial Finance 3 s.h.
- 06N:227 Human Resource Management 3 s.h.
- 06N:229 Operations Management 3 s.h.
- Business elective (summer session) 3 s.h.

Third Year
- 06N:228 International Economic Environment of the Firm 3 s.h.
- 06N:240 Strategic Management and Business Policy 3 s.h.
- Business electives 6 s.h.
- Business elective (summer session) 3 s.h.

Admission
Students may apply for admission for the fall or spring semester; applications are accepted all year. Admissions decisions are based on the quality of work experience, undergraduate grade-point average, GMAT score, letters of reference, and completed application materials.

APPLICATION DEADLINES
- July 1 -U.S. citizens and permanent residents applying for fall (August); GMAT scores must be received by July 1.
- November 15 -U.S. citizens and permanent residents applying for spring (January); GMAT scores must be received by November 15.

Enrollment in Courses before Formal Admission
Students not yet admitted to the program can enroll at an off-campus site for up to 9 semester hours of M.B.A. course work over a 12-month period, 3 of which must include 06N:215 Corporate Financial Reporting or 06N:216 Data and Decisions. Credit is applied to the degree once the student is admitted to the program. Not-yet-admitted students requesting their first registration in an M.B.A. course must first submit their resume to the School of Management for approval.

Executive M.B.A. Program
The Executive M.B.A. also leads to the Master of Business Administration degree. Admission is limited to experienced executives who want to broaden their management skills without interrupting their professional careers. Course work is presented over 21 months. Classes begin in mid-August with a five-day residency week in Iowa City followed by classes one day a week on alternating Fridays and Saturdays. Participants progress through the program together as a group.

Information about the program, fees, and application procedures may be obtained by writing or calling the School of Management.

Dual Degree Programs
Dual-degree programs allow students to pursue concurrently an M.B.A. in the College of Business Administration and a J.D. in the College of Law, an M.A. in management information systems, an M.A. in library and information science in the School of Library and Information Science, an M.S.N. in the College of Nursing, or an M.H.A. in health management and policy in the College of Public Health. These programs allow students to earn both degrees more rapidly than if each degree were pursued independently. Interested students must make separate applications to each degree program.
Accelerated Professional Track

Highly qualified undergraduate students in the Colleges of Liberal Arts or Engineering at The University of Iowa may be admitted to the Accelerated Professional Track (APT) program. These students begin taking the M.B.A. core courses as electives in their undergraduate program so they can earn both the bachelor’s and M.B.A. degrees in less time than would usually be required. APT students must complete a cooperative education experience while in the program.

Interested students must have completed 60 semester hours of undergraduate study, earned a grade-point average of at least 3.50, clearly defined their career goals, and indicated the 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.

Courses

See individual department listings for M.B.A. elective courses.

06N:000 Cooperative Education Internship-M.B.A. 0 s.h.
Consent of School of Management required.

06N:199 M.B.A. Competitive Preparation 0 s.h.
Personal development, career strategies for successful competition in the M.B.A. marketplace. Consent of M.B.A. program associate required.

06N:200 Directed Readings-M.B.A. 1-3 s.h.
Consent of associate dean for graduate programs required.

06N:210 Advanced Models for Decision Support 3 s.h.
Quantitative techniques in decision making, including identifying controllable decision variables, setting decision objectives, defining choice-limiting constraints, developing computer solutions in contemporary business. Prerequisite: 06N:216.

06N:211 Marketing Management 3 s.h.
Concepts, principles, models of marketing management; focus on strategic planning, management decision making, and implementation of marketing programs.

06N:212 Management in Organizations 3 s.h.
Managerial implications of individual, team, and intra-organizational behaviors.

06N:213 Managerial Economics 3 s.h.
Models of consumer and firm behavior with applications; market equilibrium and structure, pricing decisions.

06N:215 Corporate Financial Reporting 3 s.h.
Financial and managerial accounting in the organization; financial accounting focus on reporting by organizations to investors, other external parties; managerial accounting focus on costing and control for basic units within an organization.

06N:216 Data and Decisions 3 s.h.
Introduction to decision making using quantitative modeling; basic probability, Bayes rule, decision trees, sampling distributions, and statistical inference; multivariate analysis using linear programming and regression; computer analysis in a spreadsheet environment. Graduate standing required.

06N:217 Ethics 1-2 s.h.

06N:225 Managerial Finance 3 s.h.
Asset valuation and capital budgeting under uncertainty, interactions with “efficient” capital markets, analyzing financial statements, decisions on capital structure, issuing nontraditional financial instruments, coping with mergers. Pre- or corequisite: 06N:215.

06N:227 Human Resource Management 2-3 s.h.
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<td>Oral and Maxillofacial Surgery</td>
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<td>Preventive and Community Dentistry</td>
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<td>Prosthodontics</td>
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Dean: David C. Johnsen
Executive associate dean: Jed S. Hand
Associate dean, research and graduate studies: Christopher Squier
Associate dean, finance and facilities: M.J. Brennan
Associate dean, student affairs: Yvonne M. Chalkley
Assistant dean, patient care: Stephen Stefanac
Director, oral science: Christopher Squier
Degrees: B.S., D.D.S., M.S., Ph.D.
Web site: http://dentistry.vh.org/
The College of Dentistry is an integral part of The University of Iowa and its Health Sciences Center. 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, predoctoral students, and specialty residents provide oral health care to patients at clinics in the Dental Science Building, the University Hospital School, and dentistry clinics at University Hospitals and Clinics and 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.

Founded in 1882, the college began as a single University department. In 1900 the University underwent general reorganization and the Dental Department became the College of Dentistry. In the 19th century dentistry was taught at several locations in Iowa, but 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 Bachelor of Science in Oral Health Sciences program, a degree completion program for individuals holding an A.A.S. degree in dental hygiene; 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-and hospital-based dentistry; and a wide variety of continuing education programs for the dental and allied professions.

Doctor of Dental Surgery

The basic program leading to the Doctor of Dental Surgery (D.D.S.) consists of 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 of study integrates the basic sciences with preclinical and clinical disciplines. The basic sciences include gross anatomy, biochemistry, general histology, oral histology, immunology, microbiology, pharmacology, and physiology. Students also study topics specific to dentistry, such as principles of occlusion, anesthesia and pain control, operative dentistry, facial growth and development, cariology, and preventive dentistry. During the latter part of the first year, students are introduced to their first clinical patient-treatment situation.

The second-year program continues the study of basic sciences and preclinical courses, with additional patient treatment experiences in the dental clinics.

Third-year dental students rotate through a series of clerkships that expose them to eight clinical disciplines.

Fourth-year dental students are involved in the delivery of comprehensive dental care in an environment that simulates conditions in private dental practice. They also are exposed to various community dentistry health programs that include hospitals, mental health institutes, nursing homes, and the Special Care Clinic. They may participate in the Colorado Migrant Worker 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.

Promotions, Graduation

Student promotions and graduation are determined by the collegiate academic and professional performance committee, which is made up of individuals appointed by the dean from the basic, preclinical, and clinical sciences and from other academic areas of the college. The performance committee may recommend to the 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, the student 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 previously has not been available or that, for some reason, 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.

Dentistry Licensure Examination

Iowa, Colorado, Illinois, Kansas, Minnesota, Missouri, Nebraska, North and South Dakota, Wisconsin, and Wyoming belong to the Central Regional Dental Testing Service, which serves as the testing agency for clinical examinations for licensure in these states. Examinations are administered at several testing sites located at schools of dentistry within the region. Examination dates are determined by the Central Regional Dental Testing Service and are available from its administrative secretary.

For a five-year period, member states accept successful completion of Central Regional Dental Testing Service requirements in lieu of their individual state’s clinical examination requirements. The license application is then filed with the individual state board of dentistry.

All states also require the National Boards, conducted by the American Dental Association, in lieu of individual state written examinations. A jurisprudence examination also is required in many states, including Iowa.

Student Organizations

All dental students are members of the American Student Dental Association through its local chapter. The American Association of Dental Schools, the American Association of Dental Research, the American Association of Women Dentists, the American Society of Dentistry for Children, the American Society for Geriatric Dentistry, and the Student National 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 chapter houses at Iowa. Psi Omega makes housing available to male and female dental students. In addition, both fraternities provide academic and social activities for students and their spouses.

Expenses

The College of Dentistry maintains a 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.

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 Loans. Students applying for loans must submit the Free Application for Federal Student Aid (FAFSA). Interest on many 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.

Research/Teaching Awards are given each year to qualified entering dental students. The Dental Research Awards and Resource Support Awards provide financial support up to $12,000 per year for as many as four years, if the student maintains an appropriate level of performance. Awardees are engaged in collaborative research with faculty mentors.
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.

Admission

Applicants must submit a completed application form to the American Dental Education Association Application Service. The ADEA application forms are available from the American Dental Education Association or the University Office of Admissions and the College of Dentistry Office for Student Affairs.

Applications are accepted beginning June 1 of the year before the year of entry. Completed applications must be on file at the ADEA by November 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 allows students to consider a combined program that enables them to earn a standard bachelor’s degree from their undergraduate college upon completion of the freshman year in dentistry (see “Combined Liberal Arts/Dentistry Program” in this section of the Catalog).

Predental Studies

The basic academic requirement for admission to the College of Dentistry is the completion of at least 94 semester hours of academic study at an accredited college. 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 semester hours), of which one-fourth must be laboratory work
- Chemistry: two years (equivalent to 16 semester hours), of which one year (equivalent to 8 semester hours) must be in organic chemistry; one-fourth of each year’s study must be laboratory work
- Biochemistry: highly recommended
- Biological Science: one year (equivalent to 8 semester hours), 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 semester hours. Courses in histology and cell physiology are strongly recommended.
- Electives: sufficient course work in the social sciences, philosophy, psychology, history, foreign languages, and mathematics to provide a well-rounded educational background.

Grade-Point Average Requirement

Applicants should have a cumulative grade-point average of at least 2.50 on a 4.00 scale (a grade-point average above 3.00 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, usually after the ADEA 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 Sylvan Testing Centers.

Applicants are required to take the test by August 1, one year before entering dental school. Test application forms are available from the University Office of Admissions; the College of Dentistry Office for Student Affairs; and the American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 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. From applicants meeting minimum requirements, the admissions committee 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.

Early Admissions

The College of Dentistry has early admissions programs with The University of Iowa; Buena Vista College in Storm Lake, Cornell College in Mount Vernon, Grinnell College in Grinnell, Luther College in Decorah, and Wartburg College in Waverly, Iowa; Augustana College in Rock Island, Illinois; and Prairie View A & M University in Prairie View, Texas.

The Deferred Admit Program (DAP) allows academically motivated students interested in a dental career to be admitted as early as the first year of their undergraduate college education while postponing matriculation to the College of Dentistry until they have completed at least three years of liberal arts education. During these three years, students are engaged in a liberal arts 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 University of Iowa College of Dentistry.

Combined Liberal Arts/Dentistry Program

Students who are enrolled in a baccalaureate program at The University of Iowa may be allowed to include the first year of dentistry to complete their elective semester-hour requirement toward the bachelor’s degree.

The provision for acceptance by the College of Liberal Arts of 30 semester hours of elective credit earned in any other college of the University allows College of Dentistry students to obtain a bachelor’s degree from the College of Liberal Arts after successfully completing the freshman year in dentistry. To take advantage of this plan, students must fulfill all specific requirements for the bachelor’s degree, including the General Education Requirements and the requirements for a major. Students also must satisfy the College of Liberal Arts residence requirement before enrolling in the College of Dentistry. See “Early Admission to Medicine or Dentistry” in the College of Liberal Arts section of the Catalog.

Basic Sciences in the Dental Curriculum

The following science courses are offered by departments in colleges other than dentistry and are a required part of the dental curriculum.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>060:101 Human Gross Anatomy for Dental Students</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>060:112 General Histology for Dental Students</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>060:114 Oral Histology and Embryology</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>061:112 Health Sciences Microbiology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>069:133 Introduction to Human Pathology</td>
<td>arr.</td>
</tr>
<tr>
<td>071:111 Pharmacology for Dental Students</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>072:152 Mammalian Physiology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>099:161 Biochemistry for Dental Students</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Undergraduate Study

B.S. in Oral Health Science

The College of Dentistry’s Bachelor of Science in oral health science is a degree completion program for students who hold an Associate in Applied Science (A.A.S.) from an accredited dental hygiene program. It offers dental hygienists the opportunity to supplement their existing knowledge and experience with additional course work in the liberal arts and sciences. It provides for considerable individualization of the program of study.
Graduates of dental hygiene programs are allowed up to 62 semester hours of credit for their A.A.S. degree. Each applicant is evaluated individually, taking into consideration educational background and experience. Course work for the degree may focus on leadership, computer and research skills, management, communication, and/or critical thinking skills to prepare graduates for a changing work world. Students also take course work in oral health while pursuing an academic program.

Programs require that students complete courses available in liberal arts disciplines and other departmental majors. The flexible format for satisfying degree requirements is designed to accommodate the needs of returning adult students.

**Admission**

Applicants should have a cumulative grade-point average of at least 2.50 on a 4.00 scale. They must apply for admission to the University and to the B.S. in Oral Health Science program, and they must interview at the College of Dentistry. Official transcripts, including degrees conferred, from each college or university attended must be submitted along with the application to the University’s Office of Admissions.

For more information about the B.S. in oral health science, contact the University’s Office of Admissions.

**Graduate and Postgraduate Study**

The College of Dentistry offers programs of study leading to the Master of Science and the Doctor of Philosophy in Oral Science. Both programs require that students complete courses from a course curriculum and conduct independent research leading to a thesis. They are intended to equip graduates for a career in teaching and research.

**M.S. in Oral Science**

The M.S. is awarded upon satisfactory completion of 30 semester hours of graduate work and a final examination. It is anticipated that candidates will complete the program in two years of full-time residence. M.S. candidates also involved in an advanced clinical program of two years’ duration should complete the MS. program by the end of a third year of study.

Students pursuing the M.S. also must be enrolled in a clinical training program or a College of Dentistry department.

**Admission**

Applicants should have a cumulative grade-point average of at least 3.00 on a 4.00 scale; they also must take the Graduate Record Examination with a combined score of at least 1600 for all three components (verbal, quantitative, and analytical) and a score of at least 500 for any individual component. Students whose first language is not English must earn a score of 550 (paper-based) or 213 (computer-based) or higher on the Test of English as a Foreign Language (TOEFL); candidates also may be asked to take the Test of Spoken English. These requirements are not absolute, but they carry considerable weight in the admission process. A personal interview may be requested. The program normally begins July 1 each year.

**Ph.D. in Oral Science**

The Ph.D. is awarded upon completion of advanced course work and original research that culminates in successful defense of a dissertation. Candidates must earn a minimum of 72 semester hours of graduate credit, pass a comprehensive examination, prepare and gain approval of a research prospectus, and complete and successfully defend a dissertation that describes the results of the research. Candidates usually require at least four years of full-time residence to complete the program.

**Admission**

Applicants must hold a dental degree and should have a cumulative grade-point average of at least 3.00 on a 4.00 scale; they also must take the Graduate Record Examination with a combined score of at least 1600 for all three components (verbal, quantitative, and analytical) and a score of at least 500 for any individual component. Students whose first language is not English must earn a score of 550 (paper-based) or 213 (computer-based) or higher on the Test of English as a Foreign Language (TOEFL); candidates also may be asked to take the Test of Spoken English. These requirements are not absolute, but they carry considerable weight in the admission process. Applicants are asked to submit a statement describing past research experience and current research interests, and stating how completion of the Ph.D. program fits into their career goals. A personal interview may be requested.

**Courses**

Oral science courses are listed under “Courses,” later in this section of the Catalog.

**Other Graduate Programs**

Programs of study leading to the Master of Science also are offered by the Departments of Operative Dentistry, Orthodontics, and Preventive and Community Dentistry. Admission to these graduate programs requires satisfaction of all requirements for admission to the Graduate College, the Doctor of Dental Surgery degree or its equivalent (or for dental hygienists applying to the Department of Preventive and Community Dentistry, a bachelor’s degree), and departmental approval.

**Postgraduate Study**

Departments also offer postgraduate programs designed as preparation for clinical specialty practice. These programs do not lead to an academic degree. A certificate is awarded upon satisfactory completion of the programs.

**Faculty**

Iowa’s dental faculty is predominantly full-time. In addition, 70 part-time adjunct faculty assist with clinical teaching in the D.D.S. and advanced education programs. Approximately 82 percent of the college’s faculty members hold D.D.S. or D.M.D. degrees and 18 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’s main campus, in proximity to the Colleges of Medicine, Nursing, Pharmacy, and Public Health and The University of Iowa Hospitals and Clinics. The Bowen Science Building and the Hardin Library for the Health Sciences also are close by.

The south wing of the building is devoted to clinical teaching. There are 268 operatories in departmental clinics, student laboratories, clinical research space, and a cafeteria. The north wing houses the new simulation clinic and technique bench teaching laboratory, the electronic classroom, the college’s 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.

**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 Center campus and at several off-campus sites, including nursing homes. More than 25,000 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 110,000 clinic visits each year.

**Interdisciplinary Centers**

**Dows Institute for Dental Research**

Established in 1976, the Dows Institute for Dental Research occupies the 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 in the area focuses on soft tissue and...
oral cancer; cardiology and microbiology; epidemiology, behavior, health policy, and outcomes; and biomaterials, bone, and tissue engineering. Research also is carried out at the Office of Clinical Research and the Center for Clinical Studies.

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.

Center for Clinical Studies
For more than a decade, this center has offered the oral health care industry a multidisciplinary setting for product testing and development directed by experienced faculty scientists in laboratory or clinical settings. Center researchers have broad experience in designing tests of therapeutic claims and product safety that meet the criteria of the ADA’s Council on Dental Therapeutics and Council on Dental Materials and Equipment, and the Food and Drug Administration Clinical Trials.

Center for Oral and Maxillofacial Implants
Through integrated research, education, and clinical programs, this center facilitates development and use of implants in dentistry as a therapeutic modality. 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 the various dental specialties participating in this treatment modality.

Courses

**Oral Science**

151:200 Seminars in Dental Research 1 s.h.

151:210 Dental Sciences Research Methodology 2 s.h.

Practical, experimental procedures in dental research; literature and design; writing of research protocols.

151:215 Research Design in Dentistry 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.

151:220 Pathophysiology of skin and Oral Mucosa 2 s.h.

Biological of skin, oral mucosa; changes in behavior of the tissues in a variety of physiological, pathological conditions. Offered fall semesters of odd years. Prerequisite: 151:210.

151:230 Patho-physiology of Salivary Glands and Saliva 2 s.h.

Intervation, structure, function of glands; their secretions in health and disease; their role in oral environment. Offered spring semesters of odd years. Prerequisite: 151:210.

151:240 Patho-physiology of the Pulp-Dentin Complex 2 s.h.

Biological of tissue; emphasis on pathological changes. Offered spring semesters of even years. Prerequisite: 151:200.

151:250 Current Concepts of Cariology 2 s.h.

Etiology of dental caries; pathogenesis, development of preventive measures. Offered spring semesters of odd years. Prerequisite: 151:200.

151:260 Bone and Tooth Support Structure and Implants 2 s.h.

Biology of bone and periodontal structures; biologic basis for therapeutic use of dental implants.

151:270 Oral Microbiology and Immunology I 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. Prerequisites: microbiology, biochemistry, and biology. Recommended: immunology.

151:275 Oral Microbiology and Immunology II 2 s.h.

Principles of oral diseases, physiology and pathogenesis of microorganisms, pathogens related to the microbiology/immunology of various periodontal diseases and infections of the pulp, including periodical abscesses. advanced basic science aspects of oral disease integrated with clinical treatment planning and diagnosis in a problem-based format. Prerequisite: 151:270 or consent of course director.

151:280 Advanced Dental Therapeutics 1 s.h.

Antimicrobial, analgesic, related therapies; emphasis on drug/drug interactions, treatment plan modification, case analysis of medically compromised patient. Offered fall semesters.

151:290 Strategies for Teaching Problem-Solving 1 s.h.

Designing large and small group instruction for clinical thinking skills; evaluating student performance.

151:600 Research in Oral Science 2 s.h.

Thesis research. Open only to candidates for MS. or Ph. D. in oral science.

**Clinical Management Concepts**

112:167 Introduction to Quality Assurance 2 s.h.

Patient management, quality assurance concepts; students coordinate treatment, patient relations, issues of quality assurance for a group of patients.

112:185 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.

112:186 Practice Management Lecture 1 s.h.

Developing a dental practice; economics, managerial principles, personnel management, leadership styles, marketing and communication, computerization, decision making, time utilization; insurance needs, banking, accounting, legal considerations, risk management, and entering into a’ associate contract.

112:189 Advanced Topics in Quality Assurance 2 s.h.

Quality assurance from viewpoint of practicing dentist, dental educator, dental epidemiologist. court system; students analyze senior dental practice in relation to quality assurance criteria; ethical, moral dilemma in relation to dental practice.

**Nondepartmental Courses**

112:100 Transfer Credits Accepted arr.

112:112 Patient Assessment and Diagnosis I arr.

Foundation and basic understanding of the practice of general dentistry; the oral cavity, oral health, common oral diseases treated by the general dentist.

112:113 Patient Assessment and Diagnosis II arr.

Processes of patient examination and assessment; understanding and identifying pain, pain management.

112:114 Restorative Dentistry I arr.

Basic dental terminology; human tooth morphology; creation of tooth crowns with wax; concepts of occlusion, manipulation, occlusal adjustment of tooth models on articulator.

112:115 Restorative Dentistry II arr.

Principles, design of cavity preparations; placement of restorative materials; crown preparations, impressions; fabrication of cast gold crowns; clinical simulation on dental mannequins.

112:116 Introduction to Clinic I arr.

Didactic content from 112:112 applied in clinical setting; primary preventive dentistry, methods for oral disease control; clinical experiences with self-assessment, peer assessment.

112:117 Introduction to Clinic II arr.

Experience assessing risk factors for oral disease; developing communication skills, and applying primary preventive dentistry therapies for patients; practice in calculus detection and removal, in Simulation Clinic and Preventive Dentistry Clinic.

112:118 Experiential Learning I arr.

Problem-based learning, case analyses, simulations, standardized patients, small group seminars, research activities integrating information addressed concurrently in the dental curriculum.

112:119 Experiential Learning II arr.

Continuation of 112:118.

112:120 First-Year Continuing Session arr.

112:145 Introduction to Geriatric Dentistry 2 s.h.

Biological, psychological, social aspects of aging; normal aging, disease processes, pathological changes that affect oral health treatment of dental diseases and patient management. Open only to dental hygienists and dental students. Same as 153:145.

112:150 Second-Year Continuing Session arr.

112:168 Dental Therapeutics 1 s.h.

Patients’ medications and their implications for dental treatment; review of medications that dentists may prescribe; guidelines for dental prescribing.

112:170 Third-Year Continuing Session arr.

112:150 Fourth-Year Lectures and Clinics arr.

112:190 Dental Student Research Honors Program arr.

Open only to dental students. Consent of mentor and program director required.

112:198 Advanced Clinical Dental Hygiene 0 s.h.

Clinical experience for professional improvement. Prerequisite: completion of a dental hygiene program.

112:199 Advanced Clinical Comprehensive Dentistry 0 s.h.

Clinical experience for professional improvement. Dental degree required.

**ENDODONTICS**

Head: Eric M. Rivera
Professor: Richard E. Walton
Professor emeritus: Arne M. Bjorndal
Associate professors: David R. Drake, Eric M. Rivera
Assistant professors: James L. Jostes, Heather R. Adu-Sarkodie
Graduate degrees: M.S., Ph.D. in Oral Science
Graduate nondegree program: certificate in Endodontics
Web site: http://dentistry.vh.org/endogo.html

**Predoctoral Program**

Course work and clinical experiences in endodontics are of vital importance in the overall education of a dental student. 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 pulp death and periradicular disease and various specialized aspects of endodontic treatment are emphasized. Students treat endodontic patients under direct supervision of faculty and staff.

**Graduate Programs**

The advanced programs offered by the Department of Endodontics are designed to provide qualified dentists with the scientific knowledge and clinical skills needed to practice endodontics and/or pursue a career in dental education and research.

The department offers several types of postdoctoral programs, which have similar clinical experiences but different didactic experiences. Each advanced program satisfies
training requirements for eligibility for certification by the American Board of Endodontics. Students who complete the programs are encouraged to seek board certification. Various activities throughout the courses of study prepare the candidates for the board examination process.

The goal of each advanced program 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. Students in the M.S. and Ph.D. (dentist-scientist programs) also gain in-depth knowledge in a scientific training discipline as preparation for an academic/research career.

Master of Science

The Master of Science requires a minimum of 30 semester hours of graduate-level work, taken over 36 months. An original research project and thesis also are required. Students follow a plan of study outlined by the Department of Endodontics in compliance with basic Graduate College regulations for graduate programs in dentistry. Under most circumstances, the degree granted is a Master of Science in oral sciences, although master’s degrees are available in other disciplines. Following successful completion of the program requirements, students are granted a Master of Science degree and a certificate in endodontics.

Certificate

The certificate program requires a minimum of 24 months of full-time formal training. The program has the same clinical but fewer didactic course requirements than the combined M.S./certificate program, and it requires no formal thesis. Students are expected to complete an original research project in the area of endodontics and to write a scientific paper for submission to a refereed journal.

Doctor of Philosophy

The dentist-scientist program requires a minimum of 72 semester hours of graduate-level credit over five years. Upon completing original research and successfully defending a dissertation, students are granted a Ph.D. in a basic science area and a certificate in endodontics.

The dentist-scientist program is federally funded and competitive. Candidates must be accepted by the College of Dentistry research unit and by the Department of Endodontics.

Other Graduate Programs

Alternative programs also are available, such as a certificate in combination with a Ph.D. (other than the federally-funded dentist-scientist program). Such programs are available by special arrangement, depending on the candidate’s experience and goals.

Graduate Program Policies

Grade-Point Average

Students in each advanced program must maintain a grade-point average of at least 3.00 to receive the certificate and/or degree. Students who fall below this average are allowed one semester to raise their grade-point average to at least 3.00. The circumstances of the grade-point average deficiency receive careful consideration.

Dental Practice Privileges

Students accepted and enrolled in any advanced program 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.

Program Interruption

Whenever possible, students should complete the advanced program without interruption. Students who demonstrate need to discontinue the program temporarily should limit their time away to a maximum of one calendar year. Students must have permission from the endodontic graduate program director in order to interrupt their study.

Admission

Application for the M.S. and certificate programs are accepted from both U.S. and international graduates (or from those about to graduate). The dentist-scientist program is available only to U.S. citizens and permanent residents.

For Predoctoral Students

Applicants to the M.S. and certificate programs must be graduates of (or graduating from) an accredited college of dentistry or a foreign equivalent. M.S. and Ph.D. candidates must comply with the requirements for admission to the Graduate College. A cumulative grade-point average of at least 2.50 (on a scale of 4.00) or equivalent is necessary for consideration for any of the advanced programs.

Application

For the certificate and combined M.S./certificate programs, application forms are available from and should be returned to the Graduate College, c/o the Graduate Admissions Office. Applications are forwarded to the Department of Endodontics.

For the dentist-scientist program, application forms and additional information are available from and should be returned to the office of the dean for research in the College of Dentistry. Applications are forwarded to the Department of Endodontics.

For Graduate Students

Applications to the master of science program are required to take the Graduate Record Examination, which may be completed during the first semester of enrollment. All international applicants whose native language is not English must pass the Test of English as a Foreign Language (TOEFL) in order to be admitted to the Graduate College or the College of Dentistry as an advanced education student in endodontics.

Financial Support

Applicants to the M.S. and certificate programs must be able to support themselves financially until they complete the program. Besides living expenses, prospective students should plan on expenses for tuition, books, specialized equipment (e.g., surgical operating microscope), instrument usage, and thesis costs. Limited stipends may be available. Stipends are determined on a yearly basis and are dependent on availability of funding.

For Predoctoral Students

Applicants to the M.S. and certificate programs receive salary compensation, support for research expenses, tuition, and travel expenses over the five-year period.

Courses

For Predoctoral Students

083:140 Endodontics Preclinical Didactic 1 s.h.
083:141 Endodontics Preclinical Laboratory 1 s.h.
083:140 Clinical Endodontic Practice arr.
083:141 Clinical Endodontic Seminar 1 s.h.
083:165 Endodontic Literature Review I 2 s.h.
083:166 Endodontic Literature Review II 2 s.h.
083:167 Endodontic Literature Review III 2 s.h.
083:168 Endodontic Literature Review IV 2 s.h.

For Graduate Students

Also see courses listed under the Oral Sciences Program.

083:260 Update in Endodontics 1 s.h.
083:925 Endodontic Literature Review I 2 s.h.
083:926 Endodontic Literature Review II 2 s.h.
083:927 Endodontic Literature Review III 2 s.h.
083:928 Endodontic Literature Review IV 2 s.h.
Postgraduate Program

The Department of Family Dentistry sponsors the Advanced Education in General Dentistry Program (AEGD). This postgraduate program’s objectives are to improve and refine residents’ skills and knowledge in the practice of general dentistry and to develop general practitioners who can plan and deliver high-quality dental services. AEGD practitioners are better able to plan and coordinate complete treatment for complex patient care and to act as principal coordinators when specialists’ services are necessary.

Residents are exposed to a broad range of clinical experiences while delivering comprehensive care to an assigned group of patients, who are treated solely by the residents. They have the opportunity to discuss treatment planning, progress, and outcome with other residents and faculty. They also are involved with financial management, auxiliary management, and appointment planning, thus adding to their practice management skills.

Approximately 85 percent of the program consists of general dental practice. Patient assignments are made to assure broad experience in type and complexity of treatment needs. The didactic portion constitutes approximately 15 percent of the total experience and consists of seminars by discipline-trained faculty in all specialty areas. Dental emergency responsibilities are included in the program, as are pretreatment, midtreatment, and posttreatment case presentations. Journal clubs help residents become familiar with current literature and research.

The AEGD program lasts one year and carries a stipend.

Applicants for the program must be graduates of accredited U.S. or Canadian dental schools. Further information is available from the Department of Family Dentistry. Applications should be received no later than October 15 for admission the following July 1.

Courses

For Predoctoral Students

114:184 Advanced DAU 1 s.h.
Delivery of comprehensive dental treatment in clinical setting, with chairside dental assistant; small group seminars, individual clinical coaching, self-instruction via a manual and supplemental media; instrument transfer techniques, operator and patient positioning, gaining access and visibility, work simplification and motion economy, management skills, interpersonal communication skills.

114:187 Family Dentistry Clinic I 1 s.h.
Management of treatment of patient’s total dental needs in Family Dentistry Clinic; integration of knowledge, experience for comprehensive dental care management.

114:188 Family Dentistry Clinic II 1 s.h.
Clinical experience in diagnosis, treatment planning and delivery, integrated, comprehensive dental care management.

114:194 Topics in Family Dentistry 3 s.h.
Current techniques, findings, applications for general practitioner and graduate specialty programs.

114:195 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.

For Graduate Students

114:300 Advanced Education in General Dentistry Residency 0 s.h.
Advanced dental clinical, didactic education; nondegree program in general dentistry.

HOSPITAL FAMILY DENTISTRY

Head: Kirk L. Fridrich
Division directors: Kirk L. Fridrich (Oral and Maxillofacial Surgery), Stephen J. Goepferd (Pediatric Dentistry), Patricia K. Meredith (Family Dentistry)

Predoctoral Program

The Department of Family Dentistry introduces senior dental students to a comprehensive approach for managing the oral health care needs of patients. The senior year 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 care.

Students who complete their education in Family Dentistry:

- understand the principles of comprehensive dental treatment planning;
- know the medical, ethical, and legal issues involved in patient care;
- are able to recognize the need for specialty consultation;
- are competent in coordinating and sequencing patient treatments;
- are prepared to enter general practice;

- are educated and have had appropriate training for the licensure examination; and
- appreciate the importance and value of life-long 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 make practice location selections as well as manage the business aspects of a dental practice.
Accreditation of the American Dental Association.

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.

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 house staff of the hospital and have the same privileges and responsibilities as residents in other professional education programs.

Applicants must be graduates of an approved college of dentistry and must be licensed to practice dentistry in the United States. Selection is made through a postdoctoral dental matching program sponsored by the American Association of Dental Schools.

The application deadline is November 1 for admission the following July 1. Applicants are appointed after the results of the match have been received and the staff takes official action.

### OPERATIVE DENTISTRY

**Acting head:** Daniel Boyer  
**Professors:** Daniel Boyer, Gerald Denehy, Satish Khara  
**Professors emeriti:** Kai Chan, James Fuller, Wallace Johnson, Devore Killip  
**Associate professors:** Yvonne Chalkley, Deborah Cobb, Thomas Schulien, Marcos Vargas  
**Adjunct associate professors:** Robert Margeas, Paul Martin  
**Assistant professors:** Steven Armstrong, Murray Boushlicher  
**Adjunct instructors:** Richard Grander, Mark Kampfe, Joseph Rauch, Jon Ryder  
**Graduate degree:** M.S. in Operative Dentistry  
**Graduate nondegree program:** certificate in Operative Dentistry  
**Web site:** http://dentistry.vh.org/operavg.html

### Predoctoral Program

Course work and clinical experiences in operative dentistry are fundamental to the dental student’s overall education. The operative dentistry curriculum is designed so that didactic material relates closely to laboratory and clinical experiences. The program prepares students to proceed independently in operative dentistry during the fourth year of training.

### Graduate Program

The Department of Operative Dentistry offers advanced training designed to prepare dentists for teaching, research, and practice. Since operative dentistry is not a specialty area, graduate students have the opportunity to take courses that particularly interest them. Students earn a Master of Science degree and a certificate in operative dentistry.

Requirements for the M.S. include satisfactory completion of 52 semester hours of specified graduate-level courses; preparation of an acceptable thesis based on original research; and formal defense of the thesis and an exam by an examining committee. Students must provide their own financial support for the research and thesis.

Applicants for the program must be graduates of recognized schools of dentistry and must comply with the admission requirements of the Graduate College. The department may request an interview with the applicant.

### Courses

#### For Predoctoral Students

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>082:120</td>
<td>Dental Anatomy Didactic</td>
<td>1 s.h.</td>
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<tr>
<td>082:121</td>
<td>Dental Anatomy Laboratory</td>
<td>2 s.h.</td>
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<tr>
<td>082:122</td>
<td>Operative Dentistry I</td>
<td>2 s.h.</td>
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<tr>
<td>082:123</td>
<td>Operative Dentistry I: Laboratory and Clinic</td>
<td>3 s.h.</td>
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<tr>
<td>082:140</td>
<td>Operative Dentistry II</td>
<td>1 s.h.</td>
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<tr>
<td>082:141</td>
<td>Operative Dentistry II Clinic</td>
<td>0, 3 s.h.</td>
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<tr>
<td>082:160</td>
<td>Operative Dentistry III Clinic</td>
<td>3 s.h.</td>
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<tr>
<td>082:165</td>
<td>Operative Dentistry III Seminar</td>
<td>1 s.h.</td>
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#### For Graduate Students

**Disciplines**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
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<tr>
<td>082:224</td>
<td>Graduate Restorative Materials</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>082:225</td>
<td>Operative Dentistry Seminar I</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>082:226</td>
<td>Operative Dentistry Seminar II</td>
<td>1 s.h.</td>
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<tr>
<td>082:227</td>
<td>Operative Dentistry Seminar III</td>
<td>1 s.h.</td>
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<tr>
<td>082:228</td>
<td>Operative Dentistry Seminar IV</td>
<td>1 s.h.</td>
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**Research**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>082:230</td>
<td>Operative Dentistry Research I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>082:231</td>
<td>Operative Dentistry Research II</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>082:232</td>
<td>Operative Dentistry Research III</td>
<td>3 s.h.</td>
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### Oral and Maxillofacial Surgery

**Head:** Kirk L. Fridrich  
**Directors:** Richard G. Burton  
**Professors:** Kirk L. Fridrich, Daniel Lew, Deborah L. Zeinler  
**Associate professors:** Merle Hale, Leslie Higa, John Montgomery  
**Associate professor:** Karen A. Baker  
**Assistant professors:** Richard G. Burton, William J. Syna  
**Graduate degree:** M.S. in Oral and Maxillofacial Surgery  
**Web site:** http://dentistry.vh.org/oralmagp.html

The Department of Oral and Maxillofacial Surgery combines clinical and didactic training to fit the individual interests, abilities, and development of students. Its predoctoral program is based in the College of Dentistry, with some clinical assignments in the division of oral and maxillofacial surgery at The University of Iowa Hospitals and Clinics. Graduate study is based primarily in the residency training programs at The University of Iowa Hospitals and Clinics.

### Predoctoral Program

The predoctoral curriculum is designed to develop a foundation of professional knowledge, coupled with surgical skills, that will enable students to diagnose and manage surgical problems related to the practice of general dentistry. Emphasis is placed on reinforcing high ethical standards and developing good surgical concepts and judgment.

The clinical portion of the curriculum allows students to develop surgical skills and apply the theoretical knowledge acquired in the didactic courses. The theory and application of anesthesia-analgesia, intravenous sedation, and nitrous oxide analgesia techniques are presented through didactic and clinical experiences.
Graduate Programs

Residency Program

The residency program in oral and maxillofacial surgery 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; however, it is essential that all students meet certain fundamental requirements.

The recommendations of the Council on Dental Education of the American Dental Association, the Committee on Graduate Training of the American Society 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 the principles of surgery, and familiarization with the various aspects of health services.

Competence in clinical oral and maxillofacial surgery requires knowledge of the basic medical sciences related to the specialty. Therefore, 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 anesthesiology through an assigned rotation in the Department of Anesthesiology. 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 The University of Iowa Hospitals and Clinics and at Veterans Affairs Medical Center. 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.

Master of Science

Requirements for the M.S. are completed during residency. The M.S. program is a four-year course of integrated didactic and clinical study, including a research project and preparation of a thesis.

Admission

Students may begin the full four-year program only on July 1. The application deadline in oral and maxillofacial surgery is October 1 for admission the following July 1.

Applicants must take the Graduate Record Examination (GRE) General Test. Candidates must have graduated from an accredited college of dentistry, be licensed to practice dentistry in the United States, and should be in the upper one-third of their graduating class.

Documents required include application for graduate oral and maxillofacial surgery; an applicant appraisal form from the applicant’s references; transcripts; and letters of recommendation from the dean of the dental college from which the applicant graduated and from two professional references.

Applicants are selected through a postdoctoral joint dental training program sponsored by the American Association of Oral and Maxillofacial Surgeons. Appointments are made after the match results are revealed and the staff selects to take official action. All appointments should be tendered on or before February 1 prior to the July 1 effective date.

The Office of Graduate and Professional College Admissions sends admission forms to applicants. The forms must be completed for the Graduate College by March 1.

Facilities

The University of Iowa Health Sciences Center has outstanding basic and clinical science departments that stimulate and support scholarly research and superior clinical practice. The facilities of The University of Iowa Hospitals and Clinics, the Veterans Affairs Medical Center, and the Colleges of Dentistry and Medicine provide an appropriate environment for residency training in oral and maxillofacial surgery.

Courses

For Predoctoral Students

087:115 Anesthesia and Pain Control I 1 s.h.
Principles, techniques of complete medical history, head and neck examination, cardiovascular and respiratory examination; neuraxial, peripheral, psychological aspects of pain; pharmacologic action and techniques for local anesthetics.

087:130 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.

087:145 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.

087:155 Advanced Oral and Maxillofacial Surgery 1 s.h.
History, examination, diagnosis, treatment of diseases and traumatic injuries of oral cavity.

Clinical experience at the College of Dentistry, The University of Iowa Hospitals and Clinics, Veterans Affairs Medical Center

For Graduate Students

087:201 Hospital Procedures 1 s.h.
Hospital rules, regulations, patient, department records; information concerning hospitalized patients.

087:202 Basic Science Review 4 s.h.
Head, neck anatomy; dissection; bacteriology, pathology

087:207 Surgical Anatomy 1 s.h.
Head, neck structures in major oral surgery procedures; emphasis on maxillofacial problems, surgical emergencies; may include animal surgery.

087:208 Pain and Anxiety Control 1-3 s.h.
Nitrous oxide; intravenous, oral, intramuscular anxiety and pain control; pharmacology of agents; complications, management.

087:209 Principles of Anesthesia 2 s.h.
General anesthesia; agents and their effects on respiratory, cardiovascular systems; literature.

087:211 Literature Seminars and Journal Club 1 s.h.

087:212 Surgical Case Reports 1 s.h.

087:214 Roentgen Interpretation 2 s.h.
Theory; technique.

087:215 Physical Diagnosis 2 s.h.

087:218 Oral Pathology Conference 1 s.h.
Current clinical specimens.

087:225 Oral and Maxillofacial Surgery Seminar I 1 s.h.

087:226 Oral and Maxillofacial Surgery Seminar II 1 s.h.

087:227 Oral and Maxillofacial Surgery Seminar III 1 s.h.

087:230 Oral and Maxillofacial Surgery Research I 2 s.h.
Thesis topic and review committee selection, literature review.

087:231 Oral and Maxillofacial Surgery Research II 3 s.h.
Thesis protocol, research.

087:232 Oral and Maxillofacial Surgery Research III 3 s.h.
Thesis research complete; data gathering.

087:233 Oral and Maxillofacial Surgery Thesis 3 s.h.
Thesis and defense; comprehensive examination.

Surgery rotation; technical seminars, patient treatment; clinical practice in assigned patient problems.

Surgery rotation; technical seminars, patient treatment; clinical practice in assigned patient problems.

ORAL PATHOLOGY, RADIOL OGY, AND MEDICINE

Head: Steven D. Vincent
Professors: Michael W. Finkelstein, Harold L. Hammond, Axel Ruprecht, Christopher A. Squier, Steven D. Vincent, Philip W. Wertz

Professor emeriti: Danielo E. Hall, William J. Hauser, Gilbert E. Lilly

Adjunct professors: Eva Dahl, Thomas P. Williams

Associate professor: Lynn A. Johnson

Associate professor emeritus: Philip S. Horton

Associate professor (clinical): Ronald D. Elvers, Patricia Meredith

Assistant professors: Cynthia L. Kleinegger, George C. Kientzel, Zoya B. Karago, Cindy L. Marek

Assistant professor emeritus: Francis H. Sippy

Graduate degree: M.S. in Stomatology
Graduate nondegree programs: certificate in Oral and Maxillofacial Pathology, certificate in Oral and Maxillofacial Radiology
Web site: http://dentistry.vh.org/oprmgp.html

Predoctoral Program

The department teaches dental and other health care students about diseases that manifest in and about the oral cavity. Students learn about the clinical, radiographic, laboratory, histopathologic, and therapeutic features of these diseases as well as their etiology and natural history. They also study identification of systemic diseases through physical evaluation of patients.

Graduate Programs

Master of Science

Stomatology is the science of structure, function, and disease of the oral cavity. 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 a plan for therapeutic management.

The postdoctoral programs are diverse and flexible, emphasizing oral and maxillofacial pathology, and oral and maxillofacial radiology. Two educational tracks, emphasizing oral and maxillofacial pathology or oral and maxillofacial radiology, allow postdoctoral students to obtain advanced clinical, didactic, and research-related education while pursuing a Master of Science degree in stomatology.

Students also may choose to apply for acceptance into the collegiate master of science degree program in oral science, (see “Oral Science” in the College of Dentistry introductory section of the Catalog).

Oral and Maxillofacial Pathology Emphasis

MASTER OF SCIENCE

Dental school graduates seeking the M.S. in stomatology with oral and maxillofacial radiology emphasis pursue comprehensive study of basic and health sciences in preparation for teaching and research. A minimum of 44 semester hours of satisfactory graduate credit is required. Candidates for the MS, prepare and submit a thesis based on the results of research conducted during their course of study.

CERTIFICATE AND MASTER OF SCIENCE

The certificate in oral and maxillofacial radiology and M.S. in stomatology with oral and maxillofacial radiology emphasis combines the minimum requirements of the certificate and master’s degree programs. Completion time usually is 36 to 48 months. The educational requirements of the certificate program in oral and maxillofacial radiology meet the requirements for preparation of dental specialists set forth by the American Board of Oral and Maxillofacial Radiology.

Program of Study

Students in all four programs must complete the core courses listed below. They also must complete the basic science and departmental courses appropriate to their track, listed as “additional required courses.”

CORE COURSES
086:204 General and Systemic Pathology 9 s.h.
086:200 Stomatology Literature Review arr.
086:226 Physical, Laboratory, and Historical Features of Disease arr.
086:230 Research in Oral Pathology, Radiology, and Medicine
086:242 Clinical Oral and Maxillofacial Radiology
111:202 Research Protocol Seminar 2 s.h.
111:212 Statistical Methods for Dental Research 3 s.h.
151:210 Dental Sciences Research Methodology 2 s.h.

ADDITIONAL REQUIRED COURSES

Oral and Maxillofacial Pathology Track
086:227 Surgical Oral Pathology 1 s.h.
086:240 Histopathology 1 s.h.
086:241 Hospital Oral Pathology, Radiology, and Medicine arr.
151:220 Pathophysiology of Skin and Oral Mucosa 2 s.h.
151:270 Oral Microbiology and Immunology I 2 s.h.
151:275 Oral Microbiology and Immunology II 2 s.h.

Oral and Maxillofacial Radiology Track
077:103 Introduction to Radiation Biology 4 s.h.
077:211 Medical Physics 4 s.h.
077:223 Cellular and Molecular Radiobiology 4 s.h.
077:308 Special Topics arr.
ORTHODONTICS

Head: John S. Casko
Professors: Samir E. Bishara, John S. Casko, Karin A. Southard, Thomas E. Southard, Robert N. Staley
Professors emeriti: Richard M. Jacobs, William Olin
Graduate degree program: certificate in Orthodontics

Web site: http://dentistry.vh.org/orthogs.html

Predoctoral Program

The purpose of the predoctoral program in orthodontics is to enable the general practitioner of dentistry to recognize, diagnose, and treat with competence limited malocclusions of the teeth.

Lecture courses guide the student in learning basic concepts of dental and facial growth, as well as treatment-oriented subject matter. In a laboratory course, diagnostic records are taken and evaluated and treatment appliances are fabricated. The department supervises a volunteer program for clinical treatment of selected patients.

Graduate Program

The purpose of the graduate program in orthodontics is to educate specialists capable of diagnosing and treating any malocclusion of the teeth requiring comprehensive care. The specialist should be familiar with and able to critically analyze biologic, biomechanic, diagnostic, and treatment concepts in orthodontics.

Satisfactory completion of a 24-month period of intensive study, including lecture courses, seminars, clinical practicum, and a research paper, qualifies students for the Certificate in Orthodontics. If students satisfactorily complete a thesis based on an original research project, they qualify for an M.S. degree in addition to the certificate.

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.

Admission

Admission requires a D.D.S. or equivalent and satisfaction of Graduate College requirements. 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 Predoctoral Students

089:150 Orthodontic Diagnosis and Its Biological Foundations 1 s.h.
- Concepts of craniofacial biology basic to orthodontic diagnosis, philosophy of orthodontic problem management; development of dentition, physiology of stomatognathic system, neurophysiological considerations, growth and development, genetic variability in face and teeth, growth of cranium and facial skeleton.

089:155 Orthodontic Laboratory 1 s.h.
- Design, construction of orthodontic appliances; cast trimming.

089:160 Orthodontic Treatment 1 s.h.
- From patient management to use of appliances for correcting some malocclusions in the general practitioner’s office.

089:170 Orthodontic Clinic arr.
- Experience in diagnosis, treatment planning implementation; work with patients who have malocclusions appropriate for treatment by undergraduate students; record taking; diagnosis and treatment; may include appointments during summer months.

For Graduate Students

089:200 Control Theory and Craniofacial Morphogenetic Systems 1 s.h.

089:201 Orthodontic Theory: Diagnosis and Treatment Plan 2 s.h.
- Diagnosis, treatment planning implementation.

089:202 Diagnosis and Treatment Planning 2 s.h.
- Literature concerning orthodontic diagnosis; treatment of particular problems; case histories of patients treated in graduate clinic.

089:203 Advanced Orthodontic Technique arr.
- Skills for treatment of disfiguring malocclusions; use of edgewise biomechanical therapy; laboratory focus on typodont exercises.

089:204 Biomechanics arr.

089:205 Facial Growth 1-2 s.h.
- Theories, processes; use of accepted facial growth concepts in treatment of individuals with malocclusions during active growth period.

089:207 Case Analysis arr.
- Literature on diagnosis, treatment of mixed dentition patients; case histories of patients treated by serial extraction procedure.

089:209 Orthodontic Practice arr.
- Clinical practice.

089:210 Orthodontic Seminar arr.
- Evaluation, discussion, criticism, defense of diagnostic and treatment approaches to orthodontic cases that need, are undergoing, or have completed orthodontic treatment.

089:211 Problems: Orthodontics arr.

089:212 Research Orthodontics arr.

- Current biological, technical publications.

089:216 Practice Management arr.
- Business management of orthodontic practice; solo practice, associateship, partnership, practice corporation.

089:217 Cephalometrics arr.
- Use of skull X-ray (lateral and/or posteroanterior) in formulating orthodontic diagnosis, treatment plans for malocclusions; cephalometrics as a tool for craniofacial structure research.

089:220 Craniofacial Anatomy arr.
- Literature on anatomy, phylogeny, ontogenesis, physiology of craniofacial structures.

089:221 Surgical Orthodontic Seminar 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.

089:400 Dental Treatment of Maxillofacial Deformities 2 s.h.

089:401 Seminar: Maxillofacial Rehabilitation 1 s.h.

089:115 Growth and Development 1 s.h.
- Normal human growth and development; emphasis on craniofacial region.

ORTHODONTICS

Head: John S. Casko
Professors: Samir E. Bishara, John S. Casko, Karin A. Southard, Thomas E. Southard, Robert N. Staley
Professors emeriti: Richard M. Jacobs, William Olin
Graduate degree program: certificate in Orthodontics

Web site: http://dentistry.vh.org/orthogs.html

Predoctoral Program

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Lecture courses guide the student in learning basic concepts of dental and facial growth, as well as treatment-oriented subject matter. In a laboratory course, diagnostic records are taken and evaluated and treatment appliances are fabricated. The department supervises a volunteer program for clinical treatment of selected patients.

Graduate Program

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Satisfactory completion of a 24-month period of intensive study, including lecture courses, seminars, clinical practicum, and a research paper, qualifies students for the Certificate in Orthodontics. If students satisfactorily complete a thesis based on an original research project, they qualify for an M.S. degree in addition to the certificate.

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Admission

Admission requires a D.D.S. or equivalent and satisfaction of Graduate College requirements. 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 Predoctoral Students

089:115 Growth and Development 1 s.h.
- Normal human growth and development; emphasis on craniofacial region.
PEDIATRIC DENTISTRY

Head: Michael J. Kanellis
Professors: Stephen J. Goepferd, David C. Johnsen, Jimmy R. Pinkham, Jerry D. Walker, James S. Wefel
Professors emeriti: Clemens A. Full, Arthur J. Nowak
Adjunct professor: Rhys B. Jones
Associate professor: Michael J. Kanellis
Assistant professors: Rebecca L. Slayton, Kaaren G. Vargas
Adjunct clinical assistant professors: David Blaha, Alex Brandner, Steve Kelly, Larry Lang, Stephanie Nowysz, Edward Rick
Adjunct clinical instructors: Dennis Kral, Paula Kral
Assistants-in-instruction: Eileen J. Olderog
Adjunct clinical assistant professors: Dennis Kral, Paula Kral
Professor emeritus: William R. Grigsby
Associate professors: Janet M. Gummiller, Benny F. Hawkins
Associate professor emeritus: Paul J. Collins
Assistant professor: Ali Fakhry
Adjunct clinical assistant professors: Guy Bilek, Steven H. Cooper, Ann W. Romanowski, Frank A. Wingrove
Assistant-in-instruction: Nancy A. Slach
Graduate degree: M.S. in Dental Public Health
Graduate nondegree program: certificate in Pediatric Dentistry
Web site: http://dentistry.vh.org/pedsgp.html

The Department of Pediatric Dentistry instructs dental and graduate students in the prevention and treatment of dental diseases in children. 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.

Graduate Program

Graduate study in pediatric dentistry leads to certification (two-year program) or certification and a master’s degree in dental public health (three-year program). Both programs provide special emphasis to preparation for certification by the American Board of Dental Public Health. In addition, the three-year program in dental public health prepares students for certification by the American Board of Pediatric Dentistry. Both programs are fully accredited by the Commission on Dental Accreditation of the American Dental Association.

Students are trained in all phases of pediatric dentistry and have career choices in practice, education, or research. Special emphasis is placed on development of leadership skills and strategies for serving vulnerable populations.

Approximately 50 percent of the program is devoted to advanced clinical activities, 30 percent to didactic courses and practice teaching, and 20 percent to original research. The program includes a core of didactic, clinical, and research-oriented courses supplemented by electives determined by students’ individual interests. Development of a minor subject area is recommended.

Close associations with the Department of Pediatrics in the College of Medicine and with the University Hospital School and the University of Iowa Hospitals and Clinics permit emphasis on oral rehabilitation under general anesthesia, instruction in physical diagnosis, and management of children with developmental disabilities.

Admission

Students apply through the American Association of Dental School’s PASS program.

Financial Support

Stipend support for residents in the three-year program is available to qualified students through a grant from the Office for Maternal and Child Health, Bureau of Community Health Services, Department of Health and Human Services. Stipend support for the two-year program is provided by other federal sources.

Research Opportunities

Clinical and laboratory research projects are in progress, with financial support from federal agencies and other sources. Significant contributions have been made in the areas of cariology, dental materials, dentistry for persons with special health care needs, growth and development, fluoride therapy, child behavior management, prevention, and access to care.

Faculty

Faculty members hold numerous national and state offices, 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. Eight of the department’s professors are diplomates of the American Board of Pediatric Dentistry.

Courses

For Predoctoral Students

090:140 Pediatric Dentistry Diagnosis and Treatment 2 s.h.

090:150 Comprehensive clinical management of pediatric patients

090:160 Clinical Pediatric Dentistry 1 s.h.

090:165 Clinical Seminar in Pediatric Dentistry 1 s.h.

090:230 Research in Pediatric Dentistry arr.

090:250 Practice Teaching in Pediatric Dentistry 0 s.h.

For Graduate Students

090:220 Social, Cultural, and Public Health Issues in Pediatric Dentistry 1 s.h.

090:230 Research in Pediatric Dentistry arr.

090:250 Practice Teaching in Pediatric Dentistry arr.

090:300 Pediatric Dentistry Certificate Program 0 s.h.

Periodontics

Head: Georgia K. Johnson
Professors: Georgia K. Johnson, Frank J. Kohout, Philip A. Latiniotis, Glenn Maze, William C. Rubright
Professors emeriti: William R. Grigsby
Associate professor emeritus: William R. Grigsby
Assistant professor: Ali Fakhry
Adjunct clinical assistant professors: Guy Bilek, Steven H. Cooper, Ann W. Romanowski, Frank A. Wingrove
Assistant-in-instruction: Nancy A. Slach
Graduate degree: M.S. in Oral Science
Graduate nondegree program: certificate in Periodontics
Web site: http://dentistry.vh.org/periogp.html

Predoctoral Program

The Department of Periodontics is concerned with the diagnosis, treatment, and prevention of periodontal diseases. The predoctoral program combines didactic, laboratory, and clinical experience, with emphasis on applying the biological concepts of periodontology to the comprehensive clinical management of patients who have periodontal diseases.

Graduate Programs

Master of Science

The Master of Science program in oral science is available in conjunction with the certificate program in periodontics.

The program requires satisfactory completion of required and elective course work, preparation and defense of an acceptable thesis based on original research, and satisfactory completion of comprehensive written and oral examinations.

Completion of the program requires a minimum of 36 calendar months of full-time study.

Certification

The certification program provides a sound foundation for the clinical practice of periodontics and may be combined with a Ph.D. program. The program meets all requirements of the Commission on Dental Accreditation of the American Dental Association for advanced dental education programs in periodontics. It meets eligibility requirements for certification by the American Board of Periodontology.

Completion of the program requires 36 calendar months of full-time study, including satisfactory completion of required and elective 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.

Admission

Admission to graduate study in periodontics requires the D.D.S. or its equivalent and satisfaction of Graduate College admission requirements (see the Graduate College section of the Catalog). National Dental Board
Examination scores, if available, are required. Interviews are encouraged but not mandatory.

Financial Support
Applicants must be financially prepared to undertake uninterrupted studies. Assistantships and loans are offered, depending on available resources.

Facilities
The department has 20 modern, well-equipped operatories devoted exclusively to periodontics. Hospital experience is available to students in the nearby University of Iowa Hospitals and Clinics and the Veterans Affairs Medical Center. Research facilities include collegiate laboratories in histology, microscopy, biomaterials, quantitation, tissue culture, molecular biology and biochemistry, and microbiology, as well as animal facilities. These collegiate facilities are in addition to those available by arrangement with The University of Iowa Hospitals and Clinics, Eckstein Medical Research Building, and medical laboratories; and the Veterans Affairs Medical Center.

Courses
For Predoctoral Students
092:140 Periodontic Methods I 1 s.h.
Normal periodontium, gingivitis, periodontitis, diagnosis, prognosis, treatment planning.
092:141 Periodontic Methods II 1 s.h.
Initial phase of periodontal therapy, treatment of acute periodontal problems, curettage, gingivectomy, periodontal flap procedures, including surgical considerations.
092:160 Periodontics arr.
Comprehensive clinical management of periodontal patient.
092:165 Periodontology 1-2 s.h.
Comprehensive concepts of periodontology, clinical management of patients

For Graduate Students
092:207 Practice Teaching in Periodontics arr.
Experience in lecturing, directing seminars, clinical teaching.
092:208 Recent Advances in Periodontics arr.
092:210 Periodontology Pathology Seminar arr.
Differential diagnosis, histopathology of oral lesions often encountered in clinical practice.
092:212 Applied Oral Microbiology arr.
Microbiology applied to oral health problems.
092:213 Biochemical Aspects of Periodontology arr.
Blood clotting, cell metabolism, nutrition.
092:225 Periodontology Literature Review I arr.
092:226 Periodontology Literature Review II arr.
092:227 Periodontology Literature Review III arr.
092:228 Periodontology Literature Review IV arr.
092:300 Periodontic Certificate Program 0 s.h.
Advanced dental clinical and didactic education; nondegree program toward eligibility for board certification in periodontics.

PREVENTIVE AND COMMUNITY DENTISTRY

Head: Raymond A. Kothy
Professors: Jed S. Hard, Raymond A. Kothy, Steven M. Levy, Elaine M. Smith
Professors emeriti: Henrietta L. Logan, Nelson S. Logan, W. Philip Phair
Adjunct professor: Rhys B. Jones
Associate professors: Marsha A. Cunningham, Peter C. Damiano, Howard M. Field, Kay D. Messcher, Lawrence C. Peterson, Derek H. Willard
Associate professors emeriti: Hermine McElhaney, Roger W. Simpson
Adjunct associate professors: Nancy Derneau, Jamie Sharp
Clinical associate professor: Howard J. Cowen
Assistant professors: John Warren, Catherine A. Watkins
Adjunct assistant professor: Marcia E. Boyer
Visiting assistant professor: Teresa A. Marshall
Adjunct lecturer: Betsy Momany
Graduate degree: M.S. in Dental Public Health
Web site: http://dentistry.vh.org/prevgp.html

Predoctoral Program
Programs in preventive, community, and geriatric dentistry are designed to increase 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 worldwide. 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, students observe and participate in a variety of activities that nurture their awareness of the societal obligations they must assume in order to practice effectively.

Graduate Program
The M.S. program prepares dentists and dental hygienists to be specialists in dental public health. It has a research emphasis and requires a research project culminating in the completion and defense of a thesis.
The program, designed to be completed in two academic years of full-time study, requires a minimum of 40 semester hours of course work. Successful dentist graduates meet the educational requirements for eligibility for the certifying examination of the American Board of Dental Public Health.

Courses
For Predoctoral Students
111:116 Fundamentals of Clinical Dentistry 3 s.h.
Identification of health and disease in the mouth; practical methods of disease control, philosophy of preventive dentistry; patient assessment, clinical diagnosis. Offered fall semesters.

111:117 Cariology and Preventive Therapies 1 s.h.
Multifactorial etiology of dental caries; support data for use of fluorides, sealants, antimicrobials, and plaque control mechanisms in control, prevention of caries; case study approach. Offered spring semesters Prerequisite: 111:116.

111:118 Preventive Dentistry, Communication, and Patient Care 0, 2 s.h.
Patient oral assessment, communication, patient management skills; oral hygiene instruction for collegiate recall patients; skills in instrumentation for detection, removal of calculus deposits. Offered summer sessions. Prerequisite: 111:117.

111:145 Clinical Preventive Dentistry 0, 2 s.h.
Experience providing complete prophylaxis and preventive services for collegiate patients; development of communication skills in a clinic setting Prerequisite: 111:118.

111:160 The Practice of Dentistry in the Community I 1-2 s.h.
Dental public health, history of dentistry, dental personnel, organized dentistry, professional issues, evaluation of scientific research. Offered fall semesters.

111:161 The Practice of Dentistry in the Community II 1-2 s.h.
Factors that affect profession, practice of dentistry- legal and malpractice issues, supply and demand, types and practices organization, financing and quality of care. Offered spring semesters.

111:185 Broadlawns Medical Center arr.
Experience providing dental care to low-income patients in a metropolitan hospital-based clinic; community-related assignments, on-call assignments in hospital, emergency department; student team experience in Des Moines.

111:186 Colorado Migrant Program arr.
Experience providing primary dental care, outreach services to a migrant population; broad understanding of needs, resources for migrant, low-socioeconomic populations.

111:187 Community Health Care: Davenport arr.
Experience providing dental care at medical-dental ambulatory health care facility serving Scott County; eight-operator dental clinic.

111:188 Dental Health Center-East Central Iowa 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-income patients.

111:189 Special Care Program arr.
Experience providing dental care to physically and mentally compromised adult patients; use of portable dental equipment to care for nursing home residents.

111:191 Private Practice Preceptorship arr.
Development of skills and knowledge necessary for day-to-day practice of dentistry; experience at selected preceptor sites in Iowa.

111:193 Veterans Administration Medical Center-Knoxville arr.
Experience providing dental care to inpatient and outpatient veterans in a 400-bed neuropsychiatric and geriatric hospital; observation of other hospital departments, such as physical therapy, rehabilitative medicine, psychiatry.

111:194 Special Field Clinic arr.
Extramural experiences developed according to student needs, extramural opportunities. Department approval required.

111:195 Hospital Externship arr.
Experience in alternate dental care delivery systems; usually out-of-state. Department approval required.

For Graduate Students
111:200 Introduction to Dental Public Health Science, philosophy, practice of dental public health. 2 s.h.

111:201 Literature Review Methods: Dental Public Health Concepts and process of literature review, particularly in area of student’s interest. 2 s.h.

111:202 Research Protocol Seminar 2 s.h.
Development of a master’s thesis protocol; identification of thesis topic, review of relevant literature, outline of potential research methods.
Prosthodontics is the dentistry specialty involving crowns, fixed partial dentures (bridges), removable partial dentures, complete dentures, maxillofacial prostheses, and implant prostheses.

**Predoctoral Program**

The predoctoral program provides students with the basic principles, practices, and concepts of prosthodontics required for the practice of general dentistry, through laboratory projects and treatment of patients with differing prosthodontic needs.

**Graduate Programs**

The department offers Master of Science and certificate programs. The primary purpose of the M.S. program is to train and prepare dentists for careers in prosthodontic education and/or research. The certificate program is designed primarily for individuals who want to prepare themselves for private practice in prosthodontics. Both programs are 34 months in length and satisfy the educational requirements for eligibility for the American Board of Prosthodontics examination. Students must meet all the requirements for the master’s degree as outlined in the Manual of Rules and Regulations of the Graduate College.

**Master of Science**

Students who wish to pursue a Master of Science degree enroll in the M.S. program in Oral Science through the Graduate College. Students must complete a core curriculum, which includes basic sciences, research methodology, and a thesis based on the student’s original research with the aid of an adviser and thesis committee. In addition, students are required to satisfactorily complete an oral and/or written examination on the thesis and on prosthodontics.

**Certificate Program**

The certificate program may provide more clinical experience than the M.S. program and does not require a thesis. Students must complete a core curriculum, which includes basic sciences, research methodology, and clinical practice-fixed, removable, maxillofacial, implant prosthodontics, and occlusion.

**Admission**

Minimum requirements for admission to both programs correspond to the minimum requirements for admission to the Graduate College. In addition, applicants must hold a D.D.S. or D.M.D. or its foreign equivalent. An interview may be requested. Both programs last a minimum of 34 months and usually begin July 1. Application deadline is November 1.
College of Education

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  Leadership Studies . . . . .  . 361
Psychological and Quantitative
  Foundations . . . . . . . . . . .  . 368

Dean: Sandra Bowman Darnico
Associate deans: Richard D. Shepardson,
  Donald B. Yarbrough
Director, Belin-Blank gifted education center:
  Nicholas Colangelo
Director, educational placement: Rebecca Anthony
Director, Iowa Testing Programs:
  Robert L. Brennan
Degrees: B.A., B.S. (undergraduate degrees granted
  through College of Liberal Arts); M.A.T., M.A., M.S.,
  Ed.S., Ph.D.
Web site: http://www.uiowa.edu/~coe2
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 divisions: counseling, rehabilitation, and student development; curriculum and instruction; planning, policy, and leadership studies; and psychological and quantitative foundations.

Teacher Education Programs
The College of Education at The University of Iowa offers three major teacher preparation programs based on baccalaureate degrees. Two of these, elementary education and health occupations education, involve professional education majors. The third program consists of the professional course work and academic majors required for secondary school teaching.

The college also provides numerous specialized elementary (including early childhood) and secondary teaching endorsement programs.

Preparation for special education teaching is offered at the graduate level. A limited number of undergraduate special education courses also are open to all students who are interested in this area, to those from other teacher education programs, and to those planning to pursue graduate degrees in special education.

All undergraduate students admitted to a teacher education program (TEP) must complete College of Liberal Arts General Education components for the Bachelor of Arts or Bachelor of Science.

Undergraduate Admission to Teacher Education Programs
Undergraduate applicants to The University of Iowa who wish to become teachers indicate their interest in the elementary major, health occupations major, or a specific secondary-level endorsement program on their application for admission. This results in a “Pre-Elementary” (7EP) or a “Secondary Interest” (7SP) notation on the student’s official records. Eligible transfer students are automatically sent TEP application materials from the Office of Admissions when they are admitted to the University. All others must obtain application materials from the Office of Student Services in the College of Education.

Application Deadlines
The deadlines for application to teacher education programs are March 15, June 15, and October 15.

General Requirements
Admission to teacher education programs is competitive. Admission requirements may vary by program area and are based on demand and faculty availability. In order to be considered for admission to a teacher education program, an undergraduate student must satisfy the following:

- admission to The University of Iowa as a degree candidate;
- completion of the American College Tests (ACT) or the Scholastic Aptitude Test (SAT);
- attainment of sophomore standing (30 semester hours completed) before making application to the teacher education program;
- a grade-point average of at least 2.70 on all college course work as well as course work completed at The University of Iowa; and
- application for admission to a teacher education program.

Students who apply for admission for fall 2001 or later will be required to pass a pre-admission exam.

All students must complete a 10-hour voluntary experience in a classroom setting during their first semester in the Teacher Education Program in order to be granted final admission.

Honors in Education
The College of Education Honors Opportunities Program is open to juniors and seniors who have maintained a grade-point average of at least 3.50. Students with lower grade-point averages who have demonstrated research potential may be accepted on the basis of an interview with the education honors director. Honors Opportunities Program students must take 07X:100 Honors Seminar in Education and 07X:101 Senior Honors Project. Successful completion of the program results in an honors designation on the diploma. The Honors Opportunities Program is housed in and administered by the Connie Bein and Jacqueline N. Blank International Center for Gifted Education and Talent Development.

Postbaccalaureate or Graduate Admission
Students who have completed a baccalaureate degree may be admitted to a teacher preparation program in one of two ways. They may apply to the Graduate College and state their objective as “certification only,” or 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 satisfy the following:

- completion to the Graduate College;
- completion of the Graduate Record Examination (GRE) General Test;
- a cumulative grade-point average of at least 2.70 on undergraduate work and 3.00 for M.A.T. objective; and
- admission to a specific certification program (e.g., elementary education, special education, or secondary English).

Students may apply to the College of Liberal Arts as postbaccalaureate students with senior standing. Students who choose this option should not apply as special students; instead, they must apply to the appropriate teacher education program, following the undergraduate admissions procedure, and must meet the general requirements stated in the undergraduate admissions section.

Application deadlines for graduate and postbaccalaureate students with senior standing are the same as those for undergraduates.

Student Teaching
The final phase of the teacher education program is the professional semester, devoted to supervised student teaching and directed observation in a variety of situations. Periodic seminars provide for discussion and evaluation of student teachers’ experiences. The student teaching requirement may not be met by transfer credit except under unusual circumstances and with advance approval.

To be admitted to the student teaching semester, students must submit a separate application to the Office of Student Services in the College of Education. Applications are 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.

Admission to student teaching requires program area faculty approval as well as verification of satisfactory progress in meeting both College of Education standards and program area standards, which are set at the time of admission to the TEP and in some programs are higher than the college’s required grade-point average of at least 2.70. Students should consult with their advisers regarding specific requirements for the program areas.

Opportunities for international and urban student teaching experiences are available.

Waivers
Students who have completed courses that they want to substitute for program requirements should consult with their advisers.

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 Aldine, Texas, (Houston area); Rialto, California (Los Angeles area); and Clark County, Nevada.
(Las Vegas area). These options are open to all education majors who meet the requirements established for these student teaching sites. For more information about this program, consult the Office of Student Field Experiences.

International Student Teaching

International student teaching experiences are available primarily through the Foundation for International Education. Sites include Australia; Costa Rica; England and Wales; Bagalore, India; Ireland; New Zealand; Scotland; and Taiwan. In most locations, students are assisted with housing by the on-site coordinator. Interested students must meet the regular requirements for student teaching and must have the approval of their adviser and the appropriate program coordinator. International assignments are for seven to eight weeks. Secondary education students complete an eight-week assignment in a state-side 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. Elementary education students complete a two-week classroom management course followed by a seven-week assignment in a state-side placement and a seven-week assignment in an international placement. For more information about international student teaching opportunities, consult the Office of Student Field Experiences.

State Requirements

All students seeking an Iowa teaching license must complete a course in human relations and mainstreaming the exceptional learner. These requirements can be met by completing 07F:180 Human Relations for the Classroom Teacher and 07C:100 Mainstreaming the Exceptional Learner. 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 license. Applicants who have been found guilty about education: general education and College of Education offers two minors for education students complete a two-week classroom management course followed by a seven-week assignment in a state-side placement and a seven-week assignment in an international placement. For more information about international student teaching opportunities, consult the Office of Student Field Experiences.

Teacher Licensure and Certification Services

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 semester hours of course work applied to meet program requirements must be earned at The University of Iowa.

The College of Education Office of Student Services provides Iowa application forms and licensure/certification assistance to all students completing approved programs offered by the college. Assistance also is provided to individuals interested in adding endorsements to their Iowa license based on completion of State of Iowa minimum licensure requirements.

Graduate Programs

Graduate study in the College of Education is guided by the general regulations of the Graduate College, with additional requirements set by College of Education faculty. Graduate students in education register in the Graduate College and receive their degrees from that college. Graduate programs are available in the following areas of study.

Counseling, Rehabilitation, and Student Development

M.A., Ph.D.
Counselor Education-Ph.D.
Rehabilitation Counseling-M.A.
Ph.D.
School Counseling-M.A.
Student Development in Postsecondary Education-M.A., Ph.D.
Substance Abuse Counseling-M.A.

Curriculum and Instruction

M.A.T., M.A., M.S., Ed.S., Ph.D.
Art Education-Ph.D.
Curriculum and Supervision-M.A., Ph.D.
Developmental Reading-M.A.
Early Childhood Education-M.A.
Elementary Education-M.A., Ph.D.
Elementary Science Education-M.S.
English Education-M.A.T., M.A.
Foreign Language Education-M.A.T., M.A.
Foreign Language and English as a Second Language-Ph.D.
Language-, Literacy-, and Culture-Ph.D.
Mathematics Education-M.A., Ph.D.
Science Education-M.S., M.A.T., Ph.D.
Social Studies Education-M.A., Ph.D.
Special Education-M.A., Ph.D.

Planning, Policy, and Leadership Studies

M.A., Ed.S., Ph.D.
Educational Administration-M.A., Ed.S., Ph.D.
Higher Education-M.A., Ed.S., Ph.D.
Social Foundations of Education-M.A., Ph.D.
Special Education Administration-Ed.S.

Psychological and Quantitative Foundations

M.A., Ed.S., Ph.D.
Counseling Psychology-Ph.D.
Educational Measurement and Statistics-
M.A., Ph.D.
Educational Psychology-M.A., Ph.D.
Instructional Design and Technology-
M.A., Ph.D.
School Psychology-Ed.S., Ph.D.

Master of Arts in Teaching

The M.A.T. program is designed for academically superior liberal arts graduates who completed few or no professional education courses in their undergraduate program. It is a nonthesis program of at least 42 semester hours. Requirements are listed under “Curriculum and Instruction” in this section of 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 grade-point average of at least 3.00 in undergraduate course work. Requirements include 18 semester hours of graduate course work in the student’s teaching field. A minimum of 20 semester hours of graduate work in education must be taken to satisfy licensure requirements.

A Master of Arts program with a social studies education major leads to initial teacher licensure. See “M.A. in Social Studies Education/Program B” under “Curriculum and Instruction” in this section of the Catalog.

Master of Arts

The College of Education offers a Master of Arts with or without thesis. The nonthesis program usually provides more specialized course work than does the thesis program. Although the nonthesis program is not necessarily a terminal program, students who expect to continue their studies in a doctoral program are urged to select the M.A. thesis program since it offers 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 adviser or division during the early part of their doctoral program. For information about which programs offer a thesis option, see the program descriptions in this section of the Catalog.

Course credits earned more than 10 years before the session in which the degree is to be conferred do not count toward fulfillment of requirements for any master’s degree. Of the minimum 30 semester hours required for the degree, at least 24 must be earned in University
Support Units and Special Resources

Student Services

The Office of Student Services assists students, faculty, staff, and the general public in matters of graduate and undergraduate admissions, 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, the Office of Admissions, and the Registrar’s Office, 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 informational materials are available at the office.

Computer Resources Laboratory

The College of Education Computer Resources Laboratory provides computer services to College of Education students. Students may use its facilities to work on assignments or do research. The laboratory also assists students enrolled in development courses involved with computer-aided instruction, interactive videodisc instruction, and computer-managed instruction.

The Computer Resources Laboratory supports a variety of microcomputers and terminals on-line with University of Iowa mainframes, file servers, and the Internet. Multiple copies of word processors, spreadsheets, databases, programming languages, utilities, and instructional courseware can be found on student stations or file servers.

Curriculum Resources Laboratory

The Curriculum Resources Laboratory provides classroom materials for students and faculty members interested in early childhood, elementary, secondary, and special education. It brings into a convenient central location a large collection of books for children and young adults, K-12 textbooks, curriculum guides and activity books, and non-print materials such as videocassettes, CD-ROMs, audiocassettes, games, pictures, kits, and manipulatives.

All of these instructional materials can be checked out for class assignments, personal examination, and student teaching.

Instructional Media Production Laboratory

The Instructional Media Production Laboratory provides in-house video and audio production, still photography, graphics, and audiovisual equipment services to College of Education faculty and staff. The laboratory supports a video production facility with both studio and location capabilities, videotape editing suites, audio production studios, graphics workroom, audio digitizing, video digitizing, and digital graphics.

The lab also offers a variety of digital media production courses for graduate students in the instructional design and technology program and for undergraduates in the teacher education program. An Iowa Communications Network (ICN) fiber-optic classroom is a recent addition to the Instructional Media Production Laboratory.

Libraries

The Main Library and the Psychology Library provide books, periodicals, reference works, videos, ERIC microfiche, tests, and a reserved book room for students and faculty.

Placement

The Educational Placement Office assists students and alumni seeking teaching, administrative, and related positions at all levels and in all fields. Current information about services and career resources is available through the Educational Placement Office web site. The site provides links to hundreds of other sites that offer information about employment opportunities in schools, colleges, and related organizations (see “Employers” on the College of Education home page). University of Iowa students and alumni can establish a placement file consisting of letters of recommendation to be submitted to potential employers in support of employment applications. The Educational Placement Office’s information center contains a variety of career resources, including books and handouts about job search techniques, resume and curriculum vitae preparation, examples of cover letters, and directories of public and private schools, colleges, and universities.

Professional staff members are available for individual conferences with students to discuss job search materials and strategies or to assist with other career-related matters. Workshops, seminars, and special programs regarding employment in education and job searching are offered regularly.

Iowa Testing Programs

The Iowa Testing Programs staff develops standardized educational tests, such as the widely used Iowa Tests of Basic Skills and Iowa Tests of Educational Development, for use in elementary and secondary schools. This department also conducts research studies in educational measurement and evaluation, publishes the results of these studies, sponsors lectures and symposia, provides consulting services to school systems, and provides training experience for graduate students in measurement and statistics.

Belin-Blank Gifted Education Center

The Connie Belin and Jacqueline N. Blank International Center for Gifted Education and Talent Development conducts research and
service in gifted education. It also gathers and disseminates information on the education of gifted students. Based in the College of Education, the center was established in 1988 by the Board of Regents, State of Iowa, and was renamed in 1995.

The center’s programs and services include the Belin-Blank Fellowship Program in Gifted Education; the Honors Opportunities Program; Invent, Iowa!; the Henry B. and Jocelyn Wallace National Research Symposium on Talent Development; the Wallace Family Conference on Gifted Education in Rural Schools; family counseling; consultation; educational assessment; practicum and internship experiences; course work in gifted education (including state endorsement); talent searches; and a number of precollapse programs for gifted students in grades 3-12.

The center also provides practicum and internship experiences for undergraduate and graduate students and coordinates course work for the Iowa Endorsement in teaching gifted and talented students.

For more information, contact the Belin-Blank center director.

Institute for School Executives

The Institute for School Executives is a membership organization for school districts and other educational agencies. Established more than two decades ago and operated by the College of Education, it provides statewide continuing education and staff development opportunities for school leaders.

An advisory committee of school leaders provides direction and guidance for programming activities. Management and oversight are coordinated by a faculty member of the Division of Planning, Policy, and Leadership Studies, who serves as the institute’s director. Institute activities provide an excellent opportunity for school leaders and College of Education students and faculty members to interact and exchange ideas, experience, and research information on a variety of topics.

Research Support

The dean’s office provides support services for faculty research and development, offers limited funds for faculty research efforts, helps faculty with grant acquisition and preparation, and coordinates such efforts with the University’s Division of Sponsored Programs.

The Cooperating Schools Program, a service of the College of Education since 1972, serves as a liaison between University faculty and students and school districts by placing and coordinating research projects with districts willing to participate in the studies. All University faculty, students, and staff who are planning to conduct research using elementary or secondary students as subjects should contact the Cooperating Schools Program.

Special Resources

The School Program for Emotionally Disturbed Children is located in the child psychiatry unit of University Hospitals and Clinics Psychiatric Service. Children who attend this school are resident patients in the unit. Opportunities are available for student teaching and practicum experience in school psychological services.

The University Counseling Service provides research and practicum opportunities for students in counseling psychology and other college programs.

University Hospital School is a University-affiliated facility and, as such, it strives to provide a viable balance of direct services to developmentally disabled youngsters, interdisciplinary training activities for personnel, and research projects in program development and effectiveness.

Financial Support

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. Many assistantships are listed in a reference available at the Office of Student Services.

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 division or to 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 Assistantships in Education

The Iowa Testing Programs and the Iowa Measurement Research Foundation provide funds to support a limited number of special graduate assistantships in education, in which students work in a research capacity under the direction of a faculty member of their choice. Students must be enrolled for at least 6 but not more than 12 semester hours per semester; the assistantships are for the academic year only and are renewable for a limited number of years. Students admitted to or pursuing any of the advanced degree programs offered by the College of Education are eligible to apply, provided they have committed to a professional career in the United States.

Students must submit transcripts of all completed college work (undergraduate as well as graduate), recommendation forms specific to the assistantship, and scores on the Graduate Record Examination (GRE) General Test. The application form for this assistantship program is available from the director of the Iowa Testing Programs. Application deadline is March 1.

College of Education Student Aid Fund

The college’s student loan fund was established to assist College of Education students who are faced with extraordinary or unforeseen expenses while pursuing degree or licensure programs. The borrower must be a senior or postbaccalaureate student seeking teacher licensure, or a graduate student seeking an advanced degree or licensure in the College of Education. He or she must have completed the equivalent of two semesters of full-time course work at The University of Iowa, have a strong academic record, and demonstrate potential for success in the field of education.

Several scholarships are available to students for the semester in which they student teach. The scholarships are based on need, grade-point average, and future plans for teaching. Applications are accepted each spring from students who will student teach either semester of the following year.

Scholarships are available each year for experienced teachers who are working toward licensure or an advanced degree in educational administration. The scholarships are based on the candidate’s record as an effective teacher and promise as a school administrator; candidates must have completed four years of teaching experience and must be planning to work as an elementary or secondary administrator. Applications are accepted each spring for the following summer or school year.

Information and application forms for loans or scholarships are available from the director of external relations in the dean’s office.

College of Education Awards

Awards are presented to outstanding students in the College of Education at the spring semester meeting of the college faculty.

The Duane D. Anderson Scholarship: for a transfer student from an Iowa community college who is enrolled in a College of Education program. The award is based on academic record, and promise and need.

The Jack Bagford Elementary Education Award: presented annually to an outstanding elementary education student who is an Iowa resident. The student should be scheduled to do student teaching the academic year following the award.

The Blummers-Hieronymus-Feldt Fellowship: awarded annually to a doctoral student in the field of educational measurement and statistics; nominees must have completed at least one full year in the graduate program at The University of Iowa. The award is based on academic performance in graduate course work and professional promise in the field of measurement and statistics; it supplements the recipient’s teaching or research assistantship each year until graduation, to a maximum of three years.

Barry Bratton Memorial Award: for an outstanding student working toward an
advanced degree in instructional design and technology.

The T. Anne Cleary Psychological Research Scholarship: for an outstanding doctoral student engaged in research on the psychological or quantitative foundations of education. The award may be presented to one international student and one permanent resident of the United States each year.

The John Leonard Davies Memorial Award: for an outstanding graduate student majoring in education whose specialization is adult and continuing education.

The Harvey H. Davis Award: for an outstanding candidate for an advanced degree in higher education or educational administration, particularly a student interested in the financing of education.

The Albert Hood Promising Scholar Award: for an outstanding student in the student development program in postsecondary education who is in the process of developing a prospectus for master’s or doctoral research. The award is based on academic performance, quality of the research proposal, the research’s likely impact, and the student’s service to the program and the University.

The Howard R. Jones Achievement Award: for an outstanding graduate student who has made a noteworthy scholarly presentation at a national professional conference or published a significant scholarly article in a reputable professional journal or other substantial printed work.

The Perry Eugene McClanahan Award: for the outstanding candidate for an advanced degree in educational administration.

The Leonard A. Miller Memorial Award: for an outstanding first-year M.A. student majoring in rehabilitation counseling.

The Melvin R. Novick Award: presented annually to a third- or fourth-year student enrolled in the doctoral program in educational measurement and statistics who has shown outstanding academic performance and promise of the highest level of achievement in research in this field.

Paul Opstad Scholarship: for a graduate student in the College of Education whose career or scholarly interests focus on the concerns and needs of international students. The scholarship is based on academic performance and commitment to working with international students.

The Pi Lambda Theta Award-Senior, M.A., and Ph.D. levels: for outstanding doctoral student in the Division of Psychological and Quantitative Foundations who is entering the dissertation phase of study.

U-High Innovative Developments in Education Award: for students who have completed or will complete student teaching during the school year. The award is based on outstanding performance as a student teacher, particularly for innovation and creativity shown during the experience.

The Erwin and Louis Washta International Scholarship: for an international student enrolled in a College of Education program. The award is based on promise and need.

Faculty

All tenure-track faculty members with professional rank 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.

Interdivisional Courses

07X.000 Cooperative Education Internship 0 s.h.

Registration during work assignment periods; maintains full-time student status; requires permanent transcript record of participation. Consent of faculty member required. Prerequisite: satisfactory completion of cooperative education requirements.

07X.029 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). Open only to first- and second-semester students.

07X.100 Honors Seminar in Education 1 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.

07X.101 Senior Honors Project 1-2 s.h.

Collaboration with a faculty member on research project; written report. Prerequisite: 07X.100.

COUNSELING, REHABILITATION, AND STUDENT DEVELOPMENT

Chair: Dennis R. Maki

Professors: Nicholas Colangelo, Dennis Harper, David A. Jepsen, Dennis R. Maki, Leslie Margolin, Ernest Matthes, David M. Rosenthal, Vilia Tarvydas, Elizabeth J. Whitt

Associate professors: Debora Liddell, William A. Matthes, David M. Rosenhalt, Vilia Tarvydas, Elizabeth J. Whitt

Associate professor emeritus: Ralph S. Roberts Jr

Assistant professors: Karen Cocco, Alexandra S. Hall, Beth Perez, Terrell Portman, Anne Helene Skinstad, John Wadowsworth, Sherry Watt

Adjunct assistant professors: Joan Cnaar, David Grady, Elisa Girajeles, Barbara O’Rourke, Johnnie Sims, Marvin Tooman. Patricia Wynn

Adjunct lecturers: Fonda Frazier, Arthur Schut, Carlo Serrato, Orville Townsend

Graduate degrees: M.A., Ph.D.

Web site: http://www.uiowa.edu/-counsel

The Division of Counseling, Rehabilitation, and Student Development prepares practitioners and scholars primarily at the graduate level, through degree programs in counselor education, rehabilitation counseling, school counseling, substance abuse counseling, and student development in postsecondary education. It also offers basic courses in interviewing and interpersonal skills for students in other professional and graduate programs, as well as for undergraduates.

Admission

Detailed information on admission and program requirements is presented on the division’s web site and in the brochure “Programs for Advanced Degrees,” available from the Division of Counseling, Rehabilitation, and Student Development.

All applicants for the Master of Arts and Doctor of Philosophy typically are expected to meet the following admission requirements:

- completed graduate application form;
- copies of official transcripts of all previous college work-undergraduate and graduate;
- official report of Graduate Record Examination (GRE) General Test scores-verbal and quantitative;
- a statement of the candidate’s reasons for seeking an advanced degree in the division, including a statement of personal career objectives;
- a personal or telephone interview, if requested;
- three current letters of recommendation from persons in a position to assess both the applicant’s prospects for completing either the M.A. or Ph.D. and his or her commitment to the profession.

In addition to the above, the following standards are considered for individual program admission decisions.

Master of Arts: An undergraduate grade-point average of at least 2.75 and a composite (verbal and quantitative) GRE General Test score of 1000 or higher

Doctor of Philosophy: An undergraduate grade-point average of at least 3.00 or if a graduate degree has been completed, a graduate grade-point average of at least 3.50; composite (verbal and quantitative) GRE General Test score of 1100 or higher

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 doctoral-level advanced courses.

Master’s-level courses and experiences to be completed are determined in consultation with the adviser and are included in a student’s curriculum plan.

International Students

International students also must provide a Test of English as a Foreign Language (TOEFL) score

The Division of Counseling, Rehabilitation, and Student Development
with their applications. Typically, a score of 580 on the paper-based test is required. Depending on the TOEFL score, the division may require students to take and pass University of Iowa course work in English usage that is designed especially for them.

Final Decision, Special Requirements

The criteria listed above are minimum standards in considering applicants for admission. Final decisions on admissions are made by faculty committees. Also, some programs may have specific admission requirements due to licensure/certification standards. For example, a teaching license/certificate may be required for students pursuing certification in school counseling. Special admission requirements are listed with individual program information.

Conditional Admission

Applicants who do not meet all the minimum requirements for regular admission consideration may still be admitted on a conditional basis if the faculty determines that there are strengths and promises warranting conditional status. The following are divisional conditions.

At the M.A. level: Students must complete at least 12 semester hours of core courses (approved by an adviser) over two consecutive sessions and earn a cumulative grade-point average of at least 3.00.

At the Ph.D. level: Students must complete at least 12 semester hours of core courses (approved by an adviser) over two consecutive sessions and earn a cumulative grade-point average of at least 3.30.

Maintaining Candidacy

All graduate students must meet the following standards in order to maintain their candidacy for a degree:

- maintain the grade-point average required for their curriculum plan (3.00 for M.A., 3.30 for Ph.D.);
- successfully complete a practicum, internship, or equivalent professional experience;
- maintain professional behavior consistent with the American Counseling Association code of ethics 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 hours specified in the curriculum plan and active registration each session (exceptions may be approved by the adviser).

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 division file.

Probational Status

M.A. students who earn an overall grade-point average lower than 3.00 and Ph.D. students who earn a grade-point average lower than 3.30 are notified in writing of their probational status. Students on probational status have two consecutive sessions to raise their grade-point average to the established standard. If that requirement is not met, the student may be removed from the program. Each student is allowed one probational status during his or her program of study.

Application

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 Student Services. Application forms are available from the secretary of the Division of Counseling, Rehabilitation, and Student Development.

Applicants are notified in writing after admission applications have been reviewed. Applicants who are accepted must reply in writing in order to maintain their admission status.

Up-to-date application information, including application deadlines, is available on the division’s home page, on The University of Iowa’s World Wide Web site.

Graduate Programs

Student Development in Postsecondary Education

Master of Arts

The M.A. program provides preparation for college positions in multicultural affairs, student unions and activities, career planning and placement, residence life, international student services, adult and continuing education, and other aspects of student life in postsecondary settings. With additional experience, the M.A. in student development in postsecondary education can serve as a foundation for positions as student deans and college teachers. The program is accredited by the Council of Accreditation of Counseling and Related Educational Programs (CACREP).

No specific program of undergraduate study or work experience is required for admission to the M.A. program. A personal interview is desirable but not required.

Doctor of Philosophy

The Ph.D. program, also accredited by CACREP, provides preparation for advanced positions in postsecondary institutions as well as for faculty and research positions. Examples of such positions include associate dean or dean of students, and director of student activities, financial aid, residence life, international student services, and other aspects of student affairs administration.

It is preferred that applicants to the Ph.D. program have an established record of relevant experience after the master’s degree. The M.A. thesis or its equivalent is not necessary for admission to the Ph.D. program. However, in order to take the Ph.D. comprehensive examination, students must provide an M.A. thesis or its equivalent as evidence of their potential to conduct research.

Rehabilitation Counseling

Master of Arts

The M.A. program in rehabilitation counseling prepares professionals to deliver rehabilitation services and provide case management of resources, through the counseling process, for persons with disabilities. Counselors work in many settings to assist persons with physical, mental, and social disabilities become more productive, satisfied members of society.

Graduates of the program are eligible to take the certification examination to achieve the credential of Certified Rehabilitation Counselor.

The program is accredited by the Council on Rehabilitation Education (CORE).

Doctor of Philosophy

The Ph.D. program in rehabilitation counselor education prepares professionals for leadership roles in rehabilitation education and supervision, research, administration, and service delivery systems. Students in this program focus on three areas of advanced study: counselor education and supervision, research, and professional practice. The program is flexible, permitting students to pursue interests in specific client populations, or to concentrate on one of the basic areas of preparation, including substance abuse counselor education.

Applicants who recently have graduated from an M.A. program in rehabilitation counseling and who have not had at least one year of full-time work experience in rehabilitation counseling may apply. However, work experience is highly desirable and enhances the application.

School Counseling

Master of Arts

The M.A. program, accredited by the Council for Accreditation of Counseling and Related Educational Programs (CACREP), provides preparation for counseling in school settings and licensure in Iowa (K-6, 7-12, or both), as well as many in other states.

Licensure

Applicants with master’s degrees in counseling or a related field, elementary or secondary school teaching licenses, and at least one year of successful teaching experience may apply for licensure in school counseling. Provisional licensure may be granted to applicants who are completing the teaching experience requirement.

Counselor Education

Doctor of Philosophy

The Ph.D. program, also accredited by CACREP, provides preparation for teaching,
leadership, and research positions in counselor education and supervision, and in related fields.

**Substance Abuse Counseling**

**Master of Arts**

The M.A. program in substance abuse counseling prepares individuals to function in a wide variety of community agency settings. Masters’ students gain special expertise in prevention, assessment, intervention, and treatment strategies for substance-related dysfunction through individual, group, family, and community counseling.

Individuals interested in pursuing a Ph.D. with emphasis in substance abuse counselor education should apply to the rehabilitation counselor education doctoral program. They also are encouraged to contact the program coordinator of the substance abuse counseling program.

**Financial Support**

Depending on federal funding, graduate training fellowships may be available for M.A. and Ph.D. students entering rehabilitation counseling through the Rehabilitation Services Administration’s Scholars Program. Many other graduate students in the Division of Counseling, Rehabilitation, and Student Development hold a wide variety of graduate assistantships. For example, many of the University’s student service units award part-time assistantships to graduate students in the division. Applicants for assistantships should contact the division or the coordinator of the particular graduate program they plan to enter.

**Facilities**

In addition to the counseling suite on campus, which serves as a laboratory for training, 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 in approved sites nationwide.

**Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>07C:028</td>
<td>First-Year Seminar</td>
<td>2 s.h.</td>
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<tr>
<td>07C:072</td>
<td>Making a Vocational-Educational Choice</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>07C:112</td>
<td>Human Sexuality</td>
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</tr>
<tr>
<td>07C:119</td>
<td>Family Issues in Giftedness</td>
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<tr>
<td>07C:120</td>
<td>Psychology of Giftedness</td>
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<td>Assessment of Giftedness and Academic Talent</td>
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<tr>
<td>07C:123</td>
<td>Gender Issues and Giftedness</td>
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<tr>
<td>07C:124</td>
<td>Ethnic and Cultural Issues and Giftedness</td>
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<tr>
<td>07C:125</td>
<td>Counseling and Psychological Needs of the Gifted</td>
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<td>07C:126</td>
<td>Cognitive and Affective Needs of Underachieving Gifted</td>
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<td>07C:127</td>
<td>Research and Theory in Talent/Giftedness</td>
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<td>07C:128</td>
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<td>07C:137</td>
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<td>07C:145</td>
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<tr>
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<td>Introduction to Marriage and Family Counseling and Psychotherapy</td>
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<tr>
<td>07C:178</td>
<td>Microcounseling</td>
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<tr>
<td>07C:180</td>
<td>Workshop in Counseling Education</td>
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<td>07C:181</td>
<td>Primary Prevention of Substance Abuse</td>
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<tr>
<td>07C:182</td>
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<tr>
<td>07C:185</td>
<td>Introduction to Substance Abuse</td>
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<tr>
<td>07C:186</td>
<td>Practicum in Teaching and Curriculum Development in Gifted Education</td>
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<tr>
<td>07C:190</td>
<td>Group Processes for Related Professions</td>
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<tr>
<td>07C:194</td>
<td>Individual Instruction in Counselor Education-Undergraduate</td>
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<tr>
<td>07C:199</td>
<td>Counseling for Related Professions</td>
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<tr>
<td>07C:200</td>
<td>Professional School Counselor</td>
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<tr>
<td>07C:201</td>
<td>Introduction to Group Counseling</td>
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<td>07C:203</td>
<td>Career Guidance and Job Placement</td>
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<td>07C:210</td>
<td>Rehabilitation Client Assessment</td>
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<tr>
<td>07C:215</td>
<td>Brief Counseling with Children and Adolescents</td>
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<tr>
<td>07C:220</td>
<td>School Counseling Program Leadership and Management</td>
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<tr>
<td>07C:221</td>
<td>Foundations of Counseling</td>
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<tr>
<td>07C:222</td>
<td>Workshop in Counselor Education</td>
<td>arr.</td>
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<tr>
<td>07C:223</td>
<td>Workshop in Group Counseling</td>
<td>3 s.h.</td>
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<tr>
<td>07C:224</td>
<td>Workshop in Human Sexuality</td>
<td>1 s.h.</td>
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<tr>
<td>07C:225</td>
<td>Workshop in Supervision and Leadership Planning</td>
<td>3 s.h.</td>
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<tr>
<td>07C:226</td>
<td>Workshop in Volunteer Counseling</td>
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<tr>
<td>07C:237</td>
<td>Seminar in Gifted Education</td>
<td>2-3 s.h.</td>
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<tr>
<td>07C:238</td>
<td>Seminar in Gifted Education</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>07C:239</td>
<td>Seminar in Gifted Education</td>
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</tr>
<tr>
<td>07C:240</td>
<td>Seminar in Gifted Education</td>
<td>1 s.h.</td>
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<tr>
<td>07C:241</td>
<td>Introduction to Rehabilitation Counseling and Case Management</td>
<td>3 s.h.</td>
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<tr>
<td>07C:242</td>
<td>Medical Aspects of Disability</td>
<td>3 s.h.</td>
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<tr>
<td>07C:243</td>
<td>Diagnosis and Treatment Planning for Psychiatric Rehabilitation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>07C:250</td>
<td>Multicultural in Helping Professions</td>
<td>3 s.h.</td>
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<tr>
<td>07C:251</td>
<td>Assessment of Substance-Related and Mental Health Disorders</td>
<td>2-3 s.h.</td>
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</tbody>
</table>

Assessment using DSM-IV and appropriate questionnaires; weekly clinical demonstrations. Prerequisite: 07C:188.
07C:254 Appraisal in Counseling 3 s.h.
Analysis, interpretation, and use of assessment instruments used for assessment in counseling and personnel selection; laboratory practice in test administration, scoring, interpretation, reporting; ethical and multicultural considerations. Pre- or corequisite: 07P:143 or equivalent.

07C:255 Vocational Psychology 3 s.h.
Major concepts and research evidence about life span vocational behavior; theories of vocational choice; adjustment, development, and careers in nature world.

07C:262 Marriage and Family Counseling and Psychotherapy 3 s.h.
Introduction to counseling theory, ethics, and techniques as applied to problems of marriage and the family over the life span; multicultural considerations. Advanced graduate standing and consent of instructor required. Recommended: 07C:178 and 07C:221.

07C:263 Consultation Theory and Practice 2-3 s.h.
Analysis of various consultation models, such as behavioral and psychological consultation. Prerequisite: 07C:263, 07W:263.

07C:270 Issues and Ethics in Counseling 2-3 s.h.
Ethical standards, legal issues, and multicultural considerations concerning counseling in schools and agencies; emphasis on professional practice.

07C:280 Topical Seminar in Counselor Education arr.
Special topics dealing with contemporary problems of concern to counselors in specific settings. May be repeated.

07C:281 Introduction to Computer Technology in Counselor Education 1 s.h.
M.A. candidacy in counselor education or consent of instructor required.

07C:283 Treatment Approaches to Substance Abuse and Dependency 3 s.h.
Theoretical and ethical paradigms of treatment; development, multidisciplinary, and historical perspectives; issues in substance abuse treatment; individual, group, family, community counseling. Preerequisite: 07C:185 or equivalent. Same as 042:284.

07C:286 Issues in Substance Abuse Treatment and Clinical Management 3 s.h.
Issues in substance abuse treatment; emphasis on ethical, clinical, and ethical issues. Prerequisite: 07C:185 or equivalent.

07C:287 Practicum and Case Management in Substance Abuse Counseling 3 s.h.
Practical issues in counseling; case conceptualization, documentation, and management; managed care; ethical, multicultural, legal issues; service learning component.

07C:288 Practicum in Substance Abuse Counseling arr.
Supervised experience in assessing client’s mental health, substance abuse treatment; development of counseling relationships, focus on development of microcounseling skills, implementation of treatment plans; clinical experience component. Preerequisite: 07C:288.

07C:289 Internship in Substance Abuse and Mental Health Counseling 3 s.h.
Supervised experience counseling clients related to mental health, mental health counseling, treatment of dual-diagnosed clients in a multicultural context. Prequisite: 07C:252 or equivalent.

07C:293 Individual Instruction in Counselor Education arr.
Consent of instructor required.

07C:294 Treatment of Substance Abusers with Physical and Mental Comorbidity 3 s.h.
Enhancement of awareness and sensitivity to needs of substance abusers with co-existing physical and mental disorders; ethics and treatment strategies in working with dual-diagnosed clients in a multicultural context. Prerequisite: 07C:252 or equivalent.

07C:310 Practicum in School Counseling 3 s.h.
Supervised experience counseling and consulting in elementary and secondary school settings. Prerequisite: completion of school counseling core courses.

07C:311 Practicum in Counseling and Psychological Services for Gifted Students 1-6 s.h.
For graduate students who have had course work in counseling education, counseling psychology, school psychology, educational psychology, or related fields. Consent of instructor required. Prerequisite: 07C:378 or equivalent. Same as 07P:311.

07C:320 Internship in K-12 School Counseling 5-6 s.h.
Half- or full-time supervised placement in elementary and/or secondary school settings; performance of tasks, responsibilities of a school counselor. Prerequisite: 07C:300.

07C:321 Internship in Elementary School Counseling 3 s.h.
Supervised placement in an elementary school setting; performance of tasks, responsibilities of an elementary school counselor. Prerequisite: 07C:300.

07C:322 Internship in Secondary School Counseling 3 s.h.
Supervised placement in a secondary school setting; performance of tasks, responsibilities of a secondary school counselor. Prerequisite: 07C:300.

07C:330 Introduction to Student Services 3 s.h.
History, philosophy, overview of student affairs work in higher education; review of standards and ethics; emphasis on institutional missions, cultures, trends.

07C:331 The College Student 2-3 s.h.
Psychosocial and sociological characteristics of diverse student populations; developmental theories, implications for higher education.

07C:333 Practicum in Student Services arr.
Supervised experience in college student service agencies. May be repeated.

07C:334 College Learning and Development 3 s.h.
Introduction to learning, development among college students; focus on theoretical models of learning, cognitive, psychosocial, and identity development; application to student affairs administration. Prerequisite: 07C:331 or equivalent.

07C:335 Administration of Student Services 3 s.h.
Administrative structures and processes, contexts of student services practice, budgeting, legal issues, research and assessment in student services.

07C:336 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.

07C:337 Administration Theory in Student Affairs 3 s.h.
Issues and problems in student affair administration; theories of organization, administration, leadership. Prerequisite: 07C:335 or equivalent.

07C:338 Essentials of Qualitative Inquiry 3 s.h.
Principles, processes of qualitative research in education; methods of design, data collection and analysis, interpretation, trustworthiness. Open only to Ph.D. students. Prerequisite: introductory research course.

07C:341 Job Development, Placement, and Follow-up 3 s.h.
Observing appropriate jobs for individuals with disabilities who have received rehabilitation services; client, counselor, employer, job specifications. Consent of instructor required.

07C:342 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.

07C:350 Practicum 1 in Rehabilitation Counseling and Case Management arr.
Development of knowledge, skills, and attitudes for counseling persons with disabilities in an agency setting; work with diverse populations; theory, philosophy, ethics, and structure of counseling and case management within framework of a developmental model. Pre- or corequisites: 07C:178 and 07C:221.

07C:351 Practicum II in Rehabilitation Counseling and Case Management arr.
Supervised experience with clients in a rehabilitation agency. May be repeated. Consent of instructor required.

07C:352 Internship in Rehabilitation Counseling and Case Management arr.
Full-time clinical experience in rehabilitation settings; training in wide range of rehabilitation activities, under supervision of certified rehabilitation counselor (CRC). Consent of instructor required.

07C:353 Advanced Counseling and Psychotherapy 3 s.h.
Theories, techniques, and ethics of counseling clients with personal and interpersonal problems; ethical and multicultural considerations. Consent of instructor required.

07C:356 Student Services Program Development 3 s.h.
Techniques of assessment, implementation, and evaluation of programs for college students.

07C:357 Advanced Group Counseling and Psychotherapy 3 s.h.
Theories and techniques of group counseling and psychotherapy; integration of theory, experience, and research in group counseling; ethical and multicultural considerations. Consent of instructor required.

07C:360 Advanced Practicum In Counseling arr.
Supervised practice in counseling; intensive analysis of counselor ethics, styles, methods. Advanced graduate standing in counseling education and consent of instructor required. Prerequisite: introductory practicum in counseling.

07C:365 Internship in Student Services arr.
Professional experience in diverse student services settings; seminar with focus on professional identity development, transition to the workplace. May be repeated.

07C:366 Organization Development and Change 3 s.h.
Same as 07P:366, 07W:366.

07C:369 Advanced Seminar in Rehabilitation Counseling and Psychotherapy 3 s.h.
Philosophy, theory, research base, practice of rehabilitation counseling, psychology; ethical and multicultural considerations; psychological aspects of disability, client assessment, history, systems, contemporary issues.

07C:380 Practicum in College Teaching arr.
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. Graduate standing and consent of instructor required.

07C:391 M.A. Thesis in Counseling Education arr.
Consent of instructor required.

07C:394 M.A. Equivalency Research in Counseling Education 1-3 s.h.
Preparation for comprehensive examination. Consent of instructor required.

07C:395 Educational Specialist Research in Counseling Education arr.
Consent of instructor required.

07C:400 Professional Seminar and Ethics in Counselor Education 3 s.h.
Advanced seminar, focus on professional, ethical, multicultural issues. Ph.D. candidacy in counselor education or consent of instructor required.

07C:411 Seminar: Research on College Students 3 s.h.
College student learning and development, outcomes, persistence. Open only to Ph.D. students. Prerequisite: 07C:336.

07C:421 Seminar: Student Affairs Practice 3 s.h.
Institutional cultures, student affairs leadership, organizational structures. Open only to Ph.D. students. Prerequisite: 07C:335 or equivalent.

07C:431 Seminar: Current Issues in Student Affairs 3 s.h.
Critical and current issues in student affairs practical process, including ethics, supervision, writing for publication, legal issues. Open only to Ph.D. students. Prerequisite: 07C:335 or equivalent.

07C:432 Seminar: Student Affairs Practice 3 s.h.
Institutional cultures, student affairs leadership, organizational structures. Open only to Ph.D. students. Prerequisite: 07C:335 or equivalent.

07C:433 Seminar: Current Issues in Student Affairs 3 s.h.
Critical and current issues in student affairs practical process, including ethics, supervision, writing for publication, legal issues. Open only to Ph.D. students. Prerequisite: 07C:335 or equivalent.

07C:454 Seminar: Counselor Supervision and Consultation 3 s.h.
Conceptual models, ethical, multicultural considerations, research, and program design for counselor supervision and consultation. Prerequisite: advanced practicum or equivalent.

07C:455 Supervising the Counseling Practicum arr.
Supervision of students enrolled in counseling practicum. Consent of instructor required Pre- or corequisites: 07C:360 or 07C:454 or equivalent.
CURRICULUM AND INSTRUCTION

Chair: James D. Marshall


Professors emeriti: Jack Bagford, Louise Beltramo, G. Douglas Conner, Alan R. Frank, Beatrice A. Furner, John H. Haefner, Alfred Healy, Clifford E. Howe, Jerry N. Kuhn, Dorothy T. McDonald, Marilyn J. Zwir


Specialization: art, early childhood, early childhood education, English language arts, history, mathematics, music, reading, science, social science, special education. Copies of the requirements for each area of specialization are available in the Division of Curriculum and Instruction Office.
Course requirements for each major are available in the Division of Curriculum and Instruction office. Candidates for secondary school teaching licensure/certification also may receive approval to teach in additional subject areas by completing an approved program of 24 or more semester hours of course work in those areas. Secondary school teacher preparation programs are provided in the following areas.

Art
- Coaching
Communication studies (speech communication/ theatre arts)
English
- English as a second language
Foreign languages-Chinese, French, German, Italian, Japanese, Latin, Russian, Spanish
Mathematics
- Music
Reading
Science, including *physical science, biological sciences, chemistry, physics, earth science, and 9-12 all science
Social science, including anthropology, economics, geography, history, political science, psychology, and sociology
*Available as an additional approval area only; major in another subject matter area is required for licensure.

An Iowa secondary teaching license qualifies holders to teach in grades 7-12. 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-6. This K-6 Licensure/certification is available only in the same subject area as the secondary certification.

Candidates can obtain more information and the name of an adviser from the Division of Curriculum and Instruction office.

**REQUIREMENTS**

Undergraduate candidates for licensure/certification to teach in secondary schools must complete the following requirements, in addition to the requirements in their major.

One introduction to teaching course 2-3 s.h.
07E:180 Human Relations for the Classroom Teacher 3 s.h.
07P:075 Educational Psychology and Measurement 3 s.h.
07S:100 Foundations of Education 3 s.h.
07U:100 Mainstreaming the Exceptional Learner 3 s.h.
07W:111 Technology in the Classroom 2 s.h.
One or more methods of teaching courses in the major field 3-9 s.h.
One college-level mathematics course (22M:001, 22M:002, and 22M:003 do not apply) 4 s.h.
One biological science and one physical science course 4 s.h.
One social science and one behavioral science course 4 s.h.
Student teaching 12 s.h.

Students must complete the methods courses in their major teaching fields before student teaching.

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); Rialto, California; and Clark County, Nevada (Las Vegas area). In most program areas, students also may apply to student teach in overseas sites for the second half of the semester.

Additional information about options for student teaching and application procedures is available from the Office of Student 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.

**Special Education**

Students may be admitted to the Graduate College for the purpose of obtaining a master’s degree in special education. This degree includes certification in an area or areas selected by the student. See “Admission” under “Special Education.”

**Graduate Programs**

**Early Childhood Education**

**Master of Arts**

The Master of Arts program in early childhood education is designed to prepare persons to administer programs and/or deliver education and care to children from infancy through the early primary grades in private or public settings, or to serve as early childhood consultants or community college instructors. It is offered in thesis and nonthesis options.

**ADMISSION**

Students must meet the general admission requirements of the Graduate College and have an undergraduate grade-point average of at least 3.00. Students must hold a valid prekindergarten/elementary endorsement or equivalent and must have at least one year of direct experience working with young children. Course work completed 10 or more years before admission does not count toward the M.A. requirements.

Non-native students must have a TOEFL score of at least 550 (on the paper-based test) to be eligible for admission; those with scores of 550 to 600 are admitted conditionally and must complete an English evaluation before registering for courses. Course work recommended by English proficiency evaluators must be completed before conditional status can be granted.
be changed. English proficiency course credit may not be applied toward the master’s degree.

**REQUIREMENTS**

The thesis option requires a minimum of 30 semester hours of credit; the nonthesis option requires 32.

**FOUNDATION COURSES**

Both of these:
07E:169 History and Philosophy of Early Childhood Education 3 s.h.
07E:264 Early Literacy Development and Instruction 3 s.h.

Three of these:
07E:189 Development and Administration of Child Care Centers 3 s.h.
07E:267 Inquiry-Based Curriculum Development in Early Childhood and Elementary Classrooms 3 s.h.
07E:268 Curriculum Development for Young Children 3 s.h.
07E:308 Seminar: Research and Current Issues (Early Childhood-Section 37) 3 s.h.

**RELATED COURSES**

One of these (or an approved substitute):
07P:106 Child Development 3 s.h.
07P:206 Advanced Child Development 3 s.h.
031:114 Cognitive Development of Children 3 s.h.

One of these:
07E:114 Parent-Child Relationships 3 s.h.
07E:134 Parent-Teacher Communication 3 s.h.

**AREAS OF SPECIALIZATION**

**Curriculum**

Students must complete at least 11 semester hours of credit in courses chosen from one or two content areas, such as reading and/or language arts, mathematics, science, social studies, music, art, and children’s literature.

**Administration and Social Agencies**

Eleven semester hours from these:
07D:285 School and Community Relationships 3 s.h.
07F:154 Education, Race, and Ethnicity 2-3 s.h.
07F:205 Research Process and Design 3 s.h.
07H:171 The Community College 2-3 s.h.
07S:186 Curriculum Foundations 2-3 s.h.
07W:120 Introduction to Instructional Design 3 s.h.
042:129 Substance Use and Abuse 3 s.h.
042:143 Social Welfare Policy and Practice 3 s.h.
042:196 Family Violence 2-3 s.h.
042:220 Family Law 3 s.h.
042:252 Family Policy: Domestic and International 3 s.h.
042:262 Social Policy and Integrated Practice: Domestic and International 3 s.h.

**Children with Diverse Abilities**

Eleven semester hours from these:
07U:100 Mainstreaming the Exceptional Learner 3 s.h.
07U:130 Exceptional Persons 3 s.h.
07U:132 Introduction to Behavioral Disorders 3 s.h.
07U:135 Mental Retardation 3 s.h.

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**Family Support**

Eleven semester hours from these:
07C:112 Human Sexuality 1-3 s.h.
07C:119 Family Issues in Giftedness 1 s.h.
07E:185 Marriage and Family Interaction 3 s.h.
07C:178 Microcounseling 1, 3 s.h.
07C:199 Counseling for Related Professions 3 s.h.
07E:114 Parent-Child Relationships 3 s.h.
07E:134 Parent-Teacher Communication 1-3 s.h.
07P:136 Home/School/Community Partnerships 3 s.h.
028:130 Human Nutrition 3 s.h.
034:161 The American Family 3 s.h.

**Multicultural Issues**

Eleven semester hours from these:
07C:124 Ethnic and Cultural Issues and Giftedness 1 s.h.
07F:180 Human Relations for the Classroom Teacher 3 s.h.
07U:133 The Culturally Different in Diverse Settings 3 s.h.
035:119 Introduction to Bilingualism 3 s.h.
129:124 Black Culture and Experience 3 s.h.

**Psychology**

Eleven semester hours from these:
07P:206 Advanced Child Development 3 s.h.
031:103 Social and Personality Development 3 s.h.
031:105 Personality 3 s.h.
031:113 Language Processing 3 s.h.
031:114 Cognitive Development of Children 3 s.h.
031:118 Infant Development 3 s.h.
031:135 Principles of Behavioral Analysis 3 s.h.
031:166 Childhood Psychopathology 3 s.h.
031:170 Behavior Modification 3 s.h.
031:218 Cognitive Development 3 s.h.
031:219 Psychology of Language 3 s.h.

**Thesis/Research**

07P:143 Introduction to Statistical Methods 3 s.h.
07P:150 Introduction to Educational Measurement 3-4 s.h.
07E:392 Field Service Project 3 s.h.
07E:393 M.A. Thesis in Early Childhood and Elementary Education 2 s.h.

**COMPREHENSIVE EXAMINATIONS**

All students take one written examination in general early childhood education. Nonthesis students take a second written examination in their elected area of specialization. Thesis students take a second, oral examination related to their thesis or field-service project.

Note: This program does not lead to the Iowa endorsement for teaching prekindergarten-kindergarten or to any other teaching endorsement, with the exception of postsecondary licensure/certification when all the required courses in that area of specialization have been successfully completed.

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**Elementary Education**

**Master of Arts**

This program is designed to prepare master’s degree candidates in elementary education to serve as team leaders, grade level or subject area supervisors, curriculum consultants, or master teachers.

**ADMISSION**

Admission requirements are the same as those established by the Graduate College. In addition, applicants must have completed an undergraduate program of teacher preparation in either early childhood or elementary education. Graduate students who have not completed an undergraduate program in elementary education must be admitted initially as “certification only” students.

**REQUIREMENTS**

The thesis option requires 30 semester hours of credit, the nonthesis option 32; 24 semester hours must be taken in University of Iowa courses, with 8 semester hours completed on campus. Course work completed 10 or more years before admission does not count toward the M.A. requirements.

**Foundations and Educational Psychology**

Two of these (4-7 semester hours):
07E:102 History of American Education 2 s.h.
07E:117 Philosophies of Education 2, 3, 5 s.h.
07E:130 Educational Sociology 2-3 s.h.
07P:101 Methods of Student Assessment 3 s.h.
07P:143 Introduction to Statistical Methods 3 s.h.
07P:150 Introduction to Educational Measurement 3-4 s.h.
07P:200 Educational Psychology 3 s.h.
07W:120 Introduction to Instructional Design 3 s.h.

**Research and Curriculum**

Two of these:
07E:267 Inquiry-Based Curriculum Development in Early Childhood and Elementary Classrooms 3 s.h.
or
07E:300 Design and Organization of Curriculum 3 s.h.
or
07E:304 Seminar: Current Issues and Research in Elementary Education 4 s.h.

**Instructional Improvement**

Three of these (6-9 semester hours):
07E:204 Literature for Children II 3 s.h.
07E:233 History and Foundations of Social Studies Education 3 s.h.
07E:234 Foundations of Mathematics Education 3 s.h.
07E:260 Supervision of Elementary School Language Arts 3 s.h.
07E:264 Early Literacy Development and Instruction 2-3 s.h.
or
07E:265 Reading and Writing across Intermediate Grades 3 s.h.
The science specialization (19 semester hours) includes science courses (16 semester hours) that are selected by the candidate in consultation with the adviser. A series of application courses (097:102 Societal and Educational Applications of Earth Sciences and Environmental Sciences, 097:103 Societal and Educational Applications of Biological Sciences, and 097:105 Societal and Educational Applications of Physical Sciences) are an integral component of the science courses. Candidates who have not taken comparable courses are expected to take two application courses. Students who elect the nonthesis program also complete a study (6 semester hours) in an integrated group of supporting courses selected, in consultation with the adviser, from a science, an applied science, or education.

Students who elect a thesis program complete masters thesis credit (6 semester hours of 07E:393). All candidates for the Master of Science must satisfy the requirements for a basic science endorsement as outlined in the October 1988 Iowa Certification Rules.

Doctor of Philosophy

The doctoral program in elementary education prepares students for college and university teaching and research positions in elementary education, and for research, curriculum, supervisory, or administrative positions in public school systems and government educational agencies.

ADMISSION

Candidates for admission to the program should have a combined score of at least 1000 on the verbal and quantitative sections of the Graduate Record Examination (GRE) General Test. The required grade-point average for continuation in the program is that prescribed by the Graduate College.

REQUIREMENTS

The program requires a minimum of 90 semester hours of credit, including 10-15 semester hours of dissertation credit. Each student prepares an individual plan of study in consultation with an adviser. The final plan must be approved by the adviser and the division chair.

The doctoral program should include a strong background of elementary education course work. Each program also must include two areas of concentration. One area must be in elementary education (e.g., children’s literature, curriculum, language arts, early childhood, mathematics, reading, or social studies). The second must broaden, deepen, or heighten the student’s programmatic focus or must be in an area outside of elementary education (e.g., English, library science, elementary administration, or child development).

All doctoral candidates must complete three courses in research methodology, one in quantitative research methodology, one in qualitative research methodology, and a third course chosen in consultation with the adviser.

The comprehensive examination consists of three 3-hour exams: one in elementary...
education and one in each of the two areas of concentration.

Ph.D. in language, literacy, and Culture

This program prepares students for careers as literacy researchers and as college and university literacy educators. It considers influences of the broader home and community cultures on literate practices and grounds students in appropriate research methodologies. Course work provides a broad background in relevant theoretic and research literature as well as opportunities to conduct original studies that explore the nature of literate practices both in and out of school.

ADMISSION
Applications for admission and for financial aid are reviewed by January 15 each year. Applicants should have at least two years of experience teaching language or literacy (reading, writing, English, language arts) and should have earned a master's degree or have completed a significant amount of graduate course work 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 scores; a sample of academic writing; and three letters of recommendation.

REQUIREMENTS
The program requires a minimum of 72 semester hours of approved course work beyond the B.A., including an introductory seminar in language and literacy, at least 9 semester hours of additional doctoral seminars in the program, at least 6 semester hours of course work in research methodology, and at least 12 semester hours of graduate work taken outside the College of Education.

As students near the completion of their course work, they identify several key strands for review and synthesis. With guidance from their advisers, students prepare for written and oral exams in one or two areas. They also submit a substantive issues paper in one or two areas, typically a report of an exploratory study or a review of research literature on a topic of special interest.

Following successful completion of the comprehensive exam and approval of the issues paper, 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.

Detailed information on the Ph.D. in language, literacy, and culture is available on the college's web site.

Secondary Education

The Division of Curriculum and Instruction offers, or jointly administers with departments in the College of Liberal Arts, advanced degree programs in the following fields of professional interest: art education, communication studies education, curriculum and supervision, developmental reading, English education, foreign language education, mathematics education, music education, science education, and social studies education.

In some fields, only master's level programs are offered, whereas in other fields, educational specialist and Ph.D. degree programs also are offered. All degrees offered are listed below, grouped by program area.

M.A. in Art Education

The Master of Arts program is administered by the School of Art and Art History in cooperation with the College of Education. Students make application for admission to the School of Art and Art History.

The program prepares highly qualified teachers of art for elementary and secondary schools and community colleges. The strong academic emphasis of this program assists teachers who are themselves creative artists to become highly literate in the history and language of art.

ADMISSION
Applications must have completed the equivalent of the minimum course work in art for the B.A. or B.F.A. degree in art from The University of Iowa, and a license/certificate to teach art. Applications must be accompanied by a representative portfolio of the candidate's work, consisting of eight slides of reproductions of artwork and one example of written work. The written work may be a paper previously written for a course or it may be 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. candidates must meet Graduate College requirements for admission.

REQUIREMENTS
M.A. candidates must complete the following: Studio and art history (18 s.h.): either 12 semester hours of studio art and 6 semester hours of art history, or 12 semester hours of art history and 6 semester hours of studio art. Art education seminars (8 s.h.): the course 073:367 Seminar: Current Issues in Art Education.

An additional 12 semester hours: to be specified after the student begins the program. Thesis: either a written or studio thesis (students who elect a studio thesis must pass M.A. clearance in the School of Art and Art History).

Ph.D. in Art Education

The doctoral degree program is administered by the School of Art and Art History. Students make application for admission to the College of Education.

The program prepares college teachers and researchers in art education and supervisors of art in state departments of education and school systems. It also provides students with an opportunity to continue inquiry and creative work in art history and in studio.

ADMISSION
Students must meet the general requirements for doctoral students in the Graduate College and have an M.A. in art education from The University of Iowa or an equivalent degree from an accredited degree-granting college or university. Application to the program must be accompanied by a representative portfolio of the candidate's work, consisting of 12 slide reproductions of artwork and two examples of written work. The written work may consist of papers previously written for a course or original papers. These should be submitted to the Art Education office.

In the case of course work deficiencies, students must register for pertinent courses. Two years of successful teaching experience in an elementary or secondary school is required prior to admission or completion of the doctoral program.

REQUIREMENTS
Students must complete at least 60 semester hours of graduate work beyond the M.A., planned with the adviser, including at least 15 semester hours in the School of Art and Art History, 15 semester hours in art education seminars, 15 semester hours in a related area (e.g., aesthetics, anthropology, higher education, early childhood education, psychology, sociology), and 15 semester hours in thesis and tool courses. 076:360 Introduction to Research in Art Education is also required.

Students take both oral and written comprehensive examinations. The written examination consists of an in-depth research problem assigned by the examining committee, to be completed within 14 days. An oral examination on the project is then held (the written portion of the examination is not intended to relate directly to the dissertation proposal).

Students must satisfactorily complete a written dissertation that constitutes a contribution to scholarship, for at least 12 semester hours of credit. The student is expected to prepare a dissertation proposal and defend it before the dissertation committee. An oral examination on the dissertation is the Ph.D. final examination.

M.A. in Communication Studies Education

The program prepares teachers and supervisors of speech communication for secondary and postsecondary positions.

ADMISSION
Candidates must have a grade-point average of at least 2.75. Candidates without prior academic background in speech communication may need to take additional courses beyond the minimum requirement. Application should be made to the Department of Communication Studies.
REQUIREMENTS

Students must complete a minimum of 30 semester hours of approved graduate courses, at least 24 of them at The University of Iowa, as follows.

Two communication studies graduate courses in communication education
Two graduate courses in a second division of communication studies
Two graduate courses in a third division of communication studies
036:300 Introduction to Research
Three 200- or 300-level courses in communication studies
Other courses recommended by the adviser and/or committee

Students must successfully complete a paper or project involving substantial scholarly investigation and writing, usually done in a seminar or independently under the direction of an adviser. The project or paper must be circulated to the committee with the comprehensive examination.

Students take a comprehensive examination consisting of three 2-hour segments to be defined and limited by the student and an adviser when the plan of study is prepared.

M.A. in Curriculum and Supervision

The program prepares teachers and administrators for positions as consultants, directors, and coordinators in secondary school curriculum development.

ADMISSION

Students must meet the general requirements of the Graduate College. Teaching experience is desirable.

REQUIREMENTS

Common Core

Total of 19-20 semester hours, as follows:

07E:117 Philosophies of Education (or equivalent) 2 s.h.
07S:186 Curriculum Foundations 2-3 s.h.
07P:150 Introduction to Educational Measurement 3-4 s.h.
07P:255 Construction and Use of Evaluation Instruments 3 s.h.
or
07P:257 Educational Measurement and Evaluation 3 s.h.
07E:132 (073:132) Middle School Curriculum and Methods 3 s.h.
07E:300 Design and Organization of Curriculum 3 s.h.
07S:291 Secondary School Curriculum 3 s.h.

Research Tool

Selected in consultation with the adviser, typically 07P:143 Introduction to Statistical Methods (3 semester hours)

Cognates

Total of 4-6 semester hours in a subject field such as English

Electives

Total of 4-6 semester hours selected in consultation with adviser

Thesis

For students electing a thesis program, 07S:393 Master’s Degree Thesis (2-4 semester hours)

COMPREHENSIVE EXAMINATION

Two 3-hour comprehensive examinations are required: one in curriculum and one in a related field in education or in a cognate field; or three 2-hour examinations.

Ph.D. in Curriculum and Supervision

This program, administered by the College of Education, prepares students for leadership positions in the field of curriculum for secondary schools, state departments, intermediate systems, and college teaching.

ADMISSION

Students must meet the general requirements of the Graduate College, hold a valid teaching license/certificate, and have at least two years of teaching experience. Applicants must be approved for admission by a faculty review committee.

REQUIREMENTS

A minimum total of 90 semester hours, including other approved graduate course work, is required.

Common Core

Total of 36-42 semester hours, as follows:

07E:132 (07S:132) Middle School Curriculum and Methods 3 s.h.
07E:300 Design and Organization of Curriculum 3 s.h.
07E:304 Seminar: Current Issues and Research in Elementary Education 4 s.h.
07S:186 Curriculum Foundations 2-3 s.h.
07S:291 Secondary School Curriculum 3 s.h.
07S:391 Problems of Curriculum Planning 3 s.h.

At least two advanced supervision courses in secondary or elementary school subject fields 6 s.h.
07P:150 Introduction to Educational Measurement 3-4 s.h.
or
07P:255 Construction and Use of Evaluation Instruments 3 s.h.
or
07P:257 Educational Measurement and Evaluation 3 s.h.
07S:293 Individual Instruction in Secondary Education (Practicum) 2-3 s.h.

Research Tools

A minimum of two research tools, typically statistics, research design, or foreign language 9-12 s.h.

Electives

Total of 6-8 semester hours, chosen in consultation with adviser; recommended electives include the following.

07D:297 Administrative Leadership Theory 3 s.h.
07E:171 Reading and Writing: Processes and Instruction 3 s.h.
07F:117 Philosophies of Education 2 s.h.
07F:130 Educational Sociology 2 s.h.
07P:200 Educational Psychology 3 s.h.
07U:130 Exceptional Persons 3 s.h.
07W:120 Introduction to Instructional Design 3 s.h.

Cognates

All doctoral candidates are required to complete at least 8 semester hours of cognate work in areas such as sociology, psychology, or political science.

Thesis

07S:493 Ph.D. Thesis 10-18 s.h.

COMPREHENSIVE EXAMINATION

Candidates take three 3-hour comprehensive examinations, one in secondary school curriculum and two in related fields in education or in a cognate field.

M.A. in English Education

This program, intended for experienced teachers of English, provides opportunities for professional development and preparation for department chairs, supervisors of English, and curriculum specialists for secondary schools. Application should be made to the College of Education.

ADMISSION

Applicants should have taken extensive course work in English and have taught English for at least two years, and must meet the general requirements of the Graduate college. Students must maintain a 3.00 grade-point average while enrolled in the program.

REQUIREMENTS

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 advisers plan the program of study together. The only required course is 07S:315 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).

M.A.T. in English Education

The M.A.T. program is designed for students who have an undergraduate degree in English or a related field and few or no professional education courses. Successful completion of the program enables students to receive a credential to teach English in secondary schools.

ADMISSION

Applicants must have a B.A. in English or the equivalent, with an undergraduate grade-point average of at least 3.00. They also must take the Graduate Record Exam. Since this is a credentialing program, candidates must not have qualified for a credential previously. Applicants are expected to have no more than 6 semester
hours of course work in professional education courses prior to admission.

REQUIREMENTS
The program requires a minimum of 45 semester hours, including the following courses.

English
07S:315 (08P:405) M.A. Seminar: English Education arr.
08N:141 Approaches to Teaching Writing 3 s.h.
08P:182 Language and Learning 2-3 s.h.
08P:198 Teaching Literature to Adolescents 3 s.h.

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, one of which focuses on cultural studies
A course in 19th- or 20th-century British literature
A course in writing (in addition to 08N:141)
A course in oral communication

Education
07F:180 Human Relations for the Classroom Teacher 3 s.h.
07P:200 Educational Psychology 3 s.h.
07S:100 Foundations of Education 3 s.h.
07S:114 Introduction and Practice: English and Speech 3 s.h.
07S:115 Methods: English 3 s.h.
07S:187 Seminar: Curriculum and Student Teaching 1-3 s.h.
07S:191 Observation and Laboratory Practice in the Secondary School arr.
07S:192 Observation and Laboratory Practice in the Secondary School arr.
07S:194 Methods: High School Reading 2-3 s.h.
07U:100 Mainstreaming the Exceptional Learner 3 s.h.
07W:111 Technology in the Classroom 2 s.h.

Foreign Language Teaching
All of these:
07E:183 (7S:183) Second Language Classroom Learning 3 s.h.
07S:197 Principles of Course Design for Second Language Instruction 3 s.h.
07S:200 Fundamentals of Second Language Assessment 3 s.h.
Total of 21-27 semester hours from these:
07E:106 (07S:106) Foreign Language Education Practicum I 3 s.h.
07E:107 (07S:107) Foreign Language Education Practicum II 3 s.h.
07S:116 Learning to Teach Second Languages I 3 s.h.
07S:117 Learning to Teach Second Languages II 3 s.h.
07S:187 Seminar: Curriculum and Student Teaching 1 s.h.
07S:191 Observation and Laboratory Practice in the Secondary School arr.
07S:192 Observation and Laboratory Practice in the Secondary School arr.

Optional for K-12 Licensure
07S:189 Elementary School Special Subject Area Student Teaching 1-4 s.h.

A two-part comprehensive examination is required. One part covers issues in foreign language education related to theory and practice, the other covers knowledge of and proficiency in the language and/or literature of the candidates’ choice.

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 TEP program or licensed inservice teachers.

ADMISSION
Applicants are admitted to the ESL endorsement program three times each year. Application deadlines are June 15 for fall admission, October 15 for spring, and March 15 for summer. Each applicant must submit a one-page essay explaining why he or she wishes to teach ESL; a transcript of all university-level course work; evidence of having completed two semesters of foreign language beyond the language component of the College of Liberal Arts General Education Program or a documented score of “advanced plus” on the oral proficiency interview (OPI) given in the language department. Non-native speakers of English must provide evidence of scoring a 55 or higher on the Test of Spoken English.

M.A. in Foreign and Second Languages Education
This degree is appropriate for persons who would like to pursue a foreign language 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 the practicing teacher. The degree gives the candidate the opportunity to design a program with a special focus.

ADMISSION
Students must meet the general requirements of the Graduate College, have prior teaching experience, be proficient in English and in another language, have acquired at least 20 semester hours in undergraduate, upper division foreign language course work. Applicants should submit a statement of purpose explaining their graduate study goals. A grade-point average of at least 3.00 in undergraduate course work and some experience living, working, and/or studying in the applicant’s chosen target language culture are preferred. International applicants must score at least 600 on the paper-based TOEFL or 250 on the computer-based TOEFL, and 5 on the TWE. Students must maintain a 3.00 grade-point average while enrolled in the program. Candidacy for the master’s degree is reevaluated annually.

REQUIREMENTS
The M.A. requires 33-36 semester hours. It affords students three specializations: second languages education, a target language area (may subsume 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 the advisor.

Students take at least 15 semester hours in second language education course work; 9 semester hours in graduate language or linguistics, and 9 semester hours in a cognate area. Students must earn 9 semester hours in courses numbered 200 or above. Successful candidates complete a research project and pass a written examination developed by the graduate committee. The committee consists of at least three faculty members, two of whom must be in the foreign and second languages education department. Suggested courses are as follows.

Foreign and Second Languages Education
Total of 15 semester hours
07E:183 (07S:183) Second Language Classroom Learning 3 s.h.
At least 9 semester hours of graduate language courses in the student’s area of interest, chosen in consultation with the adviser.

**Cognate Area**
At least 9 semester hours chosen in consultation with the adviser.

**MASTER’S EXAMINATION**
A written examination in the two areas of study selected by the candidate and in second language education should be taken during the student’s graduation semester.

**Ph.D. in Foreign language and ESL Education**
This program provides students with the necessary content-area knowledge and research skills to prepare them for independent research, program administration, and positions of leadership in a variety of settings in the areas of 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.

**ADMISSION**
Applications for admission are reviewed twice each year, in mid-January for applicants seeking financial support and again in mid-June. Applicants 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. Application materials should include a statement of purpose explaining the applicant’s professional goals, transcripts of all undergraduate and graduate work, Graduate Record Exam scores, a sample of academic writing, and three letters of recommendation. Applicants must have a grade-point average of at least 3.00 in graduate course work. International applicants must score at least 250 on the computer-based TOEFL (or 600 on the paper-based TOEFL).

**REQUIREMENTS**
The Ph.D. in foreign language and ESL education requires a minimum of 80 semester hours, which can include courses taken for the master’s degree. Most course work must be taken at the 200-level or above. At least 30 semester hours must be in the core area of foreign language education, at least 10 semester hours must be in specified courses in research methodology, and 9 semester hours must be in a cognate area to be determined in consultation with the adviser.

**COMPREHENSIVE EXAMS**
To qualify to take comprehensive examinations, students must successfully complete the required course work and either write a review article or carry out extended research activity. The final products of these activities must be presented formally by the student to members of the comprehensive examination committee in anticipation of preparing the article or research activity for publication and presentation at a national conference. After successful completion of the pre-exam activity, the student is eligible to sit for the comprehensive examination, which comprises three 5-hour exams in foreign language education and the cognate area in education. After successfully passing the comprehensive examination, students in consultation with their adviser form 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 adviser.

**Ph.D. in language, literacy, and Culture**
This program prepares students for careers as literacy researchers and as college and university literacy educators. It considers influences of the broader home and community cultures on literate practices and grounds students in appropriate research methodologies. Course work provides a broad background in relevant theoretic and research literature as well as opportunities to conduct original studies that explore the nature of literate practices both in and out of school.

**ADMISSION**
Applications for admission and for financial aid are reviewed by January 15. Applicants should have at least two years of experience teaching language or literacy (reading, writing, English, language arts) and should have earned a master’s degree or have completed a significant amount of graduate course work 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 scores; a sample of academic writing; and three letters of recommendation.

**REQUIREMENTS**
The program requires a minimum of 72 semester hours of approved course work beyond the B.A., including an introductory seminar in language and literacy, at least 9 semester hours of additional doctoral seminars in the program, at least 6 semester hours of course work in research methodology, and at least 12 semester hours of graduate work taken outside the College of Education.

As students near the completion of their course work, they identify several key strands for review and synthesis. With guidance from their advisers, students prepare for written and oral exams in one or two areas. They also submit a substantive issues paper in one or two areas, typically a report of an exploratory study or a review of research literature on a topic of special interest.

Following successful completion of the comprehensive exam and approval of the issues paper, 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.

Detailed information on the Ph.D. in language, literacy, and culture is available on the college’s web site.

**M.A. in Mathematics Education**
The program provides students with advanced specialization in mathematics and education as a better foundation for K-12 teaching.

**ADMISSION**
Candidates must meet the admission requirements of the Graduate College and, except in unusual cases, hold a professional license/certificate to teach school mathematics. A combined score of 1000 on the verbal and quantitative sections of the Graduate Record Examination (GRE) General Test is preferred.

**REQUIREMENTS**
Students take a minimum of 10 semester hours of course work in mathematics approved by the adviser.

They also take a minimum of four courses in mathematics education, which must include 07S:235 (07E:235) Current Issues in Mathematics Education (2-3 semester hours) and three courses chosen from the following.

07S:230 (07E:230) Workshop in School Mathematics 1-3 s.h.
07S:231 (07E:231) Technology in School Mathematics 2-3 s.h.
07S:234 (07E:234) Foundations of Mathematics Education 2-3 s.h.
07S:236 The Teaching of Geometry 2-3 s.h.
07S:239 Teaching of Algebra 2-3 s.h.
07S:335 (07E:335) Seminar: Mathematics Education 2-3 s.h.

Students choose a minimum of two courses from a cognate area in education; suggested areas are educational psychology, educational statistics and measurement, history or philosophy of education, instructional design and technology, counselor education, curriculum, administration, and special education. Courses are to be chosen in consultation with a faculty member from the cognate area.

In addition, students must complete a sufficient number of electives in mathematics and education, chosen with the approval of the adviser, to complete 32 semester hours of credit.

07S:197 Principles of Course Design for Second Language Instruction 3 s.h.
07S:200 Fundamentals of Second Language Assessment 3 s.h.
07S:180 Issues in Foreign Language Education 3 s.h.
07S:184 Reading in a Second Language 3 s.h.
07S:202 Second Language Program Management 3 s.h.
07S:320 Second Language Planning in Education 3 s.h.
07S:207 Reading in Non-Roman Scripts 3 s.h.
07S:208 Designing Materials for Second Language Instruction 3 s.h.
There are three 2-hour comprehensive examinations: one in mathematics education, the second in mathematics, and the third in the cognate area.

**M.S. in Mathematics with Education Option**

This program prepares licensed/certified teachers with advanced specialization in mathematics and mathematics education. It is administered by the Department of Mathematics in the College of Liberal Arts. Application should be made to that department.

**REQUIREMENTS**

A minimum of 24 semester hours in the Department of Mathematics, including the core master’s program for either pure mathematics or applied mathematics as described below:

Pure mathematics core:

22M:115-116 Introduction to Analysis-I, II 6 s.h.
22M:210-211 Analysis I, II 6 s.h.
22M:120-121 Abstract Algebra I, II 6 s.h.
22M:205-206 Introduction to Algebra I, II 6 s.h.
22M:132 General Topology 3 s.h.

Applied mathematics core:

22M:140 Continuous Mathematical Models 3 s.h.
22M:151 Discrete Mathematical Models 3 s.h.
22M:142 Nonlinear Dynamics and Chaos 3 s.h.
22M:144 Introduction to Partial Differential Equations I 2-3 s.h.
22M:170 Numerical Analysis: Nonlinear Equations and Approximation Theory 3 s.h.
22M:171 Numerical Analysis: Differential Equations and Linear Algebra 3 s.h.
22M:174 Optimization Techniques 3 s.h.

Two courses in mathematics education

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 relating to teaching secondary school mathematics.

**Ph.D. in Mathematics Education**

The program for a Ph.D. in mathematics education prepares supervisors, teacher education personnel, community college personnel, and researchers in mathematics education. It is administered by the College of Education.

The 72 semester hours include work taken toward the master’s degree. Credit earned more than 10 years previously must be updated. Minimum course requirements are for exceptional students. Typically, the program consists of 80-90 semester hours.

**ADMISSION**

Applicants must have an undergraduate major in mathematics or the equivalent; a master’s degree in mathematics, mathematics education, or education; a 3.00 grade-point average or above; and, except in unusual circumstances, a current teaching license/certificate and at least two years of teaching experience.

**REQUIREMENTS**

Students must complete a minimum of 36 semester hours of graduate work in the Division of Mathematical Sciences (mathematics, statistics, and computer science), including the requirements for the pure mathematics core, the applied mathematics core, or middle-grades mathematics, as follows. Electives are encouraged in the pure mathematics and applied mathematics sequences.

**Pure Mathematics**

22M:115-116 Introduction to Analysis-I, II 6 s.h.
22M:120-121 Abstract Algebra I, II 6 s.h.
22M:132 General Topology 3 s.h.

**Applied Mathematics**

22M:142 Nonlinear Dynamics and Chaos 3 s.h.
22M:144 Introduction to Partial Differential Equations I 2-3 s.h.
22M:170 Numerical Analysis: Nonlinear Equations and Approximation Theory 3 s.h.
22M:171 Numerical Analysis: Differential Equations and Linear Algebra 3 s.h.
22M:174 Optimization Techniques 3 s.h.

**Middle-Grades Mathematics**

For this option, no course work may replicate undergraduate work; at least five of these courses must be completed; and 22M:106, 22M:126, and 22M:151 are required unless duplicated by previous course work.

22C:106 Computer Science I 3 s.h.
22M:100 Introduction to Ordinary Differential Equations 2-3 s.h.
22M:104 Introduction to Matrix Theory 3 s.h.
22M:106 Transformation Geometry 3 s.h.
22M:107 History of Mathematics 3 s.h.
22M:108 Philosophy of Mathematics 3 s.h.
22M:109 Classical Analysis 3 s.h.
22M:126 Elementary Theory of Numbers 2-3 s.h.
22M:127 Matrix Theory 3 s.h.
22M:151 Discrete Mathematical Models 3 s.h.
22S:120 Probability and Statistics 4 s.h.

Courses jointly listed in education do not fulfill this requirement. Students who have completed their mathematics requirement at another institution must complete a minimum of 6 additional semester hours of course work in mathematics at The University of Iowa, chosen with the approval of the adviser.

Also required are at least five courses in mathematics education, which must include 073:235 Current Issues in Mathematics Education and continuous registrations in 073:335 Seminar: Mathematics Education until the comprehensive examination is passed.

**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 appropriate faculty members in the areas selected to determine which courses they should take in order to adequately prepare for the examinations.

A minimum of two courses in data analysis and research design are required, including both quantitative and qualitative methods. Students must demonstrate competence in computer programming.

Students must complete a total of at least 24 semester hours in College of Education courses; this includes the course work listed above but does not include dissertation credit. An additional 10 semester hours of dissertation credit (07S:493) is required.

At the completion of the program, the student must have a cumulative grade-point average 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.

Students take three written comprehensive examinations, one in mathematics education and two from other fields of education or mathematics; an oral examination follows the written examinations. A partial list of potential cognate areas is available from the M.A. program in mathematics education.

Students also complete 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.

**M.A. in Music Education**

The program 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 program may be taken with thesis (30-semester-hour minimum) or without (33-semester-hour minimum).

The program is administered by the School of Music, in the College of Liberal Arts, in cooperation with the College of Education. Application is made to the School of Music.

**Ph.D. in Music Education**

The program prepares students for teaching, research, or administrative posts. Graduates accept positions at colleges, as 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, directors of city or district school music programs.

The program is administered by the School of Music, in the College of Liberal Arts, in
cooperation with the College of Education. Application is made to the School of Music.

M.A.T. in Science Education

The M.A.T. is designed primarily for those who have already completed a B.S. or B.A. in an area of science and who decide that they would like to become teachers. It features advanced work in science along with the courses required for certification, offering students the opportunity to attain 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 semester hours—as undergraduates, but no previous course work in education. Students' science course work should be equivalent to that required by the science education program in the UI College of Liberal Arts. An applicant with a strong major from another institution may be licensed only in that particular science discipline, as opposed to the two or three areas provided by science education major programs at Iowa.

ADMISSION

Applicants must have a bachelor's degree with a major or its equivalent in one of the sciences. A grade-point average of at least 3.00 is required for admission and must be maintained throughout enrollment in the program.

REQUIREMENTS

Professional Education Sequence

Foundation
07E:180 Human Relations for the Classroom Teacher 3 s.h.
07P:200 Educational Psychology 3 s.h.
07S:100 Foundations of Education 3 s.h.
07U:100 Mainstreaming the Exceptional Learner 3 s.h.
07W:111 Technology in the Classroom 2 s.h.

Science education courses are taken in the following sequence.
07S:151 Science Teaching and Practice with Early Learners 3 s.h.
07S:152 Methods of Teaching Science 3 s.h.
07S:153 Instructional Issues in Teaching Science 3 s.h.
07S:179 Secondary School Science Practicum 2 s.h.

These two taken concurrently:
07S:187 Seminar: Curriculum and Student Teaching 3 s.h.
07S:191 Observation and Laboratory Practice in the Secondary School 6 s.h.
07S:192 Observation and Laboratory Practice in the Secondary School 6 s.h.

Science Specialization

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.

Both of these:
097:128 Meaning of Science 2 s.h.
097:130 Science in Historical Perspective 2 s.h.

Two of these (unless completed during undergraduate study):
097:102 Societal and Educational Applications of Earth Sciences and Environmental Sciences 2 s.h.
097:103 Societal and Educational Applications of Biological Sciences 2 s.h.
097:105 Societal and Educational Applications of Physical Sciences 2 s.h.
097:106 Societal and Educational Applications of Chemical Concepts 2 s.h.
097:140 Problems in Integrating the Teaching of Environmental Science 3 s.h.

Students also may take these courses for 3 semester hours.

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 50 semester hours.

COMPREHENSIVE EXAMINATION

A final examination, at the discretion of the examining committee, consists of two parts-written and oral. The science and science education comprehensive examinations do not duplicate course examinations but assess both science education and the science specialization area chosen by the candidate.

M.S. in Science Education

This degree is designed for students who want to pursue advanced science education specialization in teaching (kindergarten through college) or in related fields such as medical education, museum programs, and textbook editing. Although a nonthesis option is available, the thesis program is the recommended option.

ADMISSION

Candidates must have a 2.50 undergraduate grade-point average and usually must have an undergraduate degree in one of the sciences or in science education. Applicants must have teaching licensure/certification unless they are preparing for careers in allied health, museums, or community colleges.

REQUIREMENTS

A total of 38 semester hours of course work with thesis or 34 semester hours without thesis, distributed as follows.

Science Education

07E:255 (07S:255) Science Education: Issues, History, and Rationale 3 s.h.
07E:256 (07S:256) Science Education: The Nature of Science 3 s.h.
07E:257 (07S:257) Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
07E:258 (07S:258) Science Education Research Models and Conceptual Schemes 3 s.h.
07E:350 (07S:350) Seminar: Science Education (registration required each semester in residence) 0-2 s.h.

Science Specialization

Total of 19 semester hours in science and applied science courses (100-level or above) chosen in consultation with the adviser.

Corigorative Studies (Nonthesis Only)

Science and applied science courses selected from an area other than the specialization 6 s.h. or
073:393 Master's Degree Thesis 6 s.h.

COMPREHENSIVE EXAMINATION

Students take a comprehensive examination that consists of two parts: one dealing with science education, the other with the science specialization area.

Ph.D. in Science Education

This degree is appropriate for qualified candidates who aspire to college and university positions as science educators; major supervisory posts in national, state, and local systems; teaching positions in the sciences at small liberal arts colleges; positions as instructors of general education science courses and areas at major colleges; positions as research directors in science education; and positions in medical education.

ADMISSION

Candidates must meet the minimum admission standards of the Graduate College. Applicants usually must have completed a master’s degree in one of the sciences or science education and have earned a 3.00 grade-point average on all graduate work taken before making the application. All students must have completed an M.S. thesis or similar research suitable for publication.

REQUIREMENTS

Students must complete at least 102 semester hours of course work, which must include the courses listed below (37 semester hours); courses taken toward a master’s degree count toward the 102-semester hour total.

07E:255 (07S:255) Science Education: Issues, History, and Rationale 3 s.h.
07E:256 (07S:256) Science Education: The Nature of Science 3 s.h.
07E:257 (07S:257) Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
07E:258 (07S:258) Science Education Research Models and Conceptual Schemes 3 s.h.
07E:350 (07S:350) Seminar: Science Education (registration required each semester in residence) 0-2 s.h.
07E:493 (07S:493) Ph.D. Dissertation 10 s.h.
07S:355 Action Research in Science Education (repeated registrations of 3 s.h. each) 9 s.h.
073:368 Ph.D. Seminar: Current Research in Science Education (two or more registrations required after completing 07E/07S:255-258) 4 s.h.
Candidates must complete 27 semester hours of credit in one of the following as the major area of study: biological science, physical science, earth science, or environmental studies.

They also complete 8 semester hours in an integrated group of supporting courses chosen from a limited number of areas, such as curriculum, applied science, educational measurement, and history/philosophy of science, in consultation with the adviser.

Candidates must demonstrate competency in two of the following research tool areas: statistics, computer programming and/or data processing, research design (completion of a pilot study). Competency is certified by the adviser.

Candidates for the degree usually are expected to participate in the teaching and research function of the science education program throughout their residence.

All students are expected to spend a full year in residency actively involved with course work and at least one internship.

Candidates complete a minimum of 10 semester hours of dissertation credit (07E/07S:493).

The comprehensive examination consists of three parts: one dealing with science education, another with an area of science, and a third with the correlative studies area.

**M.A. in Social Studies Education**

The program provides an opportunity for interdisciplinary work in education, history, social science, or related areas for classroom teachers, high school department chairs, and supervisors, as well as others interested in acquiring greater competence in history and the social sciences and greater proficiency in teaching and supervision.

Students may choose from two programs in social studies education. Program A provides an opportunity for interdisciplinary work in education, history, social science, or related areas for classroom teachers or others interested in acquiring greater competence in the subject matter area. Program B is for individuals who have their bachelor's degree in history or social sciences and wish to obtain a teaching license/certificate in the process of completing the master's degree.

**ADMISSION**

Applicants must have a bachelor's degree in education, history, or one of the social sciences from an accredited institution; a 3.00 cumulative grade-point average; a 3.00 grade-point average in history and/or social science courses; preferred composite Graduate Record Examination (GRE) General Test score of 1000 on the verbal and quantitative tests; and two letters of recommendation. Evidence of writing ability in the form of 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, the M.A. candidate must maintain at least a 3.00 grade-point average.

**PROGRAM A REQUIREMENTS**

Program A students must complete a minimum of 38 semester hours distributed among history and social sciences, or related areas, and education, with a minimum of 10 semester hours in each of three fields.

Nine of the total 38 semester hours must consist of graduate courses numbered 200 or above distributed among the three fields selected for concentration.

If the thesis option is selected, the student completes a research or investigative problem in history or social sciences, or in related areas, in which case the thesis director is a member of the appropriate department; or an investigative problem in social studies education, in which case the thesis director is a faculty member in the College of Education.

A two-hour written examination is required in each of the three fields selected for concentration.

**PROGRAM B REQUIREMENTS**

Program B students must complete a total of 38-55 semester hours. All of the following courses must be completed, but students may elect to take some of the course work in the process of completing the bachelor's degree. In such cases, the number of hours is reduced accordingly, but in no case is the number of hours in the master's degree program to be less than 38. In all instances, the student must take appropriate work for meeting all Iowa Department of Education requirements for teacher licensure/certification.

Professional education courses:

- 07E:180 Human Relations for the Classroom Teacher 3 s.h.
- 07P:200 Educational Psychology 3 s.h.
- 07S:100 Foundations of Education 3 s.h.
- 07S:170 Methods: Social Studies 3 s.h.
- 07S:187 Seminar: Curriculum and Student Teaching 3 s.h.
- 07S:190 Individual Projects in Laboratory Practice 3 s.h.
- 07S:191 Observation and Laboratory Practice in the Secondary School 6 s.h.
- 07S:192 Observation and Laboratory Practice in the Secondary School 6 s.h.
- 07S:196 Topics in Curriculum and Instruction (Social Studies) 3 s.h.
- 07S:233 History and Foundations of Social Studies Education 3 s.h.
- 07S:277 Seminar: Social Studies Education 3 s.h.
- 07U:100 Mainstreaming the Exceptional Learner 3 s.h.
- 07W:111 Technology in the Classroom 2 s.h.

Subject area specialization courses: A minimum of 9 semester hours of course work in history or a social science is required. At least one course should be taken with the instructor who will serve on the examining committee.

Note: The state of Iowa requires that students certified in social studies must have a teaching major of 30 semester hours and one endorsement area of 15 semester hours. Endorsement areas include anthropology, economics, geography, psychology, sociology, American history, and world history.

**COMPREHENSIVE EXAMINATION**

The comprehensive examination consists of three parts: a two-hour examination in the subject area specialization, a two-hour examination in general professional education, and a two-hour examination in social studies education.

**Ph.D. in Social Studies Education**

This program is administered by the College of Education. It prepares secondary department chairs, supervisors, curriculum directors, teacher education personnel, and college instructors in the social sciences and in social studies education.

**ADMISSION**

Applicants must have a bachelor's degree in history, the social sciences, or education, and a master's degree in history, the social sciences, or education. At least two years teaching experience is strongly preferred. Applicants must satisfy the requirements for admission to a doctoral program in the Graduate College and have a grade-point average of at least 3.00. A minimum Graduate Record Examination (GRE) General Test score of 1200 (composite of verbal and quantitative) is preferred. Applicants who did not write a thesis as part of their M.A. must submit seminar papers or field research as equivalents.

**REQUIREMENTS**

Students must complete a minimum of 90 semester hours of course work and dissertation credit beyond the bachelor's degree, not including tool requirements. The 90 semester hours must be distributed among history, social sciences or related areas, and professional education, depending on the background and goals of the candidate. A minimum of 18 semester hours of course work must be completed in one area of history or one of the social sciences.

Seminars and courses numbered 200 or above are required in each of the areas of study constituting the major. Students must take 9 semester hours of required courses in social studies education which includes 07E:233 (07S:233) History and Foundations of Social Studies Education (3 semester hours) and 6 semester hours of 07E:196 (07S:196) Topics in Curriculum and Instruction (social studies emphasis) and/or 07E:277 (07S:277) Seminar: Social Studies Education.

Tool requirements are tailored to the individual's program and may consist of foreign languages or other requirements. Usually, statistics plus research techniques in one or more of the chosen fields or in a language is required.

**COMPREHENSIVE EXAMINATIONS**

Students take three 3-hour examinations, one in each of the areas of study. Depending on the distribution of work taken, the nine hours of written examinations may be rearranged. The Ph.D. examining committee consists of at least one faculty member from the liberal arts disciplines and one from social studies education. The remaining members (the
Graduate College requires a minimum of five committee members) are selected with regard to the nature of the student’s Ph.D. program and distribution of course work. An oral examination is conducted by the committee as a whole following the written examination.

**DISSERTATION**
A dissertation is required on a research problem in history or the social sciences, or in related areas, in which case the dissertation director will be a faculty member of the appropriate department, or on a research problem in social studies education, in which case the dissertation director will be a faculty member of the College of Education. The candidate must present a prospectus of the proposed research to the dissertation committee prior to undertaking the study. Upon completion, an oral examination is conducted in defense of the dissertation.

**Special Education**
The division offers a special education program with areas of emphasis in elementary (K-6) and secondary (7-12) behavioral disorders, learning disabilities, mild mental disabilities, multicautistical special class with integration, and multicaudical resource; and K-12 moderate/severe/profound mental disabilities. 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.

Programs leading to special education licensure/certification are not available to undergraduates. Undergraduates who wish to pursue a career in special education are encouraged to contact the Division of Curriculum and Instruction for advisement.

**Admission**
Admission requirements include:
- a completed graduate application form;
- copies of official transcripts for all previous college course work;
- an official report of the Graduate Record Examination (GRE) General Test (verbal and quantitative);
- three current letters of recommendation; and evidence of experience and/or teacher licensure/certification (varies depending on program).

Students whose native language is not English must have a TOEFL score of 600 (on the paper-based test).

An interview may be requested. In addition to the above, the following represent minimum requirements.

**Master of Arts:**
An undergraduate grade-point average of at least 3.00 (and/or 3.00 on at least 12 semester hours of graduate course work) and a combined verbal and quantitative GRE score of 1000 are preferred.

**Doctor of Philosophy:**
An undergraduate grade-point average of at least 3.00 or a graduate grade-point average of at least 3.50 if a graduate degree has been conferred, and a combined verbal and quantitative GRE score of 1000 are preferred. For students without an M.A. thesis, an equivalent project must be completed.

Final admission decisions are made by the special education graduate admissions committee and are based on a composite analysis of the candidate’s likelihood for success in the program. This analysis may include consideration of available resources, comparative standing, and specific program requirements.

Applications must be complete to be reviewed. It is the candidate’s responsibility to provide a completed admissions dossier. Students may be admitted for any session.

**M.A. in Special Education**
The M.A. program requires a minimum of 32 semester hours. Specific program requirements are available in the Division of Curriculum and Instruction office. The primary purpose of the M.A. degree program in special education is to prepare persons 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 for the purpose of obtaining an additional area of special education licensure/certification (i.e., professional improvement). Students admitted to the M.A. program typically receive licensure/certification in at least one area upon completing the program.

**Ed.S. in Special Education Administration**
The Ed.S. in special education administration is offered jointly-with the Division of Planning, Policy, and Leadership Studies. See “Planning, Policy, and Leadership Studies” in this section of the Catalog.

**Special Education Consultant**
The purpose of this program is to prepare consultants to serve in special education programs.

**ADMISSION**
Admission to a certification or M.A. degree program in special education is required.

Applicants must hold or meet the requirements for the special education teaching endorsement congruent with the desired consultant authorization. For example, applicants must hold or meet the requirements for a mental disabilities endorsement in order to be recommended for the special education consultant endorsement with authorization in mental disabilities. Teaching endorsements must be documented by copies of teaching credentials.

Applicants also must have completed four years of successful teaching experience, two of which must be congruent with the desired consultant authorization. Applicants must provide evidence of successful teaching (e.g., written statements from school personnel documenting years of teaching, type of students served, and success as a classroom teacher).

Documentation of certifications and teaching experience should be submitted with the application for admission to the Graduate College.

**Requirements**
- **Option 1:** Persons without an M.A. in special education must complete an M.A. degree and teaching endorsement program in special education congruent with the consultant desired authorization, plus the three courses listed under “Option 2,” for a total of at least 38 semester hours.
- **Option 2:** Persons with an M.A. in special education and an endorsement congruent with the desired authorization must complete the following three courses.
  - 07E:300 Design and Organization of Curriculum 3 s.h.
  - 07P:263 Consultation Theory and Practice 3 s.h.
  - 07P:347 Home/School/Community System Interventions or 07U:260 Special Education Consultation (offered infrequently) 3 s.h.

**Doctor of Philosophy**
The Ph.D. program in special education prepares students for positions in higher education research and teaching, and for curriculum, supervisory, and research positions in state and local education agencies. The program permits students to study and practice extensively in their area of interest in special education and an area of interest outside of special education.

Admission requirements for the Ph.D. program include a master’s degree or equivalent in special education and at least one year of full-time teaching experience with exceptional children. The admissions committee gives preference to applicants who have had several years of experience.

The program requires a minimum of 90 semester hours beyond the bachelor’s degree. The plan of study is flexible, stresses interdisciplinary work, and varies depending on the student’s background and educational goals. In general, students are expected to possess a general background in all facets of special education and one or two areas of specialization. The actual course of study is developed by the student and the academic adviser. Requirements include 16 semester hours of core special education courses, a 3-semester-hour college teaching or field service practicum, and a minimum of 16 semester hours of statistics and measurement tool courses.

Students also are required to write comprehensive examinations and complete a doctoral dissertation (07U:493 Ph.D. Thesis in Special Education, 10 semester hours minimum).
Facilities
Special facilities available to students in special education include the University Hospital School, for mentally and physically disabled, and the University Psychiatric Hospital/Child Psychiatry Program, for children and youth with behavioral disorders.

Financial Support

Early Childhood and Elementary Education

A number of teaching assistantships are available for graduate students pursuing advanced programs in early childhood and elementary education. Specific assignments vary. Some involve supervising undergraduate majors enrolled in practicums, and some involve teaching sections of undergraduate methods courses and supervising student teachers. Most assistantships are classified as one-half-time. This classification permits students to register for a maximum of 12 semester hours of credit per semester. Graduate students with assistantships must register for a minimum of 6 semester hours per semester.

All assistantships are awarded on a competitive basis. To be considered for an assistantship, applicants must have been admitted to regular status in the Graduate College and accepted in an advanced program by the College of Education. Inquiries concerning assistantships should be directed to the division chair.

Secondary and Special Education

A limited number of assistantships are available for graduate students pursuing advanced degrees. Holders of such assistantships may register for no more than 12 semester hours and, except with special permission, no less than 6 semester hours per semester. Assignments vary. Some involve teaching undergraduate courses or supervising practicum experiences, and others are made up primarily of research activities.

Secondary education graduate students also may be eligible for assistantships in some College of Liberal Arts departments. A candidate with appropriate credentials should apply directly to the specific department to consult the College of Education adviser directing the program in the appropriate field. Traineeships in selected licensure/certification and master’s degree programs are available to full-time special education students.

Courses

Early Childhood and Elementary Education

07E:090 Orientation to Elementary Education 0 s.h. Overview of elementary education, including options for student teaching; classroom observation, lesson planning, classroom management, information about mandatory child abuse reporting, blood-borne pathogens, professional ethics. Eight weeks.

07E:091 Pre-Practice Education, Elementary Education 1 s.h. Five-week course: first week-observation techniques, daily planning, classroom management; remaining weeks-experience observing and assisting in the elementary classroom. Admission to elementary TEP required. Corequisites: 07E:100 and 07W:111.

07E:100 Foundations of Education 3 s.h. Overview of America’s education, preschool through secondary; aims, history, philosophy of education; professional ethics, legal responsibilities; school curriculum, organization, finance, school law, political and social issues. Admission to TEP required. Same as 07S:100.

07E:101 Introduction to Education 3 s.h. Orientation to the field; aptitude, motivation, organization, instructional procedures, professional ethics, legal responsibilities, contemporary problems at both elementary and secondary levels. Same as 07E:091.

07E:104 Remedial Methods in Speech and Hearing 2 s.h. Emphasis on elementary grades. Usually taken in conjunction with 07E:192, which provides approximately 20 hours of supervised clinical practice in elementary schools. Primarily for speech pathology and audiology majors. Consent of instructor required.

07E:106 Foreign Language Education Practice I 3 s.h. Skill development in the early grades; curriculum design, test creation, microteaching with inservice teachers. Prerequisites: 07E:110 or 07S:110. Corequisites: 07S:116. Same as 07S:106.

07E:107 Foreign Language Education Practice II 3 s.h. Practice in lesson design, classroom management techniques, evaluation skills during work with inservice foreign language teachers. Corequisites: 07S:117. Same as 07S:107.

07E:108 Oral Interpretation of Literature 3 s.h. Principles, practice of reading literary prose and poetry to audiences; analysis, interpretation, performance, evaluation. Same as 03E:108.

07E:110 Teaching K-12 Second Language Learners 3 s.h. Second language learning and teaching in the multicultural classroom; influence of school setting, societal context. Admission to TEP required. Same as 07S:110.

07E:114 Parent Child Relationships 3 s.h. Roles and relationships within and between families, culture, social; identify (family) resources and concerns based on children’s development, abilities.

07E:118 ESL Practicum I 3 s.h. Skill development for teaching English as a second language; curriculum design, test creation, microteaching with inservice teachers. Prerequisites: 07E:110 or 07S:110. Corequisites: 07S:116. Same as 07S:118.

07E:119 ESL Practicum II 3 s.h. Practice in lesson design, classroom management techniques, evaluation skills during work with in-service English as a second language teachers. Prerequisites: 07E:110 or 07S:110. Corequisites: 07S:117. Same as 07S:119.

07E:120 Methods and Materials: Music for the Classroom Teacher 3 s.h. Development of music skills; techniques, knowledge of methods and materials for teaching music to young children; for elementary education majors. Admission to TEP required.

07E:122 Methods and Materials: Art for the Classroom Teacher 2 s.h. Projects, techniques, processes in art for elementary and early childhood education majors; combination lecture and studio; painting, drawing, printmaking, sculpture, and crafts with materials and tools commonly available in the elementary schools. Same as 01E:195.


07E:124 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. Same as 07E:124.

07E:125 Differentiated Curriculum 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. Same as 07S:125.

07E:127 Physical Education and Health for Elementary Teachers 2 s.h. Methods, curriculum. Admission to TEP required.

07E:132 Middle School Curriculum and Methods 3 s.h. Junior high and middle school development; characteristics of exemplary programs, disciplinary and interdisciplinary trends; variety of teaching methods (group and individual); hands-on activities. Admission to TEP required. Same as 07E:132.

07E:134 Parent-Teacher Communication 1-3 s.h. Realities of working with parents; interpersonal skills; options for parent support services. Same as 07P:134, 07U:134.


07E:143 Methods: Art 3 s.h. Application of studio methods to teaching children in Saturday Children’s Art Class Program. Prerequisite: 01E:196.

07E:145 Methods and Materials: Elementary School General Music 3 s.h. Area of specialization in music for choral music education students and elementary education majors. Offered spring semesters.

07E:151 Elementary Practicum in Science Education 2 s.h. Supervised observation, inquiry, and teaching in elementary science.

07E:154 The Politics of Literacy 3 s.h. Books and articles on the social dynamics of literacy instruction and literacy learning that may be coordinated with a service learning component in a school or community setting. Same as 07S:154, 008:173, 010:142.

07E:156 Methods A Practicum 1 s.h. Observation of, participation in, reflection about language and literacy instruction at K-6 level.

07E:157 Methods: Early Childhood Education 3 s.h. Current educational literature emphasizing developmentally appropriate methodology across all curricular areas and including health, safety, nutritional needs, play, creativity.

07E:158 Guidance of Young Children 3 s.h. Preventing problems in child care programs; behavior management; encouraging social/moral development; recognizing signs of emotional distress, neglect; understanding mandatory reporting procedures; 24-hour practicum in two child care centers.

07E:160 Methods: Elementary School Language Arts 3 s.h. Planning processes and development of teaching units; approaches to personal self-expression through oral, written, visual modes (creative dramatics, writing, film, etc.), and to language development, concepts concerning language, and skills of oral and written communication. Admission to elementary TEP required. Corequisites: 07E:123 and 07E:164.


07E:162 Methods: Elementary School Science 2-3 s.h. Principles and concepts of science instruction in elementary school for preservice instruction of elementary education majors; emphasis on techniques that characterize new approaches to science. Admission to elementary TEP required. Corequisites: 07E:161 and 07E:163.


07E:166 Methods B Practicum 1 s.h.
Practicum at the K-6 level involving mathematics, science, social
service, content areas; scheduled in related methods
courses.

07E:167 Observation and Assessment of Young
Children 3 s.h.
Observation and application of developmentally appropriate
assessments for children to age eight, including special needs
and at-risk populations; play and creativity; practical
experience in diverse settings with varying age levels
(infant/toddler, preprimary, primary). Twelve-hour practicum
required.

07E:169 History and Philosophy of Early
Childhood Education 3 s.h.
Ideas about development, learning, education of young children
including children with special needs, from past to future;
current legislation affecting children, current ethical codes

07E:170 Classroom Management 1-3 s.h.
Activities, techniques, strategies, theories related to effective
classroom management. May be repeated.

07E:171 Reading and Writing: Processes and
Instruction 3 s.h.
Factors contributing to individuals' ease or difficulty in learning
to read/write; focus on issues in classroom literacy
instruction; overview.

07E:172 Reading Instruction: Teaching Practicum 3-4 s.h.
Experience in conducting reading instruction for children; four
schoolroom sessions and one-on-campus meeting weekly.
Prerequisite: 07E:164

07E:173 Teaching Elementary School
Mathematics 2-3 s.h.
Elementary school mathematics curriculum; emphasis on
accommodating children's varied ability levels, diagnosing pupil
errors, testing, developing instructional sequences, remediation
and enrichment, selected research results.

07E:174 Elementary Education: Practicum
Mid-level practicum in an elementary classroom.

07E:175 Linguistic Diversity in the Classroom 3 s.h.
Topics related to linguistic diversity in the classroom grades
1-12; optimal teaching techniques for positive academic
outcomes of linguistically diverse students. Same as OTS:175.

07E:176 Teaching Elementary School
Science 3 s.h.
Special topics, activities in student-centered teaching/learning
environments; standards, integrated curriculum, alternative
assessments, classroom management, problem solving, action
research.

07E:177 Workshop: Curriculum Evaluation and
Selection 1-3 s.h.
For a specific curriculum area, choosing or developing criteria for
evaluating, reviewing, selecting organizational materials and
activities to suit specific curriculum patterns. May be repeated for
different areas (see current Schedule of Courses for specific
areas offered).

07E:178 Workshop: Curriculum Development and
Implementation 1-4 s.h.
For a specific curriculum area; determining curricular needs and
applying educational principles and research to developing
materials and activities that suit specific curriculum patterns. May be repeated for
different areas (see current Schedule of Courses for specific
areas offered).

07E:179 Workshop: Teaching Methodology
1-3 s.h.
For a specific curriculum area: review of teaching methods,
theory, related research, planning, developing lessons;
demonstration and application of techniques.

07E:180 Literacy in Social Contexts
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.

07E:181 Piaget in the Classroom
2-4 s.h.
Development of logical thought in the concrete- and
formal-operational stages; emphasis on learning numerous
Piaget type tasks, presenting these tasks to children, deriving
classroom implications from the data; primarily for experienced
teachers.

07E:182 Language and Learning
2-3 s.h.
How language growth reflects and enables cognitive
development; readings in psychology, anthropology, education;
relationship of language theory to language instruction in
schools. Same as OTS:182, 08P:182.

07E:183 Second Language Classroom Learning
3 s.h.
Synthesis of empirical findings on children's and adult's learning
of a second or foreign language; emphasis on theoretical
underpinnings of many approaches, methods, techniques in
language teaching. Same as OTS:183, 039:177.

07E:186 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 OTS:186.

07E:188 Practicum in Teaching and Curriculum
Development in Gifted Education 1.6 s.h.
Experience in developing course materials for classes offered
through the Belin Center. Same as OTS:188. OTS:188

07E:189 Development and Administration of
Child Care Centers 3 s.h.
Topics in starting and managing a child care center: licensing,
budgeting, health and safety, food and nutrition, parent
involvement, supervising staff, maintaining quality, legislation
and public policy affecting children with or without disabilities,
and parents; 12-hour practicum

07E:190 Supervised Teaching in the Elementary
School: Interactive Phase 3 s.h.
Student teaching at the elementary level (K-9). Application to
the College of Education Office of Student Personnel required.
Corequisite: 07E:191.

07E:191 Supervised Teaching in the Elementary
School: Pre- and Post-Active Phase 3 s.h.
Application to the College of Education Office of Student

07E:192 Special Area Student Teaching 3 s.h.
Supervised teaching and observation in specific areas of
elementary school curriculum (see current Schedule of Courses for
specific areas offered). Consent of instructor required.

07E:193 Independent Study 1-4 s.h.
Senior standing and consent of instructor required.

07E:196 Topics in Curriculum and Instruction
arr.
May be repeated. Consent of instructor required. Same as
OTS:196, 07U:196.

07E:197 Supervised Teaching Early Childhood
Center: Interactive Phase 3 s.h.
Student teaching in prekindergarten early childhood centers.
Application to the College of Education Office of Student

07E:198 Supervised Teaching Pre-
and Post-Active Phase 3 s.h.
Application to the College of Education Office of Student

07E:204 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 OTS:204, 08P:204.

07E:205 Foundations of Education
3 s.h.
Overview of American education, preschool through secondary;
aims, history, philosophy; professional ethics, legal
responsibilities; school curriculum, organization, finance, school
law, political and social issues. Admission to TEP required. Same as
OTS:205.

07E:206 Curriculum Development in Music
Education 2 s.h.
Curriculum development, instructional materials, analyses of
current teaching methods and techniques in school music
programs. Same as OTS:206.

07E:230 Workshop in School Mathematics
1-3 s.h.
One- to three-week examination of and experience with recent
developments in school mathematics teaching methods and
curriculum. Same as OTS:230.

07E:231 Technology in School Mathematics
2-3 s.h.
Methods, materials, issues, pedagogy, assessment; use and
evaluation of mathematics software; other technology;
implications for organization, development of course content.
Same as OTS:231.

07E:233 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. Same as OTS:233.

07E:234 Foundations of Mathematics Education
2-3 s.h.
History of U.S. mathematics education; learning theory applied to
teaching, learning mathematics; curriculum and achievement patterns in different
countries; sex differences in achievement; research literature. Same as
OTS:234.

07E:235 Current Issues in Mathematics
Education 2-3 s.h.
Recent curriculum developments, experimental programs,
research relevant to classroom teaching; education trends that
may have a significant impact on mathematics programs. Same as

07E:250 Program and Research Problems in
Science Education 2-3 s.h.
Prerequisite: 07E:247. Corequisite: 07E:248. Group research
problem identification; group involvement in preparing solutions; potential external funding sources. Same as
OTS:250.

07E:255 Science Education: Issues, History, and
Rationale 2-3 s.h.
Current analysis of research reports, philosophical statements,
synthesis studies, issue statements that characterize graduate
study in science education. Offered fall semesters Same as
OTS:255.

07E:256 Science Education: The Nature of
Science 3 s.h.
Topics in philosophy, psychology, history, sociology of science
that are related to research, practice, current issues in science
education. Offered spring semesters. Prerequisite: 097: 128.
Same as OTS:256.

07E:257 Science Education: Teaching, Learning,
and Curriculum Models 2-3 s.h.
Teaching strategies, instructional models, curriculum theory as
they relate to science teaching in elementary, secondary, college
settings. Offered fall semesters. Same as OTS:257.

07E:258 Science Education: Research Models
and Conceptual Schemata 2-3 s.h.
Models of research design and major research efforts in science
education; emphasis on current reports and yearly reviews of
science education research. Offered spring semesters. Same as
OTS:258.

07E:260 Supervision of Elementary School
Language Arts 3 s.h.
Curricular models, curriculum development, methodology,
materials for elementary language arts; focus on the interactive
processes of composition and comprehension through oral,
written, visual modes in personal exploration, skill, concept
development experiences.

07E:264 Early Literacy Development and
Instruction 3 s.h.
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.

07E:265 Reading and Writing Across
Intermediate Grades 3 s.h.
Reading with comprehension, provision for individual
differences, research in reading, extension of skills taught in
primary grades; for teachers, principals, supervisors.

07E:267 Inquiry-Based Curriculum Development
in Early Childhood and Elementary
Classrooms 3 s.h.
Theoretical and practical organization of developmentally
appropriate curricula and teaching methods to promote learning

07E:268 Curriculum Development for Young
Children 3 s.h.
Current and crucial issues in curriculum development, research,
delivery of services to children in group child care settings.
Prerequisite: 07E:157 or equivalent.

07E:271 Advanced Reading Clinic Techniques
2-3 s.h.
Special instructional procedures for children with severe learning
problems in reading; causes of reading disorders; educational
prognosis for severely disabled readers. Prerequisite: 07E:164 or

07E:272 Advanced Reading Clinic Practice
2-3 s.h.
Practice in selecting and using special instructional procedures;
fitting clinical teaching techniques into a balanced
developmental reading framework. Prerequisite: 07E:164 or

07E:273 Reading Recovery 1 2-3 s.h.

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07E:274 Reading Recovery II 2-3 s.h.
Training for teachers; tutoring of first-grade children; effective moment-by-moment instructional decision making.

07E:275 Reading Recovery Assessment Training 2-3 s.h.
How to administer and analyze Marie Clay’s Observation Survey: includes administration of the assessment to at least two first-grade children.

07E:277 Seminar: Social Studies Education arr.
Periodical literature, trends, curricular developments, research. For master’s and doctoral candidates in social studies education. Same as 07S:277.

07E:280 Supervision of Instruction and Staff Development 1-3 s.h.
Teach other effectiveness research; formative and summative evaluation procedures, with an emphasis on the supervision of student teachers; research on staff development and bringing about change in education. Same as 07S:285.

07E:281 Reading and Writing Process 3 s.h.
Foundations of the reading and writing process, including underlying language competencies, implications for instruction. Consent of instructor required.

07E:282 Reading Recovery Teacher Leader I 3 s.h.
Introduction to reading recovery teacher leader role; theory, practice, leadership, organization, planning, Supervision, evaluation. Consent of instructor required.

07E:283 Reading Recovery Practicum I/Teacher Leader 3 s.h.
Reading recovery procedures, practices; effective teaching decisions. Consent of instructor required.

07E:293 Individual Instruction in Early Childhood and Elementary Education arr.
Consent of instructor required.

07E:300 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.

07E:304 Seminar: Current Issues and Research in Elementary Education 4 s.h.
Major problems, research findings, current developments in elementary school instructional programs. Consent of instructor required.

07E:306 Introduction to Research in Art Education 3 s.h.
Methods of inquiry used for research in art education and related disciplines; methods of research design.

07E:308 Seminar: Research and Current Issues 3 s.h.
For a specific curricular area: review of the literature, critical analysis of reported research, study of current issues and problems (see current syllabus). Courses for specific areas of emphasis may be repeated. Consent of instructor required. Same as 07S:308.

07E:335 Seminar Mathematics Education arr.
Current research, research methodology, curriculum developments in mathematics education. May be repeated Same as 07S:335.

07E:340 Advanced Topics in Curriculum and Instruction arr.
Topics vary. Same as 07S:340, 07U:340.

07E:350 Seminar: Science Education 1-2 s.h.
National issues, program features, completed faculty and doctoral candidates’ research. Same as 07S:350.

07E:355 Action Research in Science Education 2-1 s.h.
For a specific area: analysis of the literature, critical analysis of reported research, study of current issues and problems (see current syllabus). Courses for specific areas of emphasis may be repeated. Consent of instructor required. Same as 07S:355.

07E:365 Reading Clinic: Supervision arr.
Supervised experience in guiding and improving teacher performance in clinical practices. Consent of instructor required.

07E:366 Administering and Supervising K-12 Science Programs 1-3 s.h.
Theory and practice in coordinating K-12 science programs; science supervisors at state, regional, local levels are involved; two practicum projects required. Offered spring semesters and summer sessions. Same as 07S:254.

07E:370 Methods in Literacy Research 3 s.h.
Conceptual and practical exploration of selected research methods, including pilot data collection, analysis, and reporting. May be repeated. same as 07S:370, 08P:300.

07E:381 Reading Difficulties 3 s.h.
Understanding of seminal and recent research, theories of learning; experiences in teaching reading recovery; reading difficulties that have influenced literary education. Consent of instructor required.

07E:382 Reading Recovery Teacher Leader I 3 s.h.
Advanced theory, practice in reading recovery teacher leader role. Consent of instructor required.

07E:383 Reading Recovery Practicum II/Teacher Leader 3 s.h.
Reading recovery procedures, educational prognosis, analysis of teacher-student interactions. Consent of instructor required.

07E:384 Laboratory Practice in Supervision arr.
Individually planned practicum experiences in a variety of supervisory roles. Consent of instructor required.

07E:385 Practicum in College Teaching Consent of instructor required.

07E:390 Research and Issues Program Implementation 3 s.h.
Research and issues in change process, theories and case studies related to reading recovery program implementation. Consent of instructor required.

07E:391 Research Project ar.
Individual research projects in a specific curricular area; for advanced students. May be repeated. Consent of instructor required.

07E:392 Field Service Project arr.
Individual field service project in a specific curricular area; for advanced students. May be repeated. Consent of instructor required.

07E:393 M.A. Thesis in Early Childhood and Elementary Education arr.
Consent of instructor required.

07E:395 Education Special Research in Early Childhood and Elementary Education arr.
Research involving field and educational data-analysis, writing of results. Consent of instructor required.

07E:405 Seminar: Child Art and Art Education 1-3 s.h.
Analysis and evaluation of current concepts of child art and development, perception, creativity, art education; historical development of theories of child art development, and art education. Same as 07S:405.

07E:406 Research in Art Education arr.
Individual research under supervision; applicable to thesis preparation and to doctoral dissertation development. May be repeated. Same as 01E-406, 07S:406.

07E:407 Research: Science Education arr.
07E:415 Ph.D. Seminar in Language, Literacy, and Culture arr.
Historical and recent research and theory in literacy education. May be repeated. Consent of instructor required. Same as 07S:415, 08P:415.

Consent of instructor required.

Secondary Education

07S:020 Academic Seminar I 3 s.h.
IowaLink seminar. Open only to first-year students. Same as 08P:020.

07S:021 Academic Seminar II 3 s.h.
IowaLink seminar. Open only to first-year students Same as 08P:021.

07S:090 Introduction and Practicum: Art 2 s.h.
Experience observing and assisting art teachers and students in elementary or secondary schools; four to six hours per week in the school plus on-campus class meetings. Admission to TEP required.

07S:096 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. Admission to TEP required.

07S:100 Foundations of Education 3 s.h.
Overview of contemporary American education, preschool through secondary; including aims, history, philosophy of education; professional ethics, legal responsibilities; school curriculum, organization; school law, finance, political, social issues. Admission to TEP required. Same as 07E:100.

07S:101 Introduction to Education 3 s.h.
Basic orientation in the field of education; administrative organization, professional ethics, legal responsibilities, instructional procedures, contemporary problems in both elementary and secondary levels. Same as 07E:101.

07S:102 Directing Forensic Activities 3 s.h.
Forensic program planning, organization, evaluation at the secondary level; establishment of cocurricular forensic programs; prepares students to direct competitive activities. Same as 036:107.

07S:106 Advanced Methods: Art 3 s.h.
Art education theory and methods at elementary and secondary levels. Art curriculum, art education; instructional evaluation, motivation, instructional materials, observational techniques.

07S:106 Foreign Language Education Practicum I 3 s.h.
Skill development for teaching languages in the early grades; curriculum design, test creation, microteaching with inservice teachers. Prerequisite: 07S:110. Corequisite: 07S:106. Same as 07E:106.

07S:107 Foreign Language Education Practicum II 3 s.h.
Practice in lesson design, classroom management techniques, evaluation skills during work with inservice foreign language teachers. Corequisite: 07S:117. Same as 07E:107.

07S:110 Teaching K-12 Second Language Learners 3 s.h.
Second language learning and teaching in the multicultural classroom; influence of school setting, societal context. Admission to TEP required. Same as 07E:110.

07S:111 Introduction and Practicum: Social Studies 2-3 s.h.
Experience observing and assisting social studies teachers and students in secondary schools; four to six hours per week in the school plus on-campus class meetings. Admission to TEP required.

07S:112 Introduction to Museology 3 s.h.
Introduction to history, philosophy, function, management of museums and related institutions; emphasis on American museums. GE: humanities. Same as 024:102, 028:102, 097:115, 113:103.

07S:113 Methods: Secondary School Journalism 3 s.h.
Methods and materials for teaching high school journalism; publication policies, staff organization, production schedules, technology, the Internet, and techniques for advising student publications; experience in simulated teaching situations. Offered fall semesters. same as 091:101.

07S:114 Introduction and Practicum: English and Speech 3 s.h.
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.

07S:115 Methods: English 3 s.h.
Organizational techniques, methods, materials for teaching high school English; experience in simulated teaching during laboratory sessions, integrated with lectures and discussions. Prerequisite: 07S:114. Same as 08P:190.

07S:116 Learning to Teach Second Languages 2-3 s.h.
Approaches, methods, and techniques of teaching the modalities of listening, speaking, reading, and writing in a second language. Corequisites: 07E:106 or 07S:118 or 07S:106 or 07S:118. Same as 026:119, 035:115.

07S:117 Learning to Teach Second Languages II 2-3 s.h.
Curriculum design, classroom management, student evaluation, technology, using context to teach culture in second languages. Prerequisite: 07E:110 or 07S:110. Corequisite: 07E:107 or 07S:107 or 08P:107 or 07S:119.

07S:118 ESL Practicum I 3 s.h.
Skill development for teaching English as a second language; curriculum design, test creation, microteaching with inservice teachers. Prerequisite: 07S:110 or 07S:118. Corequisite: 07S:110. Same as 07E:118.
07S:119 ESL Practicum II 3 s.h.
Practice in lesson design, classroom management techniques, evaluation skills during work with native or second language learners. Prerequisite: 07E:110 or 07S:110. Corequisite: 07S:117. Same as 07E:119.

07S:121 Environmental Science for the Gifted 1 s.h.
Environmental health research; principles of toxicology, process of environmental risk assessment; experience collecting, organizing, and analyzing information.

07S:122 Math/Science Program for High Ability Students 1 s.h.
Unique challenges and opportunities confronted by teachers of high-ability students; theory and practice, development of program outcomes for implementation. Same as 0TP:122.

07S:123 Teaching Anthropology 3 s.h.
Hands-on approach to understanding major ideas, learning teaching concepts. Same as 113:123.

07S:124 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. Same as 07E:124.

07S:125 Differentiated Curriculum for the Gifted 1 s.h.
Program options for K-12 gifted students; student abilities and needs linked with various curricula; case studies, school materials. Same as 07E:125.

07S:130 Workshops for Secondary School Journalism and Communication Teachers 1-2 s.h.
Teaching journalistic writing and editing, photography, design, desktop publishing, current technology; web page design; developing curricula and guiding student publications; for teachers responsible for journalism publication programs or classes. Same as 019:2.02.

07S:132 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. Admission to TEP required. Same as 07E:132.

07S:134 Curriculum and Methods: Middle/ Junior High Mathematics 3 s.h.
Modern subject matter, organization of content, techniques of teaching and assessing in grades 9-12. Prerequisites: 07S:095, 22M:050, 22M:070, and 22S:120; or consent of instructor.

07S:135 Curriculum and Methods: High School Mathematics 3 s.h.
Modern subject matter, organization of content, techniques of teaching and assessing in grades 9-12. Prerequisites: 07S:095, 22M:050, 22M:070, 22M:070, and 22S:120; or consent of instructor.

07S:136 Home/School/Community Partnerships 3 s.h.

07S:138 Practicum: Band Instrument Care and Repair 1 s.h.

07S:139 Child and Adolescent Voice Production 2 s.h.
Principles, techniques of voice production and pedagogy. Same as 025:111.

07S:140 Band Methods and Materials 3 s.h.
High school and elementary school music methods required for teaching certificate; for instrumental music education majors.

07S:141 Measurement and Evaluation in Music Education 3 s.h.
Measurement and evaluation techniques for music aptitude; achievement, preference; emphasis on developing teacher-made tests and on available standardized music tests.

07S:142 Methods and Materials: Secondary School General Music 3 s.h.
Literature, methods, materials, organizational plans of general music courses in secondary schools.

07S:143 Instrumental Techniques 1-3 s.h.
Same as 025:105.

07S:145 Piano Pedagogy 2 s.h.
Cognition of music, affective response, aesthetic response, musical ability.

07S:145 Instrumental Conducting 2 s.h.
Advanced skills for instrumental conducting, score analysis, rehearsal techniques. Literature selection. Prerequisite: 025:107 Same as 026:108.

07S:147 Choral Methods 3 s.h.
Organization, implementation of effective choral music programs for all ages. Same as 025:109.

07S:148 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 school register under 07S:148. Prerequisite: 07S:147. Same as 025:110.

07S:149 Behavioral Research in Music 2-3 s.h.
Preparation for conducting research on music behavior.

07S:150 String Methods and Materials 2-4 s.h.
Same as 025:112.

07S:151 Science Teaching and Practice with Early Learners 3 s.h.
Introduction to students, schools, the purpose of schooling children in science, learning theories, science curricula, contemporary science education issues, effective science teaching.

07S:152 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. Prerequisite: 07S:151.

07S:153 Instructional Issues in Teaching Science 3 s.h.
Articulating, experimenting, testing and implementing a research-based framework for teaching science in the real world of students, schools, teaching. Prerequisite: 07S:152. Corequisite: 07S:179.

07S:154 The Politics of Literacy 3 s.h.
Same as 07E:154, 008:173, 010:142.

07S:155 Approaches to Teaching Writing 3 s.h.
Same as 08N:141.

07S:159 Middle/Junior High Practicum in Science Education 2 s.h.
Supervised observation, quantitative and qualitative analysis, and self-evaluation in middle and junior high school science.

07S:160 Methods: Communication Patterns in teaching, curricular programs, objectives, instructional methods and materials, effects of oral and written communication, evaluation, testing and grading, textbooks and references, periodicals and sources of publications; contemporary communication education theory and practice. Same as 026:160.

07S:170 Methods: Social Studies Analysis of the teaching-learning process; organization of social studies content for teaching purposes; selection of learning procedures and new strategies; practical work includes microteaching, computer assisted modules, lesson plan development, writing test items.

07S:172 Thinking Skills Factors involved in teaching thinking skills as a total concept; the relationship of critical and creative thinking; review of published programs.

07S:173 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: pull-out programs, facilitating research projects, mentoring in advanced programming.

07S:175 Linguistic Diversity in the Classroom 3 s.h.
Topics related to linguistic diversity in the classroom grades K-12; optimal teaching techniques for positive academic outcomes of linguistically diverse children. Same as 07E:175.

07S:178 Workshop in Teaching Communication and Forensics arr.
Methods, materials, progression, evaluation in teaching; supervision of students in courses and class activities; opportunities for observation, demonstration, practice in teaching discussion and debate, and in individual speech and forensic events. Same as 07E:178.

Supervised teaching experience in a single subject; secondary school setting.

07S:180 Issues in Foreign Language Education 3 s.h.
Theoretical perspectives of pivotal research issues at the forefront of foreign language education; system-wide implications for foreign language professionals for disseminating research.

07S:182 Language and Learning 2-3 s.h.
How language growth reflects and enables cognitive development; scientific research in psychology, anthropology, education; discussion of the relationship of language theory to schools of language instruction. Same as 07E:182, 08P:182.

07S:183 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 07E:183, 039:177.

07S:184 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.

07S:186 Curriculum Foundations 2.3 s.h.
Elementary and secondary background developments in curriculum; definitions, historical perspective, theories of knowledge, models, learning theories, directions of development and shaping forces; emphasis on development of a curriculum project. Same as 07E:186.

07S:187 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. May be repeated. Corequisite: student teaching.

07S:188 Practicum in Teaching and Curriculum Development in Gifted Education 1-6 s.h.
Experience in developing course materials for classes offered through the Belin Center Same as 07C:188, 07E:188, 07U:188.

07S:189 Elementary School Special Subject Area Students Teaching Supervised teaching experience in a single subject in grades 16.

07S:190 Individual Projects in Laboratory Practice 1-3 s.h.
Projects in curriculum and instruction related to student teaching experience supervised by the University; culminates in written report.

07S:191 Observation and Laboratory Practice in the Secondary School arr.
Student teaching experience in performing the duties of regular classroom teachers under supervision of experienced personnel in secondary schools. Consent of instructor required.

07S:192 Observation and Laboratory Practice in the Secondary School arr.
Continuation of 07S:191, Consent of instructor required.

07S:193 Teaching Literature to Adolescents 3 s.h.
Reading and evaluation of literature suitable for junior and senior high school students. Same as 08P:198.

07S:194 Methods: High School Reading 2.3 s.h.
Methods and materials used in teaching developmental reading in all junior and senior high school content areas. Prerequisite: 07S:194.

07S:196 Topics in Curriculum and Instruction arr.
Consent of instructor required. Same as 07E:196, 07U:196.

07S:197 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 035:197.

07S:198 Coaching Practicum 1-2 s.h.
Supervised experience in coaching interscholastic teams under the direction of certified secondary school coaches. Open only to students completing teaching a teaching certification programs. Admission to TEP and consent of instructor required.

07S:199 Independent Study arr.

07S:200 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.

07S:201 Seminar: Current Topics in Music Education 1-3 s.h.
Major areas of professional and research interest. May be repeated.
07S:202 Second Language Program Management 3 s.h.
Preparation for supervising, administering foreign language programs at all levels; for precollege language teachers, graduate students.

07S:203 Second Language Planning in Education 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.

07S:204 Literature for Children II 3 s.h.
Current theory and research practice in reading and responding to children’s literature; genre and topic vary. Same as 07S:204, 08P:204.

07S:205 Foundations of Education 3 s.h.
Overview of American education, preschool through secondary; aims, history, philosophy, professional ethics, legal responsibilities; school curriculum, organization, finance, school law, political and social issues. Admission to TEP required. Same as 07E:205.

07S:206 Curriculum Development in Music Education 2 s.h.
Curriculum development, instructional materials, analysis of current teaching methods and techniques in school music programs. Same as 07E:206.

07S:207 Reading in Non-Roman Scripts 3 s.h.
Theory and practice of reading in languages that use non-Roman alphabets, syllabary, logosytematic reading in first and second language contexts; instructional and literacy development issues. Prerequisite: 07E:171 or 07P:270 or 07S:384 or equivalent. Same as 164:226.

07S:208 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. Prerequisite: 07S:183.

07S:230 Workshop in School Mathematics 1-3 s.h.
Recent developments in school mathematics teaching methods and curriculum relevant to a selected issue; one to three weeks of intensive examination, experience. Same as 07E:230.

07S:231 Technology in School Mathematics 2-3 s.h.
Methods, materials, issues, pedagogy, assessment; use, evaluation of mathematics software, other technology; implications for organization, development of course content. Same as 07E:231.

07S:233 History and Foundations of Social Studies Education 3 s.h.
Same as 07E:233.

07S:234 Foundations of Mathematics Education 2-3 s.h.
Curriculum and instruction related to teaching mathematics in the United States; learning theory applied to teaching, learning mathematics; curriculum design; curriculum and achievement patterns in different countries; sex differences in achievement, research literature. Same as 07E:234.

07S:235 Current Issues in Mathematics Education 2-3 s.h.
Recent curriculum developments, experimental programs, research relevant to classroom instruction, trends in education that may have a significant impact on mathematics programs. Same as 07E:235, MTE:235.

07S:236 The 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.

07S:239 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 computer and calculators, implications of current research for the algebra classroom.

07S:240 Foundations of Music Education 2 s.h.
Historical, philosophical, sociological, psychological foundations of music education as the bases for developing school music programs.

07S:241 Music Education Workshop 1 s.h.
Materials and innovative instructional procedures for teaching instrumental music in public schools and colleges. May be repeated. Same as 025:220.

07S:244 Individual Projects in Music Education 1-2 s.h.
Projects of special concern to individual music teachers in the public schools.

07S:250 Program and Research Problems in Science Education 2 s.h.
Identification of program and research problems; group involvement in preparing solutions; potential external funding sources. Same as 07E:250.

07S:251 Preparation of Curriculum Materials for School Science 1-3 s.h.
Preparation of instructional materials for science courses. May be repeated.

07S:252 Designing Strategies for Science Instruction 1-4 s.h.
Strategies and instructional models characterizing science instruction at the elementary, secondary, college levels. Offered spring semesters and summer sessions.

07S:253 Recent Curriculum Developments in Science 1-3 s.h.
Review of national curriculum efforts for school science, including, materials, rationale, teaching strategies. Offered summer sessions.

07S:254 Administering and Supervising K-12 Science Programs 1-3 s.h.
Problems, practices, responsibilities, techniques characterizing the position of science supervisor: articulation of K-12 programs; primarily for supervisor trainees and advanced students. May be repeated. Offered spring semesters and summer sessions. Same as 07E:254.

07S:255 Science Education: Issues, History, and Rationale 2-3 s.h.
Intermediate topics in philosophy and psychology of science, implications for research and practice in science education. Offered full semesters. Prerequisite: previous work in philosophy or psychology of science. Same as 07E:255.

07S:256 Science Education: The Nature of Science 3 s.h.
Historical and sociological understanding of the nature of science: applications of that understanding to problems and issues in science education. Offered spring semesters. Prerequisites: 07E:128 and previous work in history or sociology of science. Same as 07E:256.

07S:257 Science Education: Teaching, Learning, and Curriculum Models 2-3 s.h.
Theory and techniques for designing printed and laboratory material for science programs. Offered fall semesters. Same as 07E:257.

07S:258 Science Education Research Models and Conceptual Schemes 3 s.h.
Research models and conceptual schemes in science education. Same as 07E:258.

07S:260 Restructuring Science Courses 2-3 s.h.
Constructivist learning model applied to existing science courses; emphasis on student-centeredness. May be repeated.

07S:261 Leadership and Change in School Science 2-3 s.h.
Developing leadership skills for science education reform. May be repeated.

07S:262 Elements of Change in Science Education 2-3 s.h.
Current restructuring efforts; theoretical characteristics of restructuring; S&C, STS-constructivist paradigms used to explore strategies for diffusion.

07S:263 Alternative Assessment in Science Education 2-3 s.h.
Comprehensive exploration; theoretical basis, strategies for day-to-day use in secondary classroom.

07S:264 New and Emerging Pedagogies in Science Education 2-3 s.h.
Constructivist learning model in science education; the theoretical model, its range of applications to everyday pedagogical practice.

07S:266 Mentoring of Science Educators 2-3 s.h.
Self-analysis, interpersonal communication, leadership, and mentoring versus evaluation. May be repeated.

07S:267 STS as an Approach to Science 2-3 s.h.
Meaning, application of science/technology/society approach.

07S:268 Science Concepts Applied to Local Issues 2-3 s.h.
Science concepts as product of instructional process.

07S:277 Seminar: Social Studies Education 1 s.h.
Periodical literature, trends, curricular developments, research in various aspects of social studies education; for master’s and doctoral candidates in social studies education. Same as 07E:277.

07S:279 Experimental Research in Music Education 3 s.h.
Design, performance, reporting of experimental research studies that illustrate methods of experimental control and statistical evaluation in music. Prerequisite: 07S:149.

07S:280 Workshop: Teacher Training for Advanced Placement Courses 1 s.h.
Focus on a particular academic Content area. Consent of instructor required.

07S:281 Junior High School and Middle School Curriculum 2-3 s.h.
Comparison of practices in junior high school and middle school; objectives and content in various subject areas; current trends, curriculum planning: development of a model program.

07S:285 Supervision of Instruction and Staff Development 2-3 s.h.
Teacher effectiveness research, formative and summative evaluation procedures, with emphasis on the supervision of student teachers; research on staff development and bringing about change in education. Same as 07E:285.

07S:291 Secondary School Curriculum 2-3 s.h.
Theory and development of secondary school curriculum: analysis of components of curriculum; emphasis on practices and issues in various subject areas since 1983.

07S:293 Individual Instruction in Secondary Education 2 s.h.
Consent of instructor required. Same as 164:300.

07S:306 Proposal Writing for Second Language Research 3 s.h.
Procedures and techniques for writing research proposals at the doctoral level; written research proposal dealing with a question in second language teaching and learning. Consent of instructor required.

07S:308 Seminar: Research and Current Issues in Second Language Acquisition 2 s.h.
Literature review, critical analysis of research, current issues and problems for a specific curricular area. May be repeated. Same as 07E:308.

07S:315 M.A. Seminar: English Education 3 s.h.
Significant developments in English education; primary and collateral readings. Consent of instructor required. Same as 08P:405.

07S:335 Seminar: Mathematics Education 3 s.h.
Analysis of current research, research methodology, curriculum developments in mathematics education; topics vary. Primarily for Ph.D. candidates. May be repeated. Same as 07E:335.

07S:340 Advanced Topics in Curriculum and Instruction 3 s.h.
Topics vary. Same as 07E:340, 07S:340.

07S:342 Supervision and Administration in Music Education 2 s.h.
Problems and responsibilities of music supervisors, including curriculum, facilities, financing, supervision, in-service training and reporting, study of factors influencing music curriculum decisions.

07S:350 Seminar: Science Education 0-2 s.h.
Discussion of completed faculty and doctoral candidates’ research, national issues, program features. Same as 07E:350.

07S:355 Action Research in Science Education 2-3 s.h.
Same as 07S:355.

07S:356 Science Education Internship: Teacher Education Supervision and Administration 2-3 s.h.
Same as 07E:356.

07S:367 Seminar: Current Issues in Art Education 2-3 s.h.
Analysis of literature in art education and related disciplines. May be repeated.
07S:368 Ph.D. Seminar: Current Research in Science Education 2-3 s.h.
Significant ongoing research programs in the field; emphasis on faculty research.

07S:370 Methods in Literacy Research 3 s.h.
Conceptual and practical exploration of selected research methods, including pilot data collection, analysis, and reporting. May be repeated. Same as 07E:370, 08P:300.

07S:385 Practicum in College Teaching 3-4 s.h.
Consent of instructor required.

07S:391 Problems of Curriculum Planning 2-3 s.h.
Organizing and conducting programs of curriculum review and improvement; techniques for developing, curriculum materials; typically includes field experience; examination of current curriculum issues.

07S:392 Field Service Project in Secondary Education 3-6 s.h.
Consent of instructor required.

07S:393 Master's Degree Thesis 3 s.h.
Consent of instructor required.

07S:395 Educational Specialist Research in Secondary Education 3-6 s.h.
Consent of instructor required.

07S:405 Seminar: Child Art and Art Education 2-3 s.h.
Analysis and evaluation of current concepts of child art and art education; perception, creativity, art education; historical development of theories of child art, child development, at education. Same as 07E:405.

07S:406 Research in Art Education 3 s.h.
Individual research under supervision; applicable to thesis preparation, doctoral prospectus development. May be repeated. Same as 01E:406, 01E:406.

07S:407 Research: Science Education 3 s.h.
Planning of individual research projects by M.S. and Ph.D. candidates.

07S:415 Ph.D. Seminar in Language, Literacy, and Culture 3 s.h.
Historical, recent research and theory in literacy education. May be repeated. Consent of instructor required Same as 07E:415, 08P:425.

07S:445 Social and Psychological Factors in Music Education 3 s.h.
Social and psychological factors that affect curriculum and instructional practices in music. Doctoral student standing in music education or consent of instructor required.

07S:493 Ph.D. Thesis 3-6 s.h.
Consent of instructor required.

Special Education Courses at the 100 level are open to students in education and related disciplines.

07U:100 Mainstreaming the Exceptional Learner 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. Admission to TEP required.

07U:117 Improving Outcomes for People with Disabilities 3 s.h.
Theory and practice of interdisciplinary programming: roles and responsibilities of different disciplines serving persons with disabilities, cooperative service strategies, case management, individual program planning; includes case studies, role plays, simulations. Consent of instructor required. Same as 042:117, 096:117.

07U:121 Career Education and Transition 3 s.h.
Curriculums, programs, and delivery systems that help persons with disabilities become employable; job and task analysis; transition planning strategies; agencies designated to assist persons with disabilities. Fieldwork stations and job training sites required.

07U:130 Exceptional Persons 3 s.h.
Children at all levels of exceptionality, from talented and gifted through profoundly disabled; special needs populations.

07U:131 Introduction to Learning Disabilities 3 s.h.
The field's status, history, theory, definitions, teaching approaches, programs; unique topic of elementary and secondary education age students; emphasis on cognitive processes.

07U:132 Introduction to Behavioral Disorders 3 s.h.
Emotional and behavioral issues, definitions, history, and problems of classification, origin of disorders; basic assessment and intervention approaches, school placement, programming for elementary and secondary students.

07U:133 The Culturally Different in Diverse Settings 3 s.h.
Problems in teaching culturally different children of school age; relevant research on the influence of a disadvantaged background on students' learning potentials. GE: cultural diversity.

07U:134 Parent-Teacher Communication 1-3 s.h.
Realities of working with parents; interpersonal skills; options for parent support services. Same as 07E:134, 07F:134.

07U:135 Mental Retardation 3 s.h.
Causes and treatment of mental retardation; current issues in mental retardation; educational programming and the role of schools in teaching children with mental disabilities.

07U:136 Home/School/Community Partnerships 3 s.h.
Issues related to collaboration among families, educators, community members and students in implementing school programs. Same as 07E:136, 07P:136, 07S:136.

07U:137 Introduction to Educating Gifted Students 3 s.h.
Selection, identification, characteristics, programming, educational methods and materials for the gifted; discussion on readings, films, and guest speakers; practical project required. Same as 07S:137.

07U:138 Methods for Teaching Disabled Students 3 s.h.
Methods for teaching students with physical disabilities and health impairments.

07U:139 Assessment and Programming for Disabled Students 3 s.h.
Medical, therapeutic, educational aspects; several professions involved in evaluation, treatment, general management of children with disabilities; nature of various handicapping conditions and causes, and special considerations of each.

07U:139 Practicum in Teaching and Curriculum Development in Gifted Education 1-6 s.h.
Includes experiences in developing course materials for classes offered through the Belin Center. Same as 07C:139, 07E:139, 07S:139.

07U:140 Integrative and Clinical Practicum 2-3 s.h.
Critical issues related to interdisciplinatory delivery of services to persons with developmental disabilities; observation and participation in staffing and consultation; opportunity for related community experiences.

07U:141 Supervised Teaching with Physically Handicapped Students 3 s.h.
Consent of instructor required.

07U:190 Integrative and Clinical Practicum 2-3 s.h.
Consent of instructor required. Same as 07E:196, 07S:196.

07U:191 Methods: Children with Learning Disabilities and Behavioral Disorders 4 s.h.
Methods and materials; strategies for assessing behavior; academic achievement, social skills; instructional resources; consultation with parents and peers; collaboration strategies. Prerequisites: 07U:131, 07U:132, and 07U:238.

07U:200 Methods: Children with Learning Disabilities and Behavioral Disorders 4 s.h.
Methods, materials, accommodations; practical skills for working in school/community settings; academic, affective, behavioral assessment; communication skills, management strategies, innovative program models, transition and career education planning. Prerequisites: 07U:131, 07U:132, and 07U:238.

07U:201 Methods: Adolescents with Learning Disabilities and Behavioral Disorders 4 s.h.
Methods, materials, accommodations; practical skills for working in school/community settings; academic, affective, behavioral assessment; communication skills, management strategies, innovative program models, transition and career education planning. Prerequisites: 07U:131, 07U:132, and 07U:238.

07U:202 Practicum with Exceptional Persons 3 s.h.
Practicum experience with students with disabilities; experiences different from open student's program of study. Consent of instructor required.

07U:203 Supervised Teaching: Elementary Learning Disabled Students 5, 10 s.h.
Student teaching; open only to special education majors. Consent of instructor required.

07U:204 Supervised Teaching: Elementary Behavior Disorders 5, 10 s.h.
Student teaching; open only to special education majors. Consent of instructor required.

07U:205 Seminar: Graduate Supervised Teaching 1 s.h.
For students enrolled in graduate student teaching practicum. Special education major and consent of instructor required.

07U:206 Practicum with Exceptional Persons 3 s.h.
Practicum experience with students with disabilities; experiences different from open student's program of study. Consent of instructor required.

07U:207 Supervised Teaching: Secondary Learning Disabled Students 5, 10 s.h.
Student teaching; open only to special education majors. Consent of instructor required.

07U:208 Supervised Teaching: Secondary Behavior Disorders 5, 10 s.h.
Student teaching; open only to special education majors. Consent of instructor required.
07U:238 Assessment of Learning Difficulties 1-3 s.h.
Administration of Individual educational assessment instruments and
interpretation of test results; supervised practice in assessment and
planning. Consent of instructor required. Same as 07P:238.

07U:240 Behavioral Principles 2 s.h.
Principles of behavior modification; defining/measuring behaviors,
functional behavior analysis; proactive/reactive treatment strategies;
behavioural assessment/treatment of stereotypic/self-injurious behavior;
behavioral assessment/treatment of aggressive/disturbing behaviors; use
of single-case experimental designs.

07U:241 Methods: Persons with Moderate/Severe/Profound Mental
Disabilities I 3 s.h.
Instructional domains; functional, age-appropriate, community-based
curriculum development; meaningful assessment; integration in regular schools and communities;
domestic and community functioning, leisure/recreation, vocational skill; functional academics. Prerequisites: 07U:130,
07U:135, 07U:238, and 07U:240; or consent of instructor.

07U:242 Methods: Persons with Moderate/Severe/Profound Mental
Disabilities II 3 s.h.
Systematic instruction and application to functional skills training;
design of appropriate instructional programs; data collection systems. Prerequisite: 07U:241 or consent of instructor.

07U:243 Issues: Teaching Persons with Moderate/Severe/Profound Disabilities 3 s.h.
Current issues that affect lives of disabled persons and those
who work with them Prerequisite: 07U:130 or consent of instructor.

07U:244 Supervised Teaching: Elementary Moderate Mental Disabilities 5, 10 s.h.
Student teaching in a special education classroom.

07U:245 Supervised Teaching: Severe/Profound 3, 5 s.h.
Student teaching in special education classroom serving students who
are severely/profoundly disabled.

07U:247 Supervised Teaching: Secondary Moderate Mental Disabilities 5, 10 s.h.
Student teaching in a special education classroom.

07U:248 Adaptations for Students with Multiple Disabilities 3 s.h.
Enhancing participation of persons with multiple disabilities;
partial participation, individualized adaptations, positioning;
handling techniques; integration of therapy with educational programs. Prerequisite: 07U:130 or consent of instructor.

07U:249 Supported Employment and Transition Services for Persons with Severe Disabilities 3 s.h.
Making the transition into supported employment; transition planning;
strategies, person-centered career planning, job development strategies, building job-site supports; processes and procedures for professionals. Prerequisite: 07U:130 or Consent of Instructor.

07U:252 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
Division of Psychological and Quantitative Foundations, but
because of the nature of handicapping conditions and the low
incidence of such handicaps, the single-subject design yields
better research information. Prerequisite: 07U:248. Same as
07P:352.

07U:260 Special Education Consultation 2 s.h.
Skills for conducting in-service needs of special education
teachers, delivering staff in-service programs, evaluating
effectiveness of in-service programs.

07U:271 Assessment of Young Children with Disabilities 3 s.h.
Theory and practice for inter/transdisciplinary assessment of
young children and family needs. Prerequisite: 07U:130 or
consent of instructor.

07U:272 Development of Young Children with Disabilities 3 s.h.
Normal and atypical development of young children; emphasis on
implications of specific disabilities. Prerequisite: 07U:130 or
consent of instructor.

07U:273 Methods: Early Childhood Special Education Ages 0-3 3 s.h.
Methods and materials for working with special-needs infants
and young children up to age 3, including medically fragile children. Pre- or corequisite: 07U:271.

07U:274 Methods: Early Childhood Special Education Ages 3-6 3 s.h.
Methods and materials for working with children ages 3-6,
including alternative modes of communication. Pre-or
corequisite: 07U:271.

07U:275 Families of Young Children with Disabilities 3 s.h.
Research and practice in early intervention; emphasis on impact
of the special-needs child on family life, parent-child interaction
patterns, facilitating psychosocial support, developing cooperative
relationships with parents, family involvement in planning
and implementation.

07U:276 Supervised Teaching: Early Childhood Special Education I 3, 5 s.h.
Student teaching in a home-based early intervention program. Prerequisite: 07U:273.

07U:277 Supervised Teaching: Early Childhood Special Education II 3, 5 s.h.
Student teaching in a center-based early intervention program. Prerequisite: 07U:274.

07U:293 Individual Instruction in Special Education 3 s.h.
Permits specialized study of topics not included in other
courses. Consent of instructor required.

07U:340 Advanced Topics in Curriculum and Instruction 3 s.h.

07U:345 Proseminar: Issues, Trends, and Research in Special Education 2 s.h.
Conceptual and practical development of research across special
education and related disciplines; empirical review of the
literature: focus on professional writing skills. Consent of
instructor required.

07U:346 Proseminar: Issues, Trends, and Research in Special Education 2-3 s.h.
Recent research from a variety of special education areas
reviewed by students; simulated comprehensive examinations. Prerequisite: 07U:343.

07U:347 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).

07U:348 Contemporary Research in Behavioral Disorders 3 s.h.
In-depth analysis of current research in behavioral disorders;
focus on evaluating its methodology and contribution to the
field.

07U:352 Methods for Quantitative Research Synthesis 3 s.h.
Conceptual and empirical review of methods of research
integration; emphasis on quantitative procedures (e.g.,
meta-analysis) with regard to their theoretical and technical
foundations.

07U:353 Seminar: Single Subject Design Research 3 s.h.
Reviews of single subject research, development of student
proposals; focus on special education, applied research.

07k380 Practicum in College Teaching 3 s.h.
Supervised experience in teaching basic special education
courses; for doctoral students majoring in teacher training
Consent of instructor required

07U:392 Field Service Project in Special Education Internship 3 s.h.
Part-time or full-time experience as a “intern” in school district
or area education agencies: develops skills in supervision and
administration of special education: Consent of instructor
required.

07U:403 Ph.D. Thesis in Special Education 3 s.h.
Consent of instructor required.
The program in higher education offers approved course work leading to administrator endorsements as well as a course in supervision and evaluation that fulfills state evaluator training requirements. Applicants should consult an adviser to choose course work that is appropriate to their area of administration and that meets the college’s approved program requirements.

**Undergraduate Program**

**Higher Education - Major in Health Occupations Education**

The health occupations education major prepares teachers for employment at the community college level in preparatory health occupations education programs. In addition to basic skill and General Education Program requirements of the College of Liberal Arts, students complete courses in professional education and in the health occupations education specialty field and/or supporting areas.

Students who apply to this program must hold current certification, licensure, or registry appropriate in the area of health occupations education in which they wish to teach (e.g., dental or medical office assistance, or respiratory therapy). The health occupations education major is built on the health occupations credential and includes work in professional education and liberal studies appropriate to teachers who want to earn a baccalaureate degree.

Applicants to this program must satisfy criteria for admission to the teacher education program (TEP) of the College of Education. Program requirements are as follows.

**PROFESSIONAL EDUCATION COMPONENT**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>s.h.</th>
</tr>
</thead>
<tbody>
<tr>
<td>07H:112</td>
<td>Teaching of Adults</td>
<td>3</td>
</tr>
<tr>
<td>07H:117</td>
<td>Foundations of Vocational Education</td>
<td>2</td>
</tr>
<tr>
<td>07H:190</td>
<td>Introduction to Postsecondary Teaching</td>
<td>2</td>
</tr>
<tr>
<td>07H:191</td>
<td>Community College Teaching Internship</td>
<td>6-12</td>
</tr>
<tr>
<td>07H:192</td>
<td>Curriculum Development: Application to Community Colleges</td>
<td>3</td>
</tr>
<tr>
<td>07H:193</td>
<td>Evaluation: Application to Community Colleges</td>
<td>2-3</td>
</tr>
<tr>
<td>07P:075</td>
<td>Educational Psychology and Measurement</td>
<td>3</td>
</tr>
<tr>
<td>07W:092</td>
<td>Introduction to Microcomputing for Teachers</td>
<td>1</td>
</tr>
<tr>
<td>07W:111</td>
<td>Technology in the Classroom</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>An appropriate course in social foundations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Additional specialty course work in health occupations education</td>
<td>2-3</td>
</tr>
<tr>
<td></td>
<td>Course work in the health occupations education specialty and supporting field should be planned carefully in consultation with the adviser.</td>
<td>10</td>
</tr>
</tbody>
</table>

Students may take workshops or courses offered by specific health colleges, or they may choose electives such as development of audiovisual aids or computers in education, in keeping with their educational goals.

**Graduate Programs**

**Educational Administration**

The program in educational administration prepares individuals for leadership positions. Its programs lead to the M.A., Ed.S., and Ph.D. degrees and to administrative licensure/certification. Educational administration offers joint programs with other divisions in the College of Education and with other colleges at the University.

**Licensure/Certification**

To be eligible for recommendation by The University of Iowa for licensure/certification in Iowa as an elementary principal, secondary principal, or superintendent, students must complete the appropriate program. The specific requirements for each program are available through the division office and the College of Education Office of Student Services.

Students who hold an M.A. degree must satisfy all core requirements and must complete at The University of Iowa the minimum semester-hour program for each licensure/certification level they seek. Because each administrative licensure/certification has specific requirements, candidates are required to plan their program with their adviser’s approval.

**Master of Arts**

The M.A. program prepares individuals for appointments as elementary or secondary school principals and central staff, and for positions in area education agencies and state departments of education. It is a nonthesis program requiring a minimum of 32 semester hours.

**ADMISSION**

Applicants must satisfy Graduate College requirements and are selected through a faculty review process. Factors considered include recommendations, grade-point average, Graduate Record Examination (GRE) General Test scores, and other evidence of academic ability and professional promise.

**CORE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>s.h.</th>
</tr>
</thead>
<tbody>
<tr>
<td>07D:201</td>
<td>Foundations of School Administration</td>
<td>3</td>
</tr>
<tr>
<td>07D:236</td>
<td>Administration of Students with Special Needs</td>
<td>3</td>
</tr>
<tr>
<td>07D:260</td>
<td>Contemporary Management Strategies for the K-12 Principal</td>
<td>3</td>
</tr>
<tr>
<td>07D:261</td>
<td>The Principalship</td>
<td>3</td>
</tr>
<tr>
<td>07D:285</td>
<td>School and Community Relationships</td>
<td>3</td>
</tr>
<tr>
<td>07D:298</td>
<td>Legal Aspects of School Personnel</td>
<td>3</td>
</tr>
</tbody>
</table>

**COMPREHENSIVE EXAMINATIONS**

The M.A. comprehensive examination consists of two 3-hour examinations: one in educational administration and one in a specialized area in either educational administration or a related field. Students must be registered in the Graduate College during the semester in which they take the comprehensive examination if they plan to graduate that semester.

**Specialist in Education**

The Ed.S. program prepares candidates for administrative appointments in school districts, area education agencies, state departments of education, and the U.S. Office of Education. It also assists school administrators in upgrading their administrative skills to the level of superintendent of schools. Students seeking licensure/certification plan a program approved by an adviser to meet state of Iowa licensure/certification requirements.

**ADMISSION**

Applicants must satisfy Graduate College requirements and are selected through a faculty review process. Factors considered include recommendations, grade-point average, Graduate Record Examination (GRE) General Test scores, and other evidence of academic ability and professional promise.

**CORE REQUIREMENTS**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>s.h.</th>
</tr>
</thead>
<tbody>
<tr>
<td>07D:291</td>
<td>Administration of Educational Programs and Personnel</td>
<td>3</td>
</tr>
<tr>
<td>07D:294</td>
<td>Politics and Economics of Financing Public Education</td>
<td>3</td>
</tr>
<tr>
<td>07D:297</td>
<td>Administrative Leadership Theory</td>
<td>3</td>
</tr>
<tr>
<td>07D:299</td>
<td>Legal Aspects of School Administration</td>
<td>3</td>
</tr>
<tr>
<td>07D:395</td>
<td>Educational Specialist Research in Educational Administration</td>
<td>arr</td>
</tr>
</tbody>
</table>

**PROGRAM EMPHASIS**

Students must complete the balance of their minimum required semester hours (minus electives) in one of the following emphasis areas. Courses specifically listed in each area of specialization are the required courses.

**Elementary School Administration**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>s.h.</th>
</tr>
</thead>
<tbody>
<tr>
<td>07C:222</td>
<td>Brief Counseling with Children and Adolescents</td>
<td>3</td>
</tr>
<tr>
<td>07D:262</td>
<td>School Organization Patterns</td>
<td>3</td>
</tr>
<tr>
<td>07D:304</td>
<td>Seminar: Supervision and Administration</td>
<td>2-3</td>
</tr>
<tr>
<td>07P:150</td>
<td>Introduction to Educational Measurement</td>
<td>3</td>
</tr>
</tbody>
</table>
Secondary School Administration
07C:222 Brief Counseling with Children and Adolescents 3 s.h.
07P:150 Introduction to Educational Measurement 3 s.h.

General School Administration
07D:205 Collective Bargaining in Education 3 s.h.
07D:295 Financial Management of Local School Systems 3 s.h.
07D:404 Field Service Project in Central Administration 1-3 s.h.
07P:143 Introduction to Statistical Methods 3 s.h.

Electives
Students choose electives completing the 62-semester-hour requirement for the Ed.S. degree. They may choose electives for specialization in fields such as staff personnel, business affairs, instruction, theory, legal aspects, curriculum, and information systems.

Research
All candidates for the Ed.S. degree must complete a formal research paper (4 semester hours) that deals with a specific problem in school administration or instruction.

Comprehensive Examination
The comprehensive examination for the Ed.S. degree consists of two 3-hour examinations: one in educational administration and the other in a specialized area in either educational administration or a related field. Students must be registered in the Graduate College during the semester in which they take the comprehensive examination if they plan to graduate that semester.

Ed.S. in Special Education Administration
The Education Specialist program in special education administration is offered jointly with the Division of Curriculum and Instruction.

The program provides sufficient training and experience to enable graduates to obtain entry-level positions in administration. The career focus of the program is on middle management positions such as supervisor and assistant director. Successful completion of the program qualifies the student for licensure/certification in Iowa to serve as a supervisor of special education (State of Iowa Endorsement 233, 238) or director of special education (State of Iowa Endorsement 239). It also qualifies the student for licensure/certification in general administration (State of Iowa Endorsement 171). The program requires a minimum of 62 semester hours.

Admission to the program is limited by available resources. Five to eight new students are admitted each year. In addition to the general requirements, admission requirements include a master’s degree, licensure/certification in some area of teaching exceptional children, qualification for a consultant’s endorsement, and classroom experience as a teacher or equivalent experience.

Doctor of Philosophy
The Ph.D. program prepares students for leadership positions at all levels of education (school administration, research, teaching at the college or university level) through individually designed programs that include course work in related disciplines and research pursuits. Emphasis is placed on the integration of theory and practice in the program.

The Ph.D. in educational administration is a flexible program that prepares professionals for leadership positions at all levels of administrative practice and for academic teaching and research positions. Sufficient course work and related experiences are planned individually. Students are expected to achieve competence in the areas of educational program planning, finance and governance, leadership theory, evaluation, and research methodologies that include statistical methods. They also must gain expertise in areas of specialized program and personnel policy analysis.

Course content in the Ph.D. program is divided into prerequisites, a core of common competencies, at least one specialization in the administrative field, cognate study outside the college, research skill development, and a research dissertation.

Commonly selected specialization areas are general administration, elementary school administration, secondary school administration, systems analysis and research, school finance, curriculum, legal aspects, theory, and school personnel. Students must demonstrate proficiency in two research tool areas.

Admission
Applicants must satisfy Graduate College requirements and are selected through a faculty review process. The program admits a maximum of 10 students in the fall semester or the preceding summer session. Factors considered include recommendations from college or university faculty that speak to the candidate’s scholarship and potential for academic success, grade-point average, and Graduate Record Examination (GRE) General Test scores. Also considered is a written statement addressing one of the following topics: personal philosophy of education, steps in the professionalization of teaching, current educational issues and their administrative impact, or the role of administration in educational organizations.

Complete application materials must be submitted by January 1 for summer session or fall semester admission. Admission decisions are made by the program faculty; applicants are notified by February 15.

Core Courses
Core courses are designed to provide the necessary background for further study, including research in specialized areas, and to develop competencies common to the functional areas of school administration. The four core courses integrate planning of educational personnel programs, analysis of the politics and economics of governance and the financing of public education, evaluation of administrative leadership theories, and options in research methodology and quantitative analysis.

Each core course carries 3 semester hours of credit, is open only to Ed.S. and Ph.D. students, and requires the development and practice of interaction, reading, and writing skills.

Seminars designed primarily for doctoral candidates are offered to supplement each functional core area. Scholarship is reflected in writing, reading, and research in all doctoral seminars.

Cognates
Students specializing in administration must complete a 9-semester-hour cognate outside the College of Education with the adviser’s approval.

Comprehensive Examinations
Doctoral students must satisfactorily complete an extensive six-hour comprehensive examination in the six common areas of educational administration and a three-hour examination based on the student’s areas of specialization and approved by the student’s adviser and the division chair. To be eligible to take the Ph.D. comprehensive examination, students must be completing or must have completed the doctoral core courses and the research tool requirements. Students must be registered in the Graduate College for the semester during which they take the exam, and they may not register for more than 3 semester hours of Ph.D. thesis credit during that semester. They also may not earn dissertation credit before that semester. No Ph.D. comprehensive examinations are held during summer sessions.

Students pursuing doctoral programs in areas other than educational administration who want to use some aspect of the educational administration program as an area of concentration for which they would request a comprehensive examination should consult with an adviser in the Division of Planning, Policy, and Leadership Studies early in their study sequence.

Any of the areas of specialization open to doctoral students in educational administration are open to other doctoral students who meet the necessary prerequisites for specific courses. Students should complete approximately 12 semester hours in one area of specialization before requesting a comprehensive examination. If the student decides to use a field within educational administration as a related comprehensive area, he or she should plan to complete approximately 18 semester hours of diversified course work in educational administration.

Research Dissertation
All students must write a formal dissertation prospectus and submit it for approval first by their adviser and then by the members of their doctoral committee. Student and adviser determine when the prospectus is complete. A final evaluation of the prospectus and approval to proceed may or may not be granted at the end of the prospectus committee meeting. Dissertation prospectus meetings are not held during summer sessions.
Students must accumulate 10 semester hours of dissertation research credit. The doctoral program culminates with final oral defense of the dissertation. Students usually take the examination within a month of their anticipated graduation. They must be registered at The University of Iowa during the session in which they graduate.

**RESIDENCY**

Each doctoral candidate must successfully complete two semesters (minimum of 9 semester hours on campus) to fulfill the residency requirement. The following sample Ph.D. program requires a minimum of 90 semester hours and assumes that students enter with an M.A. and 32 semester hours of graduate credit.

**Core Requirements**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>07D:291</td>
<td>Administration of Educational Programs and Personnel</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>07D:294</td>
<td>Politics and Economics of Financing Public Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>07D:297</td>
<td>Administrative Leadership Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>07D:370</td>
<td>Research Methodology and Quantitative Analysis</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Other Required Courses**

- Cognate courses selected with approval of adviser: 9 s.h.
- Research design and/or statistics: 6 s.h.
- Thesis: 10 s.h.
- Electives chosen to permit specialization: typically two or more doctoral seminars and 12 or more semester hours in a special area

**Social Foundations of Education**

Social foundations of education is an interdisciplinary program designed to enhance students’ ability to analyze the influence of social, historical, and philosophical forces on the formal educational enterprise. Major areas of specialization are comparative/international education, history of education, philosophy of education, policy studies, and sociology of education.

General requirements for admission are as stated by the Graduate College. A personal interview with one or more members of the social foundations faculty is desirable and may be required. An undergraduate and/or graduate emphasis in philosophy, the humanities, or the social sciences is strongly recommended. Students must maintain a 3.00 overall grade-point average to remain in the program.

**Master of Arts**

Students in the M.A. program must take a minimum of 18 semester hours in social foundations, which should include at least two courses each in three of the five areas of specialization. The remainder of the required 32 semester hours of course work must be in a concentration area appropriate to students’ career and academic goals. For example, students interested in philosophy of education usually take these courses in the Department of Philosophy. Students are not required to write a thesis.

Masters students must satisfactorily complete a six-hour comprehensive examination covering their three areas of study in the social foundations program and their outside area. The examining committee may elect to hold an oral examination after the exam.

**Doctor of Philosophy**

The Ph.D. program requires a minimum of 90 semester hours. Students are required to take a minimum of 24 semester hours in social foundations, which must include at least 12 semester hours in the major area of specialization and a minimum of 6 semester hours from each of two additional areas. In addition, students must take at least 9 semester hours in related College of Education courses in a concentration area, such as educational administration, educational psychology, measurement and evaluation, or higher education.

Approximately one-third to one-half (30-45 semester hours) of each student’s program is devoted to in-depth course work from at least one other University of Iowa program, such as history, philosophy, political science, or sociology. These sequences are individually planned by the student with the aid of his or her adviser and suggestions from the appropriate department(s).

Five research courses are required. They are chosen in accordance with the individual candidate’s research interests and program. One of these must be in quantitative methodologies (e.g., graduate-level statistics, microcomputing, demographic analysis), and one must be in qualitative analysis (e.g., philosophy of science, philosophy of social science, historiography, qualitative or case study methodologies, foreign language). The third course may be either quantitative or qualitative.

In addition, all students are required to successfully complete 07F:160 Critical Thinking and 07F:205 Research Process and Design. Dissertation research is usually taken for 12-15 semester hours of credit.

**COMPREHENSIVE EXAMINATION**

Doctoral students must satisfactorily complete an extensive comprehensive examination, including three 5-hour examinations: the first is in the student’s major area of study; the second is in the student’s other two areas of concentration within social foundations, and the third is in the student’s outside area of study and is prepared by faculty outside the social foundations program. These exams are followed by an oral examination.

**RESEARCH DISSERTATION**

All students must write a formal dissertation prospectus and submit it for approval first by their adviser and then by the members of their doctoral committee. Students and their advisers determine when the prospectus is complete.

Students must accumulate 12 semester hours 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 during the session in which they graduate.

**ADMISSION**

Applicants for admission must satisfy the requirements of the Graduate College. Candidates are selected on the basis of grade-point average, Graduate Record Examination (GRE) General Test scores, and promise for professional growth. Transcripts, GRE scores, three letters of recommendation, and a statement of educational goals are required.

Complete applications should be submitted well in advance of the intended semester of admission. Contact the department for admission dates.

**REQUIREMENTS**

The M.A. program requires a minimum of 32 semester hours. Students take six hours of written examinations based on the core, concentration, and specialization, according to the plan of study developed individually for each student.

Areas of concentration in which examinations may be written are administrative practices, academic practices, continuing education practices, and policy studies. Students majoring in another field who want to complete a related field in higher education and to be eligible to write a related-field examination should consult with a higher education adviser early in their studies. Plans of study are developed individually.
Specialist in Education
The Ed.S. program provides advanced graduate study in higher education in the areas of administration, academic planning and program development (including an emphasis on academic administration), community college administration, and continuing education for students usually not planning to continue for the doctorate. The specialist degree also may be awarded upon completion of a joint program that consists of a minimum of 60 semester hours of graduate work in higher education and an academic field, or upon completion of a higher education sequence following a master’s degree program.

ADMISSION
Applicants for admission must satisfy the general requirements for admission to the Graduate College. Candidates are selected on the basis of grade-point average, GRE General Test scores, and promise for professional growth. Transcripts, GRE scores, three letters of recommendation, and a statement of educational goals are required.

Complete applications should be submitted well in advance of the intended semester of admission. Contact the department for admission dates.

REQUIREMENTS
Requirements for the Ed.S. major in higher education are as follows.

Students must earn at least 18 semester hours in professional education and related fields. This work must include a structured internship determined in consultation with the adviser to be appropriate for one of the following five areas: administration, academic planning and program development (including an emphasis on academic administration), community college administration, continuing education, policy studies, or community college teaching (joint program only).

In addition, the program of study must include at least 28 semester hours in the student’s specialization area, determined in consultation with the adviser, and 10 semester hours of electives, also approved by the adviser.

Students also must earn 4 semester hours in research conducted under 07H:395 Educational Specialist Research in Higher Education.

Two 3-hour comprehensive examinations are required: one covering the field of higher education in general, and one covering one of the five concentrations in higher education, reflecting an area of specialization within the concentration. These exams may be followed by an oral examination.

RELATED FIELD
Students majoring in another field who want to complete a related field in higher education should consult with the higher education adviser early in their studies. Plans of study are developed individually.

TEACHING INTERNSHIP (JOINT PROGRAM ONLY)
Program participants teach half-time for a full semester at cooperating community colleges under the supervision of an experienced faculty member in that college and with field supervision from The University of Iowa. Interns participate in the academic life of the host community college, and they often gather data for their Ed.S. research project during the internship. Participants must be willing to travel to a community college and reside there for the one-semester program.

Doctor of Philosophy
The Ph.D. program is designed for persons who may serve as administrators, specialists, researchers, and teachers in postsecondary institutions or related public or private agencies. It requires a minimum of 90 semester hours beyond the baccalaureate degree.

The program in higher education offers four areas of concentration: general administration, academic planning and program development (including an emphasis on academic administration), community college administration, and policy studies.

ADMISSION
Applicants for admission to the doctoral program must satisfy the requirements of the Graduate College. Candidates are selected on the basis of grade-point average, GRE General Test scores, and promise for professional growth. Transcripts, GRE General Test scores, three letters of recommendation, and a statement of educational goals are required.

Ph.D. students are considered for admission once a year. Complete application materials must be received by December 1 for the following summer session or fall semester admission.

REQUIREMENTS
All higher education students are required to participate in the core experiences (19-22 semester hours). In addition, candidates choose one area of concentration and must earn 16-24 semester hours of credit in that area. Candidates choose a related field of at least 12 semester hours or a minor (up to 30 semester hours), which may be met by appropriate previous course work at the M.A. level that complements the area of concentration. The dissertation research (12-15 semester hours) must deal with a specific problem related to the area of concentration.

These four components-core, concentration, minor and/or related fields, and dissertation research-constitute a major part of the typical doctoral program and give students the opportunity to specialize in one or more areas of interest.

In addition, students are expected to develop research skills appropriate to their dissertation project. Students may take supplementary course work outside the division related to their concentration.

Comprehensive examinations for the doctorate cover the general area of higher education, the candidate’s area of concentration, and the minor and/or related field.

Students must complete a preliminary research proposal before applying to take the comprehensive examination. The paper should demonstrate the student’s ability to identify a scholarly study topic; formulate a scholarly problem or conceptual framework for addressing the topic; show competence in using relevant scholarly literature; and reflect writing and organizational skills necessary to complete a dissertation.

Courses
Planning, Policy, and Leadership Studies
07B:175 Introduction to the Economics of Education 3 s.h.
Economic perspective on the education industry and its educational processes; relationships between education and the economy.

Educational Administration
07D:110 Administrative and Policy Issues in Gifted Education 1 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.
07D:112 Evaluation of Gifted Programs 1 s.h.
Fundamentals of program evaluation essential for exemplary gifted programs.
07D:201 Foundations of School Administration 3 s.h.
Organization and administration of American public education; principles and concepts of organization.
07D:205 Collective Bargaining in Education 3 s.h.
Current status of public sector labor relations; collective bargaining system viewed through analysis of legal, historical, institutional perspectives; emphasis on union and management strategies.
07D:213 Individualized Instruction, Finance and Supervision arr.
Readings, special projects, and/or studies that reflect joint instructor/student interest in area of finance. Consent of adviser and instructor required.
07D:214 Individualized Instruction, Law and Supervision arr.
Readings, special projects, and/or studies that reflect joint instructor/student interest in area of law. Consent of adviser and instructor required.
07D:216 Individualized Instruction, Elementary Administration arr.
Readings, special projects, and/or studies that reflect joint instructor/student interest in area of elementary administration. Consent of adviser and instructor required.
07D:219 Individualized Instruction, Supervision arr.
Readings, special projects, and/or studies that reflect joint instructor/student interest in area of supervision. Consent of adviser and instructor required.
07D:236 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 07U:236.
07D:260 Contemporary Management Strategies for the K-12 Principal 3 s.h.
Leadership skills and management techniques for daily organization, operation of self, emphasis on climate, communication, group processes, conflict resolution, curriculum management.
07D:261 The Principalship 3 s.h.
Organization, supervision, administration of schools; curriculum leadership, instructional practice, personnel relations; role in analysis, school-community relationships, communication channels.
07D:262 School Organization Patterns 3 s.h.
Organizational approaches analyzed with focus on emerging patterns, new Vends in instructional procedures.
Approaches to research and evaluation; design variety, report required. Assignments to current and personal faculty research projects; 07D:236. 07D:370 Seminar: Value Problems in the Administration of American Education 3 s.h. Philosophical and sociological ideas underlying the America* system of public education administration; various ideas on the place of both conformity and dissent in democratic society and educational system; contemporary issues.

07D:381 Analysis and Appraisal of Curriculum 2-3 s.h. Comprehensive investigation of systematic procedures for identifying and evaluating essential features and constituent elements of a given school district's curricular offering; for persons in administration, curriculum, and supervision programs or positions.

07D:385 Supervision and Evaluation 3 s.h. Constructive leadership in educational organizations; analysis of research related to teacher and supervisor behaviors; evaluation procedures and behaviors that enhance leadership opportunities; positive aspects of the process and collective bargaining; for educators in administrative or supervisory roles.

07D:384 Seminar for Education Executives 0.4 s.h. Problem solving within an organization; specific problems determined by enrollee; for practicing school administrators.

07D:390 Selected Topics In Educational Administration arr. Individual and group investigation of contemporary problems and issues in educational administration. Consent of instructor required. Prerequisites: 07D:290.

07D:395 Educational Specialist Research in Educational Administration arr. Individual instruction in the design, research, writing of a research project of significant quality for upper-level graduate students. Consent of instructor required. Prerequisite: 07D:290.

07D:401 Field Service Project in Elementary Administration 1-3 s.h. Supervised experience working with problems in educational administration, including organization, planning, evaluation, decision making; individual project in a school setting. Consent of instructor required.

07D:402 Field Service Project in Secondary Administration 1-3 s.h. Supervised experience working with problems in educational administration, including organization, planning, evaluation, decision making; individual project in a school setting. Consent of instructor required.

07D:403 Field Service Project in Special Education Administration 1-3 s.h. Supervised experience working with problems in educational administration, including organization, planning, evaluation, decision making; individual project in a school setting. Consent of instructor required.

07D:404 Field Service Project in Central Administration 1-3 s.h. Supervised experience working with problems in educational administration, including organization, planning, evaluation, decision making; individual project in a school setting. Consent of instructor required.

07D:493 Individualized Instruction: Social Foundations 2 s.h. Instruction in social foundations of education.

07D:499 Politics of Education 2-3 s.h. Political setting of education at several levels--federal, state, and local--and consideration of factors that condition internal school and district politics. GE: social sciences.

07F:102 History of American Education 2-3 s.h. American educational history, with emphasis on conflicting historical interpretations of pivotal events and educational movements; contemporary reform efforts examined in historical perspective.

07F:106 Critical Thinking 3 s.h. Formal and informal logic and probabilistic reasoning; focus on construction and critical analysis of arguments; introduction to students planning research in social foundations.

07F:104 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.

07F:107 History of Western Education 2-3 s.h. Educational philosophies of significant individuals in history of education and relevance of their ideas in terms of contemporary educational practice in the United States

07F:110 Introduction to Social Foundations of Education 1 s.h. Introduction to the five disciplinary components of social foundations; professional development of social foundations scholars; workshop on dissertation, other student-authored scholarly papers.

07F:117 Philosophies of Education 2, 3, 5 s.h. Principal educational philosophers and philosophies that have influenced Western education; emphasis on broad philosophical ideas and conflicts; for practicing school administrators.

07F:120 Teaching in a Culturally Diverse Society 3 s.h. Issues in education and individual educators' own practice related to increasing cultural, racial, and linguistic diversity; challenges, concerns.

07F:123 History of Ethnic Minority Education 3 s.h. Macrohistorical perspective of role of education in social systems; impact of formal education on social stratification, social mobility, economic achievement in the United States and selected countries.

07F:125 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.

07F:140 Ethics in Education 3 s.h. Major theories of the nature of ethical action and of values and value judgment; theoretical accounts related to the practical decision making contexts of teaching.

07F:145 Current Issues: Philosophy of Education 3 s.h. Extension and application of philosophy of education through intensive critical examination of current scholarly discourse on philosophical topics.

07F:147 Political Philosophy and Education 3 s.h. Political ideas that shape contemporary U.S. educational policy (e.g., liberalism, conservatism, libertarianism, communitarianism, socialism); fundamental political concepts such as democracy, rights, justice.

07F:150 Gender and Education 3 s.h. Relationships between the construct of gender and the educational process, gender as a basis of social differentiation, gender and school performance, and gender and educational policy.

07F:154 Education, Race, and Ethnicity 2-3 s.h. Role of education in ethnic and racial stratification in the United States and other nations; influence of variations in family structure, stratification patterns, institutional constraints in formation of educational aspirations and achievement levels. GE: cultural diversity.

07F:165 Introduction to Program Evaluation 2 s.h. Models, designs, and data collection techniques that guide program evaluation; current issues, controversies. Same as OTP:165.
07F:170 Survey Research and Design 3 s.h.
Types of survey instruments; ethical issues; sampling problems;
logistic planning, cleaning procedures; construction and
administration of social survey to a select population on topic of
current interest; detailed examination of techniques of
questionnaire construction. Same as 07F:155.

07F:175 Demographic Techniques for Educational Research 3 s.h.
Basic demographic concepts, techniques, resources; life table
analysis, enrollment projections, demographic measurement,
shift-share analysis.

07F:180 Human Relations for the Classroom Teacher 3 s.h.
Influence of social factors such as discrimination, diversity,
equality, racism, sexism, and ethnic and socioeconomic pluralism
on American schools and classrooms; for teacher education
candidates. GE: cultural diversity.

07F:193 Individual Instruction: Social Foundations of Education 3 s.h.
Instruction in social foundations of education. Consent of
instructor required.

07F:195 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.

07F:205 Research Process and Design 3 s.h.
Research processes, with emphasis on development of critical
thinking and research skills; analysis of selected recent research
in the field; students draft a research problem.

07F:210 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 034:310.

07F:225 Education and Public Policy 2-3 s.h.
Policy process; emphasis on related literature of organizational
theory and policy analysis; critical analysis of problems and
sources of variation in policy development and decision
processes. Same as 07H:225.

07F:227 Political Dynamics of Education 2-3 s.h.
Concepts of politics and political analysis applied to the behavior
of individual in educational systems (K-12 and postsecondary)
and to educational institutions. Same as 07H:227.

07F:240 Topics in Social Foundations of Education 3 s.h.
Seminar for intensive study of one problem, issue, or work field.
May be repeated.

07F:275 Development Policy and Planning in the Third World 3 s.h.
Cross-cultural and interdisciplinary analysis of problems
associated with urbanization and development in developing
nations. Same as 043/275, 044/275, 102/275, 113/275.

07F:293 Individual Instruction in Social Foundations of Education 2-3 s.h.
Consent of instructor required.

07F:304 American Contribution to Educational Philosophy 2 s.h.
American philosophy and its influence on American public
education.

07F:306 Education in China 2-3 s.h.
Educational development in modern China from social, political,
literary perspectives; analysis of post-1949 educational policy
shifts.

07F:316 Policy, Planning, and Implementation in Education 2-3 s.h.
Review of research, applications. Same as 07H:316.

07F:493 Ph.D. Thesis 3 s.h.
Consent of instructor required.

Higher Education

07H:075 Introduction to Organizational Management 2 s.h.
For current and future presidents of fraternities and sororities at
The University of Iowa. Consent of instructor required.

07H:077 Workshop in Orientation Services 2 s.h.
Academic policies and procedures at The University of Iowa;
development of leadership, group facilitation, presentation skills.
Consent of instructor required.

07H:093 Individual Study: Higher Education 3 s.h.
Consent of instructor required.

07H:100 Issues and Policies in Higher Education 3 s.h.
Current selected functions, issues, policies of American higher
education.

07H:112 Teaching of Adults 2-3 s.h.
Problems associated with adults in learning role; recognized
variations in teaching techniques for adults.

07H:117 Foundations of Vocational Education 2-3 s.h.
Vocational education programs, with emphasis on federal and
state programs, educational services, career development, job
satisfaction, and changing needs of business and society.

07H:118 Introduction to the Law of Student Services 2-3 s.h.
Overview of law related to student services: basic legal
processes, case law for understanding and working with legal
issues; for practitioners in postsecondary settings.

07H:134 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, technology, sociology, education.

07H:140 Higher Education System in Comparative Perspective 2-3 s.h.
Organization, functions, and management of higher and
postsecondary education systems, institutions, and programs;
emphasis on major models of national systems; one nation
examined in depth.

07H:171 The Community College 2-3 s.h.
Character of community college as a postsecondary institution;
functions, students, faculty, control, financing, administration,
historical evolution.

07H:175 Workshop in Higher and Postsecondary Education 2 s.h.
Knowledge, experience shared through diverse strategies,
schedules. Consent of instructor required.

07H:190 Introduction to Postsecondary Teaching 2-3 s.h.
Current trends and topics in postsecondary occupational
education: instruction evaluation, legislation, licensure,
curriculum development, professionalism.

07H:191 Community College Teaching Internship 2-3 s.h.
Full academic term of supervised one-half-time teaching at a
community college; concurrent assignment to gain knowledge of
institutional policies and procedures, role of professional
associations.

07H:192 Curriculum Development: Application to Community Colleges 3 s.h.
Comprehension of a rational curriculum process common to
education in general, and its application to community college and
health careers.

07H:193 Evaluation: Application to Community Colleges 2-3 s.h.
Methods for educational evaluation in community college
programs, including teaching and program evaluation; emphasis
on achievement testing.

07H:199 Topics in Higher Education 2-3 s.h.
Topics submitted by students, faculty. May be repeated.

07H:201 Information Resources 1 s.h.
Search strategies, information literacy skills, and print/nonprint
resources for effective and efficient retrieval of scholarly
information; resources available locally, through the Internet,
and through congressional resources.

07H:215 Seminar: Theory and Practice of Leadership 3 s.h.
Theory-based literature and critiques of leadership as presented
in various literary genres, such as biography, novels, plays,
poetry, philosophical treatises.

07H:216 Finance in Higher Education 2-3 s.h.
Research and issues related to public and private funding of
higher education; costs, benefits, outcomes, resource
management.

07H:218 The Law and Higher Education 2-3 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.

07H:220 History and Philosophy of Postsecondary Education 3 s.h.
Major themes and developments in American higher education:
ideologies, people, movements that have influenced those
developments.

07H:222 Introduction to Policy Analysis and Evaluation 3 s.h.
Basic theories and techniques: emphasis on academic and
related educational policy issues.

07H:234 Organizational Theory and Administrative Behavior 3 s.h.
Theories and concepts of organizational behavior applied in
structural, organizational, administrative contexts of American
higher education.

07H:252 Education and Public Policy 2-3 s.h.
Policy process; emphasis on related literatures of organizational
topics and policy analysis; critical analysis of problems and
sources of variation in policy development and decision
processes. Same as 07F:225.

07H:269 Higher Education Management 2-3 s.h.
Variables that influence the decision-making process in
American higher education; application oriented, with analysis
of students’ own administrative skills. Prerequisite: background
in organizational and administrative theory or consent of
instructor.

07H:275 Political Dynamics of Education 2-3 s.h.
Concepts of politics and political analysis applied to behavior of
individuals in educational systems (K-12 and postsecondary) and
the educational institutions. Same as 07F:275.

07H:293 Individual Instruction in Social Foundations of Education 2-3 s.h.
Use of Internet and desktop computer for educational research,
including current problems and educational data.

07H:350 Administration of Technical Education Programs 3 s.h.
Administrator’s role in relating education to work; consideration
of legal, financial, and staffing aspects of vocational-technical
education; student and employer needs.

07H:293 Individual Instruction in Higher Education 2-3 s.h.
Consent of instructor required.

07H:295 Master’s Project 3 s.h.
Research for the nonthesis program; topic approved by adviser.

07H:311 Seminar: Research Topic in Higher Education 2-3 s.h.
Topic submitted by students, faculty. May be repeated.

07H:315 Curriculum Development in Higher Education 2-3 s.h.
Basic educational models, design and implementation techniques
appropriate to educational program development.

07H:316 Policy, Planning and Implementation in Education 2-3 s.h.
Review of research, applications. Same as 07F:316.

07H:317 Administrative Decision-Making in Higher Education 2-3 s.h.
Analysis of administrative problems and cases in higher
education; emphasis on organizational culture. Prerequisite:
07H:224 or 07H:226 or consent of instructor.

07H:318 Legal Issues in Student Services 2-3 s.h.
Analyses of legal issues and their application to design of policies
and procedures for student services in postsecondary
institutions. Prerequisite: 07H:218.

07H:320 Seminar: Quality Management and Quality Improvement in Education 2-3 s.h.
Theories, processes, tools of quality management and
improvement; case materials, related empirical studies on
implementation of quality principles in education.

07H:330 Strategic Marketing and Institutional Development 2-3 s.h.
Marketing concepts in context of higher education organizations;
use of these concepts and skills in college planning, decision making;
broadened awareness of marketing concepts. Prerequisite: 07H:220 or consent of instructor.

07H:333 Practicum in Higher Education 2-3 s.h.
Consent of instructor required.
07H:360 Seminar: History and Philosophy of American Higher Education 3 s.h.
Organizational culture, analysis and related to development of social, intellectual, institutional life in the United States, effects on present and future of higher learning; comparative analysis. Prerequisite: 07H:220 or consent of instructor.

07H:385 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 OTP:385. 

07H:395 Educational Specialist Research in Higher Education arr.
Supervision of design, research, writing of a research project; for Ed.S. candidates. Consent of instructor required.

Consent of instructor required

PSYCHOLOGICAL AND QUANTITATIVE FOUNDATIONS

Chair: Stewart W. Ehly

Associate professors: Stephen M. Alesci, Robert D. Ankenmann, Timothy N. Ansley, Daniel Clay, Kathryn C. Gerken, Joyce L. Moore, Audrey L. Qualls, John Marriotts Reeve, Brenda M. Sugrue, Donald B. Yarbrough

Associate professors emeriti: Lida C. Cochran, Carl S. Davis

Adjunct associate professors: Michele Ellison, James Maxey

Assistant professors: Laura Koehly, William Liu, Kathy Schuh

Adjunct assistant professors: Susan Assouline, Audrey S. Bahrick, Richard L. Ferguson, Deborah J. Harris, Julia C. Lenel, Candida R. Maurer, Richard Roberts, Amy Stoccoan, Leonard Welsh

Clinical assistant professor: Christine G. Novak

Instructors emeriti: Elizabeth J. Forell, Calvin E. Metha

Lecturers: G. John Achrazoglou, Bruce E. Drummond

Graduate degrees: M.A., Ed.S., Ph.D.


The division offers programs in five areas: educational measurement and statistics, counseling psychology, educational psychology, school psychology, and instructional design and technology. There are two general goals of these programs: 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 major emphasis in the M.A. and Ed.S. programs is on the first of these goals; that in the Ph.D. programs is on the second. However, there is some emphasis on both goals in all programs.

Undergraduate Course Work

The division offers an undergraduate minor in the combined areas of educational psychology, measurement, and statistical analysis. The purpose of the minor is to provide an enriched background in educational psychology, educational testing, and research methods in education. Students select a division adviser who helps them choose 15 semester hours of course work, of which 12 semester hours must be in 100-level courses. This minor does not lead to certification as a public school teacher.

One of the General Education Program requirements for graduation from the College of Liberal Arts is successful completion of a course designed to develop skills in quantitative or formal reasoning (see the College of Liberal Arts section of the Catalog); OTP:025 Elementary Statistics and Inference may be used to satisfy this requirement.

Graduate Programs

Educational Measurement and Statistics

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The M.A. in this field prepares students for positions that require basic knowledge of educational measurement, program evaluation, and data analysis. Such positions exist in research centers, testing organizations, large school systems, and state and federal education agencies. The program also is appropriate for students who seek to broaden their knowledge of measurement and research methodology for personal development.

ADMISSION

Grade-point average requirements for admission to the program are the same as those established by the Graduate College. Applicants who score lower than 500 on the verbal, quantitative, or analytical sections of the Graduate Record Examination (GRE) General Test, and who do not show offsetting evidence of superior ability, are not admitted. However, the faculty may adjust the GRE standards for students whose native language is not English.

Students who expect to concentrate in statistics should have training in college mathematics through differential and integral calculus. The absence of such training is a deficiency that must be made up during the first year of residence. At least one year of professional experience in teaching, research, or a related field is highly desirable.

Students who want to transfer to this program from another University of Iowa program must submit a statement explaining why they want to change programs and why they think 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.

REQUIREMENTS

The degree may be earned with thesis (minimum of 28 semester hours of course work plus 2-4 semester hours of thesis credit) or without thesis (32-semester-hour minimum). All students must complete a core of courses totaling approximately 26 semester hours. Included in this core are 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. If a student already has completed equivalent courses at another institution, more advanced courses may be added to the core.

The six hours of final comprehensive examinations typically include three-hour examinations in educational measurement and in applied statistics. With the approval of the M.A. committee, the 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.

Doctor of Philosophy

This doctoral program prepares students for senior professional positions in the fields of educational measurement, program evaluation, and statistical methods. Such positions generally are found in colleges and universities, state and federal agencies, large public and private school systems, testing agencies, and research centers.

ADMISSION

Applicants for admission to the program must hold an M.A. from an accredited institution. The grade-point average requirement is the same as that for the Graduate College.

Applicants who score lower than 500 on the verbal, quantitative, or analytical sections of the Graduate Record Examination (GRE) General Test, and who do not show offsetting evidence of superior ability, are not admitted. However, the faculty may adjust the GRE standards for students whose native language is not English.

Students who expect to concentrate in statistics should have training in college mathematics through differential and integral calculus. The absence of such training is a deficiency that must be made up during the first year of residence. At least one year of professional experience in teaching, research, or a related field is highly desirable.

Students who want to transfer to this program from another University of Iowa program must submit a statement explaining why they want to change programs and why they think 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.

REQUIREMENTS

In addition to the substantive courses in educational measurement and statistics offered
by the division, all students must complete the following related courses.

07C:254 Appraisal in Counseling 3 s.h.
07P:165 Introduction to Program Evaluation 3 s.h.
07P:200 Educational Psychology 3 s.h.
07P:220 Educational Research Methodology 3 s.h.

The student's adviser specifies additional course work in areas appropriate to the student's interests and vocational objectives. These courses typically include additional work in educational psychology and courses offered by other College of Education divisions and University departments.

Students who concentrate in the area of psychology, with the intention of teaching on the college level, are required to take courses in the mathematical foundations of statistics. Those who concentrate in the area of educational measurement and evaluation are advised to take courses in curriculum, counseling, and higher education.

All students must develop familiarity with computer programming techniques and computer software designed for statistical analysis.

Candidates who enter the program without completing an M.A. thesis must complete a substitute project approved by three members of the division faculty. The project must be completed prior to the Ph.D. comprehensive examinations may be written. A minimum of 90 semester hours is required for the degree, including 12 or more semester hours of thesis credit.

Following completion of the major portion of their course work, candidates must write comprehensive examinations. Typically, these consist of three 5-hour written examinations over the fields of applied statistics, educational measurement, and program evaluation, or approved substitute areas such as educational psychology or mathematical statistics. A substitute area generally is one in which the candidate has at least 9 semester hours of course work. In lieu 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 members may seek further evidence of the candidate's command of the three fields. A single decision is rendered on all aspects of the comprehensive examinations.

Counseling Psychology

Doctor of Philosophy

The doctoral program in counseling psychology was granted full accreditation by the American Psychological Association in 1983. Full accreditation was renewed in 1999.

The program’s goal is to prepare doctoral-level counseling psychologists who will promote psychology as a science and contribute to the advancement of the profession. No master’s degree is offered in counseling psychology. The faculty endorses a scientist/practitioner model of training and expects students to become competent researchers and proficient practitioners. Graduates find positions in a variety of settings, including higher education, counseling centers, clinics, private practice settings, and hospitals.

ADMISSION

Applications are complete when the following items have been received:
- the Graduate College application form;
- official transcripts of all previous undergraduate and graduate work;
- an official report of Graduate Record Examination (GRE) General Test scores (the GRE Advanced Test in Psychology is encouraged but not required);
- a personal statement outlining career goals and reasons for seeking advanced training as a counseling psychologist; and
- three letters of recommendation from persons in a position to assess the applicant’s potential for completing the doctoral program.

Preference is given to applicants who meet the following criteria: undergraduate grade-point average above 3.00 (on a 4.00 scale); graduate grade-point average above 3.50; GRE General Test score (verbal plus quantitative) above 1200; undergraduate major, minor, or substantial course work in psychology; and previous research and counseling experience. 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.

The deadline for completed applications is January 15. Admissions decisions usually are made by February 15. All students must begin the program in the fall semester after they are admitted, and all students must study full-time.

REQUIREMENTS

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 semester hours 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. An additional 6 semester hours are required in the area of individual differences.

Statistics and Research Design
07P:243 Intermediate Statistical Methods 3 s.h.
07P:244 Correlation and Regression 4 s.h.
or
07P:246 Design of Experiments 4 s.h.
07P:257 Educational Measurement and Evaluation 3 s.h.

Counseling Psychology Core
07P:223/225 Introduction to Counseling Psychology Practice/Research I-II 6 s.h.
07P:235 Multicultural Counseling 3 s.h.
07P:251 Individual Intelligence Testing 3 s.h.
07P:305 Psychotherapy I: Dynamic and Phnomological Approaches 3 s.h.
07P:306 Psychotherapy III: Career Interventions 3 s.h.
07P:310 Psychodiagnoses 3 s.h.
07P:312 Psychological Diagnosis 3 s.h.
07P:356 Processes and Outcomes in Counseling and Psychotherapy 3 s.h.
07P:365 Psychotherapy II: Cognitive and Behavioral Approaches 3 s.h.
07P:434 Practicum in Counseling Psychology 3 s.h.
07P:453 Advanced Practicum in Counseling Psychology (may be repeated) 1-3 s.h.
07P:465 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 typically is served at the University Counseling Service. Subsequent placements at other sites must have prior approval of the counseling psychology faculty. Students must successfully complete one semester of 07P:434 Practicum in Counseling Psychology before enrolling in 07P:453 Advanced Practicum in Counseling Psychology.

Other Requirements

Elective courses are determined in collaboration with the major adviser.

A research project equivalent to the master’s thesis must be completed prior to the comprehensive examinations. Up to 6 semester hours of credit may be applied to this project. The dissertation research study is planned in collaboration with the doctoral student’s major adviser. Dissertation credit can range from 12 to 15 semester hours.

Students spend a calendar year at 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, successful completion of the master’s equivalency research requirement, and successful completion of practicum requirements. Internships usually require geographic relocation.

Comprehensive examinations are written in three areas: counseling psychology research, counseling psychology practice methods/applications, and counseling psychology ethics/issues.

Students must show appropriate levels of emotional balance and interpersonal skills and act within the American Psychological Association’s Ethical Principles of Psychologists. For more information, contact the program director.

Educational Psychology

Master of Arts

The M.A. program is designed to help students master the core content and methods of educational psychology. Graduates generally are qualified to apply educational psychology
research findings to the solution of problems in a broad range of educational contexts. The Master of Arts is normally a terminal degree.

Students in the M.A. program are expected to complete the degree in two years or less of full-time study. Each student’s progress is evaluated by the faculty after one academic year (two semesters) of study and during subsequent years. Students who do not make satisfactory progress may be required to withdraw from the program.

**ADMISSION**

The grade-point average requirement for admission is the same as that established by the Graduate College, but most successful applicants exceed this standard. Candidates must have taken the Graduate Record Examination (GRE) General Test; successful applicants' total score for the verbal and mathematics tests usually exceed 1000. Applicants who majored in psychology as undergraduates are encouraged to take the Graduate Record Examination psychology test and submit their score. Applicants from other countries whose native language is not English are required to submit acceptable scores on the TOEFL exam. Teaching experience is desirable but not required.

The application deadline for fall semester admission is January 1. The application deadline for spring semester entry is October 1. Admission decisions are announced approximately one month after the application deadline.

Applicants who accept admission or financial aid for the following fall 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 proviso that the offer is void if the applicant accepts and continues to hold on that date a previous offer made by another program listed in Graduate Study in Psychology. This policy is consistent with standards set by the Board of Educational Affairs of the American Psychological Association.

**NONTHESIS PROGRAM REQUIREMENTS**

A minimum of 30 semester hours of course work is required for the degree without thesis. Students develop their programs in consultation with their faculty adviser. A typical program for a full-time M.A. student includes at least 9 semester hours in each of the fall and spring semesters, with the option of summer course work. Students should be able to complete the program in four semesters of full-time study. Depending on choice and availability of courses, students may be able to complete the program more quickly. Students may apply to have equivalent course work from another institution or department substituted for required or recommended courses.

Required courses:
- 07P:143 Introduction to Statistical Methods 3 s.h.
- 07P:200 Educational Psychology 3 s.h.
- 07P:221 The Profession of Educational Psychology 2 s.h.

Recommended courses (minimum of 6 semester hours):
- 07P:106 Child Development (or a more advanced course, such as 07P:206) 3 s.h.
- 07P:111 Introduction to Human Development 3 s.h.
- 07P:112 Life-Span Development (or a more advanced course, such as 07P:212) 3 s.h.
- 07P:201 Human Intelligence 3 s.h.
- 07P:281 Cognitive Theories of Learning 3 s.h.
- Electives 10-16 s.h.

The total semester-hour requirement may be met by taking courses offered by departments University-wide. With the approval of their advisers, some M.A. students complete their programs by electing courses offered outside of educational psychology. Many elect to take more course work in statistics, more advanced course work in educational psychology, or courses in related disciplines. Consult the program description for the Ph.D. degree and lists of courses offered by other University of Iowa departments (see appropriate sections of the Catalog).

**Comprehensive Examination**

A six-hour comprehensive examination is administered by the student services office during the M.A. comprehensive exam period each fall and spring semester. The faculty evaluates each student’s performance using the results of this examination, course work, and other indices of achievement and professional development. The exam covers knowledge and skills typically associated with the required and recommended introductory courses listed for the program. Its contents may be adjusted according to the student's approved program. Students who score poorly in one or more areas may be required to take additional course work in those areas or to complete other remedial activities specified by the faculty. This exam also serves as the program final examination mandated by the Graduate College.

**THESIS PROGRAM REQUIREMENTS**

A minimum of 28 semester hours of course work and at least 2 semester hours of thesis credit are required for the master's degree with thesis. This option is available only to students who initially are accepted into the Ph.D. program and must change their degree objective. Required and recommended courses are the same as those for the M.A. without thesis, except that thesis students also must take 07P:393 M.A. Thesis in Psychological and Quantitative Foundations. An accepted thesis proposal may constitute part of the comprehensive examination.

**Doctor of Philosophy**

The doctoral program 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 in the Ph.D. program are reviewed annually by the faculty. Students must complete a second-year project by the end of their second academic year in the program. Those who do not fulfill this requirement or who otherwise fail to make satisfactory progress may be required to withdraw from the program.

Students who enter the Ph.D. program with a Master of Arts without thesis are required to complete the independent research course sequence and its assigned research project in either their first or second year, as agreed upon admission. Students who have completed an empirical M.A. thesis that is acceptable to the faculty may omit the independent research sequence and second-year project.

**ADMISSION**

The minimum graduate grade-point average and Graduate Record Examination (GRE) requirements for admission are the same as those established by the Graduate College, but most successful applicants have records that exceed these standards. Candidates must have taken the Graduate Record Examination General Test. Successful applicants' total scores for the verbal and mathematics tests must exceed 1000. Applicants who majored in psychology as undergraduates are encouraged to take the Graduate Record Examination psychology test and submit their score. Applicants from other countries whose native language is not English are required to submit acceptable scores on the TOEFL exam. Candidates who do not meet the standards may be admitted conditionally on the basis of other evidence, such as high grade-point average, strong academic preparation, and highly supportive recommendations; however, acceptance under these terms is extremely rare.

Students begin the program in the fall semester. The application deadline is January 1. Applications are reviewed as they are received. Admission decisions are announced approximately one month 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 proviso that the offer is void if the applicant accepts a previous offer made by another program listed in the Graduate Study in Psychology. This policy is consistent with standards set by the Board of Educational Affairs of the American Psychological Association.

**REQUIREMENTS**

The student and his or her adviser plan the program jointly. The degree requires a minimum of 72 semester hours beyond the bachelor’s degree. Some of the required courses listed below encompass substantive areas within educational psychology. Other required courses are an introductory course in educational psychology, a seminar that orient students to educational psychology as a profession and to key readings in the field, a research seminar in which students assist with and eventually design and carry out original research, and several courses in measurement and statistics.

Some requirements may be waived for students who begin the Ph.D. program with a master’s degree or specific course work from another program. Course requirements are as follows.
All of these:
07P:200 Educational Psychology 3 s.h.
07P:220 Educational Research Methodology 3 s.h.
07P:221 The Profession of Educational Psychology 2 s.h.
07P:230 Research in Educational Psychology (minimum requirement, may be repeated for additional credit, enrollment required in first and second year of program) 1-3 s.h.
07P:257 Educational Measurement and Evaluation Using Standardized Instruments (or equivalent) 3 s.h.
07P:493 Ph.D. Thesis in Psychological and Quantitative Foundations (minimum requirement) 10 s.h.

At least four of these:
07P:212 Advanced Life-Span Development 3 s.h.
07P:206 Advanced Child Development 3 s.h.
07P:270 Cognitive Psychology of Reading 3-4 s.h.
07P:269 Advanced Personality 3 s.h.
07P:281 Cognitive Theories of Learning 3 s.h.
07P:283 Cognitive Development 3 s.h.
07P:335 Advanced Study in Motivation: Laboratory and Classroom Investigations 3 s.h.
Variable Seminars: Educational Psychology I, II, IV, VI arr.
Electives 15 s.h.

At least two of these (or equivalents):
07P:243 Intermediate Statistical Methods 3 s.h.
07P:244 Correlation and Regression 4 s.h.
07P:245 Applied Multivariate Analysis 4 s.h.
07P:246 Design of Experiments 4 s.h.
07P:247 Nonparametric Statistical Methods 3 s.h.
07P:252 Introduction to Multivariate Statistical Methods 3 s.h.

Minor Area Requirement
Students must complete a minimum of 12 semester hours that constitute a coherent program of course work outside the program and beyond the courses listed above. The minor area may be in a foundation discipline, such as psychology, or in another area of education, such as mathematics education, educational philosophy, or program evaluation. Course work must be at the 200-level or above and may span departments and colleges so long as it reflects a plan approved by the student's adviser.

Second-Year Research Project
As part of their second year of participation in 07P:230 Research in Educational Psychology, Ph.D. students are required to complete a research project of modest scope under the direction of a faculty member and must present the work in both oral and written form to the program's faculty and students. First-year Ph.D. students may assist second-year students with data collection and other research activities, and students may design and conduct projects in collaboration with other students. The written report must be completed by the end of the student's second academic year in the program. Students may re-enroll in this course beyond their second year.

Comprehensive Examination
The Ph.D. comprehensive examination in educational psychology emphasizes competence rather than courses. Unlike the master's comprehensive exam, which emphasizes breadth, the Ph.D. exam emphasizes depth in one or more narrowly defined areas of research and theory. Students choose among three options in consultation with their adviser and with the approval of the examining committee, which is made up of five faculty members and is not necessarily the same as the dissertation committee. The options are a review article, an extended research activity, or a traditional comprehensive examination.

School Psychology

Specialist in Education
The Ed.S. option provides course work and supervised field experience in the areas of education and psychology, enabling graduates to qualify for licensure as school psychologists (State of Iowa Endorsement 40).

ADMISSION
The program is open only to Ph.D. students in the school psychology program. All Ph.D. program admission requirements apply.

REQUIREMENTS
The degree requires a minimum of 66 semester hours (the required total depends on students' previous course work). It includes courses in psychological foundations, psychopathological foundations, school psychology, and research methods. Also required are a written comprehensive examination and a research paper prepared in conjunction with 07P:342 Research Project in School Psychology (3 semester hours).

Doctor of Philosophy
The Ph.D. program in school psychology was granted full accreditation by the American Psychological Association in 1992. 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.

ADMISSION
Preference is given to applicants with undergraduate majors in psychology or education, grade-point averages above 3.00, and verbal and quantitative scores above 500 on the Graduate Record Examination (GRE) General Test. The faculty also encourages applications from school psychologists with an M.A. or Ed.S. Application 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 semester admission. Admission decisions usually are made by March 15. The program admits from four to six students each year.

REQUIREMENTS
The program requires a minimum of 105 semester hours. 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 semester hours 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.

The plan of study is developed by students and their academic advisor. Students are required to write comprehensive examinations, carry out a research project equivalent in scope to an M.A. thesis, participate in an internship, and complete a doctoral dissertation through enrollment for a minimum of 10 semester hours in 07P:493 Ph.D. Thesis in Psychological and Quantitative Foundations.

School Psychology Core
07P:224 Prepracticum/Professional Seminar in School Psychology 3 s.h.
07P:237 Practicum in School Psychological Service (minimum 150 hours) 3 s.h.
07P:238 Assessment of Learning Difficulties (taken with 07P:237) 3 s.h.
07P:251 Individual Intelligence Testing (taken with 07P:237) 3 s.h.
07P:263 Consultation Theory and Practice (taken with 07P:337) 3 s.h.
07P:315 Psychodiagnostics: Children and Adolescents 3 s.h.
07P:337 Advanced Practicum in School Psychology (minimum 600 hours) 12 s.h.
07P:352 Seminar: Behavioral Assessment and Evaluation 3 s.h.
07P:366 Organization Development and Change 3 s.h.
07P:380 Practicum in College Teaching (optional) 1-3 s.h.
07P:390 Supervision of School Psychology Practicum/Internship 1 s.h.
07P:437 Internship in School Psychology (one full-time academic year or two half-years) 3 s.h.

Program evaluation course work is required. 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 07P:237 Practicum in School Psychological Service before enrolling in 07P:337 Advanced Practicum in School Psychology.

Instructional Design and Technology

Master of Arts
The M.A. program in instructional design and technology provides students with the basic knowledge and skills to work in educational and training environments such as schools, business and industry, health care, government, and consulting agencies. The program requires
35 semester hours of course work and either a thesis or a project.

ADMISION

Regular admission requires a minimum grade-point average of 2.80 on all previous course work and a score of 500 or higher on both the quantitative and verbal sections of the Graduate Record Examination (GRE) General Test. Applicants who do not meet these requirements but who show compelling evidence of superior ability may be granted conditional admission. Regardless of admission status, all students are expected to maintain a grade-point average of at least 3.00. Applicants should include with their application a personal statement about their interest in the field.

Applications for admission must be received by February 1 for fall semester and October 1 for spring semester.

REQUIREMENTS

The degree requires the following core courses (or approved equivalents).

07P:150 Introduction to Educational Measurement 3-4 s.h.
07P:200 Educational Psychology 3 s.h.
07W:120 Introduction to Instructional Design 3 s.h.
07W:135 Computer Applications for Instruction 3 s.h.
07W:200 Performance Analysis 3 s.h.
07W:220 Advanced Instructional Design 3 s.h.

Students plan the remainder of their programs in consultation with their adviser, choosing course work in one of the following specialization areas: classroom instruction, computer applications, cognition and instruction, training and human resources development, and media design and production. A practicum or internship and a final project or thesis are required. If the thesis option is chosen, 07P:143 Introduction to Statistical Methods is required.

The program culminates with a six-hour set of comprehensive examinations based on core and specialization area courses. The examinations are divided into two- or three-hour parts as follows: general instructional design, two to three hours; area of specialization, two to three hours; other, zero or two hours.

Doctor of Philosophy

The Ph.D. program in instructional design and technology provides a broad background for persons interested in teaching, research, and leadership positions. The 90-semester-hour program emphasizes the acquisition of knowledge and skills needed to expand the understanding of instruction and training and their effects on learning and performance.

ADMISION

Basic requirements are a masters degree, a grade-point average above 3.20 on previous course work, and a score of 500 or higher on both the quantitative and the verbal sections of the Graduate Record Examination (GRE) General Test. Other factors considered are the nature of previous course work and experience, language proficiency, and letters of recommendation. Applicants must include a personal letter with the application, describing their interests in the instructional design field, the Iowa program, and any additional information that may be pertinent. Potential applicants are strongly encouraged to discuss their plans with a faculty member.

Applications for admission must be received by February 1 for fall semester and October 1 for spring semester.

REQUIREMENTS

Course work required for the degree includes the core of the M.A. program or equivalent course work, five research-related courses, and 18 semester hours in one area of specialization: cognition and instruction, computer applications, or training and human resource development. In addition, students must complete 8-9 semester hours of course work in a cognate area outside the College of Education.

Students who have not completed a master’s thesis must complete a formal paper equivalent to a master’s thesis. The paper should be done as early as possible in the doctoral program and no later than the semester before the student takes the comprehensive examination. Students should discuss the paper with their adviser early in the program. The paper must be submitted to and approved by three members of the instructional design and technology faculty before the student can be permitted to take the comprehensive examination.

All students must successfully pass a nine-hour set of comprehensive examinations that cover the core, the research-related courses, and the area of specialization. The examinations are divided as follows: three hours in general instructional design; three hours in the area of specialization; and three hours in statistics, research, and measurement.

The program culminates with the successful preparation and defense of a dissertation.

Financial Support

The division normally employs several advanced graduate students as teaching, research, and production assistants. The appointments are typically half-time for the academic year, and holders are permitted to carry a study and/or research load of up to 12 semester hours per semester. Candidates should address inquiries to the chair of the division.

Other types of graduate assistantships are supported by the Iowa Testing Programs. Duties are varied, including responsibilities such as test development and data analysis. There also are other assistantships supported by the Iowa Testing Programs that are not specific to the programs cited above. Inquiries should be directed to the program directors.

Courses

Psychology, Measurement, Statistics

*Students may receive credit for only two of these three courses: 22S:002, 22S:008, and 22S:025 (same as 07P:025). Credit for 223:002 is given only if the course is taken before 22S:008 or 22S:025 (same as 07P:025).

07P:025 Elementary Statistics and Inference 3 s.h.
Graphical techniques for presenting data; descriptive statistics; sampling distribution models; logic of statistical inference; interval estimation procedures; tests of significance; correlation and prediction. GE: quantitative or formal reasoning. Prerequisite: 22M:001 or equivalent Same as 22S:025.

07P:075 Educational Psychology and Measurement 3 s.h.
Principles of cognitive and social development, learning, memory, problem solving, individual differences, testing; classroom management; their relation to instruction.

07P:080 Psychology of Academic Learning 3 s.h.
Psychological theory, research on overall academic learning; reading, memory, student development, career choice, learning strategies.

07P:101 Methods of Student Assessment 3 s.h.
Development, use, evaluation of student assessment methods; written tests, performance and product assessments, observation, oral questioning, checklist, grading and reporting, administration and use of standardized tests of achievement and other cognitive abilities.

07P:106 Child Development 3 s.h.
Theories, research findings about typical course of child development, differences in development. Junior standing or consent of instructor required.

07P:110 Development in Middle Childhood 3 s.h.
Theories, research on child development from late childhood to early adolescence; physical, cognitive, social, personality, emotional development.

07P:111 Introduction to Human Motivation 3 s.h.
Human motivation theories and issues; practical implications of research findings and relationships between motivation, learning, performance.

07P:112 Life-Span Development 3 s.h.
Survey of life-span development with emphasis on educational applications; infancy, childhood, middle school, adolescence, early, middle, and late adulthood.

07P:120 Psychology of Giftedness 3 s.h.
Theories of learning, child development, motivation; issues unique to gifted education. Same as 07C:120.

07P:121 Assessment of Giftedness and Academic Talent 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 use of various instruments. Same as 07C:121.

07P:122 Math/Science Program 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 07S:122.

07P:125 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 07C:125.

07P:126 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 07C:126.

07P:127 Research and Theory in Talent/Giftedness 1 s.h.
Symposium. Same as 07C:127.

07P:128 Neuroscientific Implications for Giftedness 1 s.h.
Neurology of behavior and neurometabolic disease; the psychology of learning and memory, its application to gifted education.

07P:133 The Adolescent and Young Adult 3 s.h.
Psychological, social aspects of adolescence and young adulthood; emphasis on theory, research, practical applications.

07P:134 Parent-Teacher Communication 1-3 s.h.
Realities of working with parents; interpersonal skills; options for parent support services. Same as 07E:134, 07U:134.
07P:136 Home/School/Community Partnerships 3 s.h.

07P:143 Introduction to Statistical Methods 3 s.h.
Analysis, interpretation of research data; descriptive statistics; introduction to probability, sampling theory, statistical inference (binomial, normal distribution, χ²-distribution models); linear correlation, regression. Same as 22S:102.

07P:148 Bayesian Statistics 3 s.h.
Bayesian statistical analysis with focus on applications; comparison of frequentist and Bayesian model specification; choice of priors, computational methods; hands-on Bayesian data analysis using appropriate software; interpretation of analysis results. Prerequisite: 22S:120 or equivalent Same as 22S:138.

07P:150 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.

07S:155 Survey Research and Design 3 s.h.
Same as 07P:170.

07P:165 Introduction to Program Evaluation 3 s.h.
Models, design, data collection techniques that guide program evaluation; current issues, controversies Same as 07P:165.

07P:193 Special Readings and Projects 3 s.h.
Selected individual study. Senior standing and consent Of instructor required.

07P:195 Topics in Psychological and Quantitative Foundations 3 s.h.
Selected topics in any area of psychological and quantitative foundations offered according to interest and demand.

07P:199 Topical Workshop in Psychological and Quantitative Foundations 3 s.h.
School, educational, and counseling psychology and allied disciplines; for professionals and graduate students in education, mental health, social services, related fields. May be repeated.

07P:200 Educational Psychology 3 s.h.
Psychology of the teaching/learning process; development concepts socil processes, language and thought; individual differences in abilities and achievements; theory and research on reading, writing, mathematics, thinking, studying

07P:201 Human Intelligence 3 s.h.
Psychological foundations of trait and process theories of human intelligence; special abilities; matching ability profiles and educational interventions; ability development through education.

07P:206 Advanced Child Development 3 s.h.
Theories of social and cognitive development; in-depth study Of several current controversies in the field. Prerequisite: 07P:106 or equivalent or consent of instructor.

07P:207 Evaluation of Children with Learning Disabilities 3 s.h.
Same as 070:245.

07P:210 Social Psychology of Disability 3 s.h.
Social psychology of disability; issues in mental/physical disability from individual, societal perspective; advanced research seminar with emphasis on clarifying research, theoretical strategies in psychology of disability. Doctoral student standing and consent of instructor required. Same as 070:250.

07P:212 Advanced Life-Span Development 3 s.h.
Selected theories and research in development across the life span, especially from adolescence through adult life; focus on relevance for instruction and counseling.

07P:220 Educational Research Methodology 3 s.h.
Procedures for planning, conducting, reporting research; evaluation of current methods in educational research Prerequisite: 07P:143.

07P:221 The Profession of Educational Psychology 2 s.h.
Introduction to the discipline and career opportunities in the field; professional ethics, the publication process, career development. Consent of instructor required.

07P:223 Introduction to Counseling Psychology Practice/Research 3 s.h.
Historical, theoretical, professional, scientific traditions associated with counseling psychology; focus on developing a research orientation to the field. Consent of instructor required.

07P:224 Prepracticum/Professional Seminar In School Psychology 3 s.h.
Preparation for practice, historical look at school psychology; current rules; overview of issues, ethics. consent of instructor required.

07P:225 Introduction to Counseling Psychology Practice/Research 3 s.h.
Learning and performance of basic helping skills; integration of these skills with counseling theories, broader counseling strategies; laboratory based. Consent of instructor required.

07P:250 Research in Educational Psychology 3-1 s.h.
Experience in conducting or assisting in educational psychology empirical research project; activities from conceptualization through data generation; preparation and presentation of research report. Minimal standing in educational psychology or consent of instructor required.

07P:243 Intermediate Statistical Methods 3 s.h.
Foundation for more advanced applied courses; logic of statistical inference, χ², and other tests of statistical hypotheses; small sample error theory, interval estimates; introduction to analysis of variance, selected nonparametric methods. Prerequisite: 07P:143 or equivalent. Same as 22S:148.

07P:244 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. Prerequisite: 07P:243 or equivalent. Same as 22S:157.

07P:245 Applied Multivariate Analysis 4 s.h.
Multivariate analyses of variance, discriminant analysis, factor analysis; use of multivariate statistical computer packages. Prerequisites: 22S:132 and 22S:158, or equivalents; and facility with matrix algebra. Same as 22S:161.

07P:246 Design of Experiments 4 s.h.
Theory and methodology in the planning and statistical analysis of experimental studies; testing of hypotheses about linear contrasts among means in simple-factor and multifactor, completely randomized, and repeated measurement designs. Prerequisite: 07P:243 or equivalent. Same as 22S:159.

07P:247 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. Prerequisite: 07P:243 or 22S:120 or consent of instructor. Same as 22S:163.

07P:249 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 07P:252 or equivalent or consent of instructor.

07P:250 Computer Packages for Statistical Analysis 2-3 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: 07P:243 or equivalent, and elementary knowledge of computer programming.

07P:252 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). Prerequisite: 07P:244 or consent of instructor.

07P:255 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: 07P:257 and 07P:257, or equivalents.

07P:257 Educational Measurement and Evaluation Using Standardized Instruments 3 s.h.
Evaluation and use of standardized tests and inventories in individual and group assessment; analyzing reliability, validity, normative data; interpreting scores of achievement, intelligence, aptitude, interests, attitudes, personality; current issues; for counselors, administrators, teachers, measurement specialists. Corequisite: 07P:143 or equivalent.

07P:258 Theory and Technique in Educational Measurement 3 s.h.
Mathematical foundations, principal results, and applications of classical test theory; perspectives on conditional error variance; binormal error model and applications; introduction to generalizability theory; advanced measurement topics.

07P:259 Scaling Methods 3 s.h.
Unidimensional and multidimensional scaling techniques; introduction to available computer programs for scaling; applications in educational and psychological measurement. Prerequisites: 07P:252 or equivalent. Recommended: 07P:249.

07P:262 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: 07P:243 and 07P:257.

07P:265 Program Evaluation 3 s.h.
Theoretical issues and considerations in evaluation of educational and social programs; evaluation design, methodology, metaevaluation; evaluation utilization. Prerequisites: 07P:143, 07P:150, and 07P:165; or consent of instructor.

07P:269 Advanced Personality 3 s.h.
Current research and research methods in the psychology of personality; emphasis on individual differences in personality that have implications for teaching and learning.

07P:270 Cognitive Psychology of Reading 1-3 s.h.
Theories and models of the reading process, its development and of individual and cross-language differences; review of selected research studies from recent, current literature. Consent of instructor required.

07P:281 Cognitive Theories of Learning 3 s.h.
Theories of learning and cognition as they relate to educators; application of cognitive research to subject matter learning (mathematics, science, reading, writing). Prerequisite: 07P:200 or equivalent.

07P:283 Cognitive Development 3 s.h.
Information-processing, constructivist, and neo-Piagetian theories of cognitive development and their educational implications; individual differences in cognitive development.

07P:292 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. Consent of instructor required.

07P:293 Individual Instruction in Psychological and Quantitative Foundations 3 s.h.
Consent of instructor required.

07P:305 Psychotherapy I: Dynamic and Phenomenological Approaches 1-3 s.h.
Major psychodynamic and existential-phenomenological theories of personality; emphasis on implications for psychotherapy.

07P:306 Psychotherapy III: 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.

07P:310 Psychodiagnostics 3 s.h.
Major psychometric instruments in normal and abnormal personality measurement; emphasis on integrating demographic, interview; psychometric data into a coherent conceptualization of client dynamics and functioning; for Ph.D. students. Consent of instructor required.

07P:312 Psychological Diagnosis 3 s.h.
DSM IV categories, related diagnostic issues. Consent of instructor required.

07P:320 History and Systems of Psychology 3 s.h.
Philosophical underpinnings of psychology, early systems in psychology, developments in the 20th century.

07P:331 Seminar: Educational Psychology I: Current Topics 3 s.h.
Intensive investigation of a specific research topic. Consent of instructor required.

07P:335 Advanced Study In Motivation: Psychological and Quantitative Foundations 3 s.h.
Contemporary theories of human motivation used to conceptualize and design experiments in the laboratory and held studies for the classroom; theoretical and applied.
07P:350 Seminar in Evaluation 2-3 s.h.
In depth examination of selected topics. Prerequisites: two courses in evaluation, including 07P:250 or consent of instructor.

07P:354 Seminar: Experimental Approaches in Counseling Research arr.
Application of experimental methodology to study of counseling and vocational phenomena. May be repeated. Consent of instructor required.

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.

07P:356 Processes and Outcomes in Counseling and Psychotherapy 3 s.h.
Advanced knowledge of the state of process and outcome research on psychotherapeutic procedures. Ph.D. candidacy in appropriate field required.

07P:358 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: 07P:245 and 07P:257 or consent of instructor.

07P:365 Psychotherapy II: Cognitive and Behavioral Approaches 3 s.h.
Major theoretical and behavioral theories of personality and psychotherapy; emphasis on implications for clinical practice.

07P:375 Topics in Educational Measurement and Statistics 1-3 s.h.
May be repeated.

07P:380 Practicum in College Teaching arr.
Supervised college teaching experience in courses related to major academic areas, in collaboration with faculty course instructors.

07P:385 Teaching and Learning in Higher Education 3 s.h.
Current theoretical and empirical literature on teaching and learning in higher education; emphasis on development of effective teaching practice. Same as 07U:385.

07P:393 M.A. Thesis in Psychological and Quantitative Foundations arr.
Consent of instructor required.

07P:394 Supervised Research in Counseling Psychology 1-3 s.h.
Supervised research in counseling services. Consent of instructor required.

07P:434 Practicum in Counseling Psychology 3 s.h.
Supervised practice in counseling services. Consent of instructor required. Prerequisites: 07P:223 and 07P:225, or equivalents.

07P:450 Practicum in Program Evaluation arr.
Supervised experience in designing and implementing components of program evaluations. Consent of instructor required. Prerequisites: two courses in program evaluation, including 07P:265, or consent of instructor.

07P:453 Advanced Practicum in Counseling Psychology 1-3 s.h.
Prereq. Supervised work in counseling services. May be repeated. Consent of instructor required. Prerequisite: 07P:434 or equivalent.

07P:455 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: 07P:246 or 07P:258, or consent of instructor.

Consent of instructor required.
07W:220 Advanced Instructional Design 3 s.h.
Theory, models, and topics in instructional design; application to major project. Consent of instructor required. Prerequisites: 07W:120 and 07W:200.

07W:231 Adult Development and Learning 3 s.h.
Research and theory on adult development and learning, ages 30-90 and older; emphasis on implications and applications for education, training.

07W:234 Advanced CAI Development 3 s.h.
Theory and development of multimedia programs that use video, CD-ROM, computer animation, digital audio; emphasis on team-development of software. Consent of instructor required. Prerequisite: 07W:209.

07W:245 Instructional Computer Simulations 3 s.h.
Theory and development of computer-based simulations, games; research on design characteristics and effectiveness; design, development, evaluation of simulation software by student teams. Consent of instructor required. Prerequisite: 07W:234.

07W:263 Consultation Theory and Practice 2-3 s.h.
Analysis of consultation theories and practices from the related fields of instructional design, counseling, school psychology. Prerequisite: 07W:120. Same as 07C:263, 07P:263.

07W:269 Survey of Research in Instructional Design arr.
Current theory and empirical research in instructional design; comprehensive overview. Consent of instructor required. Prerequisites: 07P:143 and 07W:120.

07W:293 Independent Study: Instructional Design for Majors arr.
Investigation in students' areas of concern. Consent of instructor required.

07W:366 Organization Development and Change 3 s.h.
Theories, strategies, and issues in organizational development and change. Same as 07C:366, 07P:366.

07W:370 Practicum in Instructional Design and Technology arr.
Supervised experience in an applied setting. Consent of instructor required.

07W:371 Internship in Instructional Design and Technology arr.
Supervised administrative and other nonteaching experience in public schools, social agencies, higher educations or industry. Consent of instructor required.

07W:387 Topical Seminar in Instructional Design and Technology arr.
May be repeated. Consent of instructor required.

07W:391 M.A. Project in Instructional Design and Technology Project for the M.A. arr.

07W:393 M.A. Thesis in Instructional Design and Technology Consent of instructor required

07W:493 Ph.D. Thesis in Instructional Design and Technology Consent of instructor required
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Dean: Anthony L. Hines
Associate dean, research and graduate studies:
A. Jacob Odgaard
Associate dean, academic programs:
Gary W. Fischer
Director, Center for Computer-Aided Design:
Kyung K. Choi
Director, Iowa Institute of Hydraulic Research:
Virenda C. Patel
Codirectors, Iowa Spine Research Center:
Vijay K. Goel, Leon J. Grobler
Degrees: B.S.E., M.S., Ph.D.
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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 is organized into six departments and three research units. The six departments are biomedical engineering, chemical and biochemical engineering, civil and environmental engineering, electrical and computer engineering, industrial engineering, and mechanical engineering. Each department offers undergraduate and graduate degree programs.

The three research units are the Iowa Institute of Hydraulic Research, the Center for Computer-Aided Design, and the Iowa Spine Research Center.

Undergraduate Programs

The College of Engineering offers programs leading to the Bachelor of Science in Engineering (B.S.E.) degree in the major fields of biomedical engineering, chemical engineering, civil engineering, electrical engineering, industrial engineering, and mechanical engineering. These programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology.

Programs leading to the Master of Science and Doctor of Philosophy degrees are offered in the fields of biomedical engineering, chemical and biochemical engineering, civil and environmental engineering, electrical and computer engineering, industrial engineering, and mechanical engineering.

Any of the undergraduate programs offered by the College of Engineering may be combined with a program leading to a bachelor’s degree in the College of Liberal Arts or a second bachelor’s degree in the College of Engineering. In addition, a combined bachelor’s/master’s degree program is available through each of the engineering majors and the Graduate Program in Urban and Regional Planning (see “Urban and Regional Planning” in the College of Liberal Arts section of the Catalog). These combined degree programs usually may be completed in about five years. In addition, a minor in the Tippie College of Business or a minor or minors in any degree-granting departmental or approved program in the College of Liberal Arts may be combined with any of the undergraduate programs offered by the College of Engineering.

Engineering students also may pursue a certificate in technological entrepreneurship. The undergraduate programs in biomedical, chemical, civil, electrical, industrial, and mechanical engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET).

Four-Year Graduation Plan

College of Engineering students who choose to participate in the University’s Four-Year Graduation Plan must be admitted on schedule and complete specified courses in the first year in order to stay on the plan. They must work closely with their adviser to make sure they know what requirements must be met and the appropriate sequences in which to take courses.

The agreement holds both the student and the University responsible for clearly defined actions to ensure graduation within four years. Since changes in a student’s interests may lead to changes in goals or majors, there is no penalty for withdrawing from the four-year graduation plan. For more information, contact the College of Engineering’s Student Development Center.

Academic Recognition

Honors Program

The College of Engineering Honors Program provides special recognition for outstanding undergraduate students who demonstrate exceptional accomplishment through research, directed independent study, teaching internships, or other approved nongraded enrichment activities. Honors students participate in a college-wide honors seminar with faculty and other honors students. Junior and senior engineering students with college and cumulative grade-point averages of 3.20 and higher are eligible to apply to the program. Successful completion of departmental requirements leads to a B.S.E. with honors, which is recorded on the student’s University academic record.

First-year and sophomore students interested in honors are encouraged to participate in the University Honors Program, which provides access to all of the services offered by the Shambaugh House Honors Center. Students also are encouraged to join the Association of Iowa Honors Students, which sponsors a variety of social and educational activities each year. Engineering students are the second largest collegiate group in the University Honors Program.

For more information or to apply, contact the college’s Student Development Center.

Graduation with Honors

High scholastic achievement is certified in two ways; graduation with distinction based on grades only, and graduation with honors based on both grades and exceptional accomplishment. To be eligible for graduation with honors, students must be recommended by their major department, approved by a selected honors committee and the director of the honors program, and complete honors requirements.

Graduation with Distinction

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 averages for all college-level study undertaken up to their final registration.

To be eligible to graduate with distinction, students must take their final 60 semester hours of study in residence at the college and must have completed at least 45 semester hours of study in the college before their final registration. Students in the combined engineering/liberal arts program are eligible for this recognition regardless of the college in which they complete their residency requirements.

Dean’s List

Undergraduate students who achieve a grade-point average of 3.50 or higher on 12 or more semester hours of graded work (excluding UI Guided Correspondence Study courses) during a given semester and who have no hours of 1 (incomplete) or 0 (no grade reported) during the same semester are recognized by inclusion on the Dean’s List for that semester.

President’s List

Undergraduate students who achieve a grade-point average of 4.00 on 12 or more semester hours of graded work and who have no hours of 1 (incomplete) or 0 (no grade reported)
Degree Requirements

The Bachelor of Science in Engineering (B.S.E.) degree requires a minimum of 128 semester hours of credit, including satisfaction of the specific requirements of the engineering program as described in the following sections. Candidates for the B.S.E. degree must have completed the College of Engineering for at least the last 30 semester hours, or 45 of the last 60 semester hours, or a total of 90 semester hours. They must have a grade-point average of at least 2.00 on all college work used to satisfy the degree requirements as well as all work undertaken at The University of Iowa. In addition, candidates must have completed 22M:035 Engineering Calculus I and 22M:036 Engineering Calculus II, or their equivalents, with a grade of C- or higher in each course.

Students who wish to be considered for graduation must file an application for degree with the Office of the Registrar before the deadline date during the session in which the degree is to be conferred.

Students who do not graduate on the date indicated in the application must file another application for a degree for the next applicable session. Students do not need to be registered to apply for a degree.

Admission Requirements

To be considered for admission to the College of Engineering as first-year students, applicants 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 geometry, one-half year of trigonometry, and one-half year beyond trigonometry; 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.

Generally, the college recommends that applicants have an ACT composite score of 24 or higher; an ACT math score of 24 or higher; class rank in the top 30 percent; and strong background in math and science. Involvement in extracurricular activities also is desirable.

Students who do not meet the admission criteria or who can show extenuating circumstances are reviewed individually by the College of Engineering. Special attention is given to applicants’ performance in math and science courses. Extracurricular involvement is also considered.

A high school computer programming course is highly recommended.

Students who are unsure whether to pursue a degree in engineering or a degree in liberal arts are strongly encouraged to begin in engineering if they meet the admission requirements.

Transfer applicants must have completed the same high school course 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, with a grade-point average of 2.50 or higher and no grade lower than a C in these foundation subjects. Transfer students must have completed Calculus I and the equivalent of either Principles of Chemistry I or Introductory Physics I (the first semester of chemistry designed for majors, or the first semester of calculus-based physics). Overall grade-point average is considered in transfer applications.

First-year and transfer applicants who do not meet the foreign language requirement may be admitted on a conditional basis for a maximum of four regular semesters in order to complete two semesters of an introductory, college-level foreign language.

Students who do not meet the other high school course requirements may be admitted upon special review by the College of Engineering, and 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 math grades and standardized test scores, but who are deficient by one unit in mathematics, may be required to complete a course such as 22M:009 Elementary Functions before enrolling in the first engineering calculus course.

Courses taken at The University of Iowa to make up deficiencies do not count toward graduation. For more information about making up specific unit deficiencies, consult with the college’s Student Development Center.

Academic Advising

Undeclared engineering students are advised by the academic adviser in the Student Development Center. Engineering students who have declared an academic program are advised by faculty advisers assigned to that program. Students may request a change of adviser when it is deemed appropriate. All students are required to have a conference with their advisers before registering.

Undergraduate Curriculum

The faculty of each engineering program has established a set of required and elective courses that must be satisfactorily completed as part of the requirements for a degree in that program. The established set of courses is known as the curriculum for that program. General guidelines for establishing the course requirements in each program are provided by the national accrediting body, the Accreditation Board for Engineering and Technology (ABET).

The purpose of the curriculum in each program is to prepare students for the practice of engineering in that program.

Curriculum Stems

The curriculum for each program is divided into four major curriculum stems: mathematics and basic sciences; engineering sciences; engineering design; and humanities and social sciences. In addition to the four major stems, there are a few general background courses that fall outside of the stems. These courses are scheduled in the first year. They include Engineering I and II and Rhetoric, which is a first-year course in writing, speaking, and critical reading. The Engineering I and II courses cover a breadth of topics from engineering as a profession to computer-aided graphics.

All of the courses in the curriculum stems are sequenced and integrated in meaningful patterns so that students better 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 in each engineering program are based. This stem includes a minimum of five courses in mathematics and two each in chemistry and physics. The faculty of each engineering program has specified at least one additional mathematics or science course beyond these minimum requirements that provides a base appropriate for that major.

ENGINEERING SCIENCES

The second curriculum stem, engineering sciences, builds upon the math and science stem in order to bridge from fundamental principles to applications and creative practice. The engineering science courses use the underlying principles learned in the mathematics and basic science courses to understand and predict the behavior of idealized models of real components or systems encountered in engineering. These courses include statics, thermodynamics, and electrical circuits, as well as other engineering courses relevant to each major.

ENGINEERING DESIGN

Engineering design, the third curriculum stem, is the process of devising a system, component, or process to meet desired needs. It is a decision-making process, often iterative, in which the basic sciences, mathematics, and engineering sciences are applied optimally to convert resources to meet a stated objective. The design process includes the establishment of objectives and criteria, synthesis, analysis, construction, testing, and evaluation. Essential to the design process is the inclusion of realistic constraints such as economic factors, safety, reliability, aesthetics, ethics, and social impact.

HUMANITIES AND SOCIAL SCIENCES

The fourth stem involves course work in the humanities and social sciences. This stem serves to engender an appreciation for and understanding of society and culture.

First and Sophomore Years

Approximately one-third of the course requirements in each engineering program are common to all engineering majors. These common course requirements constitute a core program. Most of the courses in the core program are scheduled in the first and sophomore years, along with a few program-specific courses. Hence, students generally may postpone making a decision about

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which engineering major to pursue or may change their engineering major through the first year with minimal loss of time or credits.

Exceptions to the common first year are biomedical engineering and chemical engineering, both of which require a second chemistry lecture course during the second semester of the first year. By careful planning, undecided engineering majors may schedule the common courses and postpone the decision about a major until as late as the end of the third semester. However, because of prerequisite sequencing, such delays may result in an extra semester or a summer session. The curriculum for each engineering program is listed in the sections devoted to each major in this section of the Catalog.

The following are first-year courses that are common to all engineering curricula. (Not all students complete all of these courses in the first year.)

First Semester
004:013 Principles of Chemistry I 3 s.h.
010:003 Accelerated Rhetoric 4 s.h.
22M:035 Engineering Calculus I 4 s.h.
057:005 Engineering I 3 s.h.
Humanities or social science elective 3 s.h.
A first-year seminar 0 s.h.

Second Semester
004:016 Principles of Chemistry Lab 2 s.h.
22M:036 Engineering Calculus II 4 s.h.
22M:040 Matrix Algebra for Engineers 2 s.h.
029:017 Introductory Physics I - 4 s.h.
057:006 Engineering II 3 s.h.

Principles of Chemistry II (004:014) is recommended during the second semester for students who are biomedical or chemical engineering majors. Students in these majors usually postpone taking 22M:040 Matrix Algebra for Engineers until the first semester of the sophomore year. Students pursuing a major in industrial engineering should review the social science requirement specified for that major before selecting any social science courses.

The above list of courses that are common for all the engineering majors assumes that entering first-year students qualify for the advanced rhetoric class, 010:003. Students who do not meet the eligibility requirement for 010:003 are required to complete the two-course sequence 010:001-002 Rhetoric I-II, for a total of 8 semester hours. However, only 4 semester hours may be applied toward the degree requirement for rhetoric.

Credit earned for courses below the level of the beginning courses specified in each engineering curriculum appears on a student’s grade report and permanent record but is not used to satisfy any electives or required courses for an engineering degree. Examples of courses in this category besides 010:000 Rhetoric I include mathematics courses 22M:000-020, chemistry courses 004:005-008, and physics courses 029:004-015.

For undecided engineering majors who want to postpone selecting an engineering major beyond the first year, a third semester of courses common to all the majors could include the following.

Third Semester
22M:041 Differential Equations for Engineers 3 s.h.
029:018 Introductory Physics II 4 s.h.
057:007 Statics 2 s.h.
057:008 Electrical Circuits 3 s.h.
057:009 Thermodynamics I 3 s.h.

Students pursuing three semesters of courses common to all majors may encounter a delay in graduation because of scheduling problems for program courses that require sequencing or that are offered only once a year.

Humanities and Social Sciences Requirements

Students choose 16 semester hours of humanities and social science courses from approved departmental areas. A minimum of 6 semester hours of humanities course work must be chosen from one of the approved humanities departments; at least 3 of the semester hours must be in advanced (100-level) course work.

A minimum of 6 semester hours of social science course work also is required, all of which must be from the same approved department, with at least 3 semester hours in advanced (100-level) course work.

Courses that are primarily mathematical or scientific in nature and those designed specifically to develop introductory language skills or speaking, writing, artistic, or music skills are not acceptable as social science or humanities electives.

Approved humanities course work is offered by the following departments, programs, and schools: African American world studies, American studies, art and art history, Asian languages and literature, communication studies, English, history, linguistics, music, philosophy, religion, theatre arts, women’s studies, and literature, science, and the arts. Advanced courses from any foreign language department also may satisfy the humanities requirements.

Approved social science course work is offered by the following departments, programs, and schools: anthropology, economics, geography, journalism and mass communication, political science, psychology, social work, sociology, urban and regional planning, and women’s studies.

For specific information regarding approved courses, contact the Student Development Center. Credit may be earned by examination. See “Credit by Examination,” later in this section.

Combined Engineering/ liberal Arts Program

Students may earn two University of Iowa baccalaureate degrees in a combined program in the Colleges of Engineering and Liberal Arts. 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. (Bachelor of Fine Arts), or B.M. (Bachelor of Music) by the College of Liberal Arts.

Students in this combined program usually are able to meet the baccalaureate degree requirements of both colleges in about five academic years. The exact length of time necessary to complete the program is determined by the major areas of study selected in each college. Students who enter the combined degree program are assigned two faculty advisers, one in their major department in the College of Engineering and the other in their major department in the College of Liberal Arts.

To enter the combined degree program, students must be eligible for admission to the College of Engineering. They also must be approved for candidacy in the combined degree program by the College of Engineering and must be admitted to both the College of Engineering and the College of Liberal Arts. Students who enter the program are required to complete the General Education Program requirements and the requirements for both majors. Liberal arts and engineering high school course or unit requirements for admission apply to combined degree program applicants.

It is crucial that students enroll in the proper mathematics and engineering courses early in their course of study to expedite the completion of their program. The specific engineering courses taken by students varies according to the engineering major selected. Since courses in natural sciences, mathematics, humanities, and social sciences are accepted regularly for credit by both colleges, in many cases students satisfy the requirements of both colleges by taking a particular course.

To qualify for both degrees in the combined degree program, candidates must complete an overall total of 158 semester hours of credit, including at least 30 semester hours of courses offered by the College of Engineering and at least 30 semester hours of courses offered by the College of Liberal Arts. Students completing the combined degree program must receive both degrees simultaneously. Information about specific requirements is available from the Student Development Center.

Combined B.S. in Engineering/M.S. or M.A. in Planning

A program combining a bachelor’s degree in engineering with a master’s degree in urban and regional planning has been developed for students who want to pursue a career in planning in either the public or private sector. Planning encompasses the development of alternatives to improve the quality of life in cities and regions.

Planners devise courses of action in response to a variety of problems and opportunities and assess the likely outcome of these actions. They are involved in diverse fields such as public transit, low-income housing, neighborhood preservation, environmental protection, infrastructure finance, downtown revitalization, social services, and economic development.
Students in the program may acquire a B.S. in engineering and an M.A. or M.S. in planning in a total of five or more academic years. Students should apply for the joint program either when they apply for admission to the College of Engineering or before they complete their sophomore year following matriculation. A letter requesting admission to this program should be submitted by the student to the College of Engineering.

Admission to this program does not guarantee admission to the Graduate College, which is required in order to complete the degree requirements in the planning program. Hence, students in this combined degree program should be aware of the admission requirements for the graduate planning program and should be prepared to meet these requirements when they apply for admission to the program (near the time when they are completing the B.S.E. degree requirements).

The curriculum is based on the philosophy that planners must develop the theoretical and analytical skills that permit them to identify issues and recommend alternate ways of resolving these issues. In addition, planners must develop the professional skills (e.g., report writing, presentations and briefings, computer literacy, team management) that allow them to function effectively in various organizational and political environments. Students become well versed in topics such as economic theory, quantitative methods, information presentation techniques, and approaches to citizen involvement.

At the heart of The University of Iowa planning program is an integrated core curriculum. Its purpose is to provide a rigorous foundation for the analysis of public and social issues. The core program is completed by engineering students in the last two years of the undergraduate program. Sectoral majors (areas of concentration) are organized around public policy problem areas. They include transportation, housing and community development, environmental quality, urban infrastructure, and economic development. Students fulfill the sectoral major requirement by completing 9 semester hours of credit in courses offered by various departments and schools of the University, including the planning program and the College of Engineering. They complete these courses after graduating from the College of Engineering and while enrolled in the graduate program in urban and regional planning.

Each student is assigned an adviser from engineering and one from planning. During the first four years of the program, students work primarily with their engineering adviser. For the fifth year, students confer with their graduate planning adviser.

Two Bachelor’s Degrees in Engineering

Recent College of Engineering graduates and current students may earn two bachelor’s degrees in engineering. The requirements for the second degree are to complete, with a grade-point average of 2.0 or higher, at least 30 additional semester hours of residence course work beyond the requirements of 128 semester hours for the first degree program. The additional semester hours must include all courses required by the program selected for the second degree, including the senior-level design course sequence of the second degree program as well as any specific social science elective requirements. The technical electives selected for the second degree program 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 plan of study, which must be approved by the faculty of the second degree program and submitted to the Student Development Center, before they may initiate course work in the second degree program. The proposed academic plan of study 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. The approved plan must be submitted to the Student Development Center and placed in the student’s permanent file before the student begins course work in the second program. Any changes to the plan must be approved by the student’s faculty adviser in the second program and by the department chair of that program (the college petition form may be used for this purpose) and submitted to the Student Development Center for inclusion in the student’s permanent file.

3 + 2 Dual Degree with Northern Iowa

The 3 + 2 dual degree program leads to a B.S. in applied physics from the University of Northern Iowa (UNI) and a B.S.E. degree from The University of Iowa. It requires approximately three years of study at UNI followed by approximately two years of study at Iowa.

Students interested in the program are guaranteed admittance to The University of Iowa portion of the program if they have a grade-point average of at least 3.00 (B average) in all course work and in the chemistry, mathematics, and physics courses required by the University of Northern Iowa physics department.

During the first three years of the program, students complete at least 90 semester hours of course work at the University of Northern Iowa. They must successfully complete courses in each of the following areas: chemistry, mathematics through differential equations, physics to satisfy the applied physics major requirements, and courses to satisfy the General Education requirements. Credit for courses passed with a grade of C or better is transferred to The University of Iowa as credit for equivalent courses there.

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.

Minors

Students graduating from the College of Engineering may earn a minor in the College of Business Administration or a minor or minors in any degree-granting department or approved program in the College of Liberal Arts. A minor in another college may be earned by satisfying requirements established by the college offering the minor. A notation of the minor is entered on the student’s permanent record.

Engineering students are encouraged to pursue a minor.

Students must inform the Office of the Registrar of their fulfillment of minor requirements when they apply for a degree. This assures that the minor designation is included on their transcript.

Minor in Business Administration

Requirements for this minor are two economics courses (06E:001 and 06E:002), two accounting courses (06A:001 and 06A:002), a marketing course 106M:1001, a management course (06J:048), a finance or engineering economy course (06E:100 or 057:014), a legal course (06J:047), and a computer course (06K:070). Students may consult the Undergraduate Programs Office in the Tippie College of Business for alternate ways of satisfying the computer course requirement. In addition to these courses, students are required to complete a calculus course and a statistics course.

Engineering majors satisfy the mathematics and statistics requirements with courses 22M:035 and 22S:039. A grade-point average of at least 2.00 in courses applicable to the minor is required. In addition, students must complete at least 15 semester hours of courses for the minor in residence at The University of Iowa. For more information about the business minor, contact the Undergraduate Programs Office in the Tippie College of Business.

Minor in liberal Arts

Requirements for this minor are a minimum of 15 semester hours in the minor department, at least 12 of which are in advanced courses at The University of Iowa and acceptable to the department. Students should confer with the minor department to identify acceptable courses. Students must achieve a grade-point average of at least 2.00 in the courses applicable to the minor. Courses to be counted toward the minor may not be taken pass/nonpass.

Certificate in Technological Entrepreneurship

The College of Engineering and the Tippie College of Business offer a joint program leading to a certificate in technological entrepreneurship. The program entails study of
the entrepreneurial process as it relates to technology. The certificate program is designed not only for students who intend to start and/or operate their own business but for any student interested in gaining a better understanding of the entrepreneurial process. The range of electives in the program permits students to tailor areas of specialization to their individual interests.

Interested students must declare their intention to pursue the certificate with the college’s Student Development Center. To receive the certificate, students must receive a degree in engineering with an additional 6 semester hours, for a total of 134 semester hours; maintain a grade-point average of at least 2.00 on all course work taken for the certificate; and take at least 12 semester hours of course work for the certificate at The University of Iowa or in approved study-abroad programs.

Completion of the program’s requirements results in the notation “Certificate in Technological Entrepreneurship” on the student’s transcript. Questions should be directed to the College of Engineering’s Student Development Center.

Cooperative Education and Internship Program

Experiential learning, commonly known as co-ops and internships, gives students hands-on exposure to engineering practice through full-time paid work experience in business, industry, or government. This opportunity allows them to broaden their employment options (many employers hire only students who have co-op or internship experience), earn money to pay for college expenses, and receive transcript notation that professional engineering societies recognize as engineering experience. It also offers a better understanding of what it is like to be an engineer in the professional world.

Three formal co-op and internship options are available to students. The summer internship lasts a minimum of 10 weeks during the summer session. A student may begin a summer internship as early as the first summer following the first year. Another option, the semester internship, might last one semester or be combined with a summer internship to last eight months. Neither student nor employer is obligated to continued collaboration once the internship has been completed.

In the co-op, the student and employer typically participate in three to five sessions that alternate with academic sessions. Students spend a minimum of 12 months in the co-op.

Students must have completed one semester of full-time study in the College of Engineering to be considered for the co-op or internship program. Academic record and class status are considered in the decision to grant permission to participate in a co-op or internship. More information about the co-op and internship programs is available on the College of Engineering web site.

Academic Standards

Maximum Schedule

Course schedules of more than 18 semester hours for a semester or 9 semester hours for a summer session require approval of the advising staff in the college’s Student Development Center.

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 to 29 semester hours earned toward the B.S.E.
Sophomore-30 to 59 semester hours earned toward the B.S.E.
Junior-60 to 89 semester hours earned toward the B.S.E.
Senior-90 or more semester hours earned toward the B.S.E.

Grading System

The college uses a letter grading system with a plus or minus to designate gradations of performance between the letters. The numerical equivalents of the letter grades with the plus and minus options are as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.33</td>
</tr>
<tr>
<td>A (superior)</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 (above average)</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 (average)</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 (below average)</td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td>0.67</td>
</tr>
<tr>
<td>F (failing)</td>
<td>0.00</td>
</tr>
</tbody>
</table>

This grading system is used for all students in both undergraduate and graduate engineering courses. Grades of D- are passing grades; that is, courses completed with grades of D- or better count toward collegiate requirements, with the exception of 22M:355-306 Engineering Calculus I-II and 004:015 Principles of Chemistry I. Grades of A+ have a value of 4.33 in calculating grade-point averages, but averages displayed in University records are truncated so that they do not exceed 4.00.

Academic Probation and Dismissal

Students who do not achieve or surpass the following University of Iowa and semester minimum grade-point averages are placed on academic probation.

First-year (0-29 semester hours earned toward B.S.E.), 1.80
Sophomore (30-59 semester hours earned toward B.S.E.), 1.90
Junior (60-89 semester hours earned toward B.S.E.), 1.95
Senior (90 or more semester hours earned toward B.S.E.), 2.00

Students on academic probation are restored to good standing when they successfully complete a total of 9 semester hours toward an engineering degree either in one semester or cumulatively and their University of Iowa and semester grade-point averages equal or exceed those designated above.

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, or restored to good standing only at the end of the fall and spring semesters. Students who have been on academic probation and have not made reasonable academic progress are not permitted to continue their enrollment without written expectations for their future performance.

Details of the procedure are available from the Student Development Center. Students who do not make satisfactory progress may be dismissed from the college; no prior probationary period is required. Those dismissed from the college for poor scholarship due to extenuating circumstances 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. Appeals should be addressed to the Appeals Committee, Student Development Center.

Students dismissed from the college for poor scholarship may appeal to re-enroll after an interval of at least one academic year. A written appeal for reinstatement must be submitted to the Appeals Committee, 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. Details of the appeals procedure are available from the Student Development Center.

Dropping and Adding Courses

Courses may be added with permission of the adviser and the instructor during the first three weeks of the semester or first one and one-half weeks of the summer session. Courses may be dropped with permission of the adviser 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 adviser, the course instructor, and the Student Development Center. Under no circumstance are students permitted to drop after the beginning of the scheduled final examination period. No course may be dropped with the grade of W more than twice. Special courses that may be repeated are exempt from this rule.
limits on Withdrawing from Courses
Undergraduates receive the mark of W for any course dropped after the third week of the semester or the first one and one-half weeks of the summer session. To curtail excessive registration and dropping of the same course, 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 admitted as degree candidates to the College of Engineering before fall 1991 and after are limited to an overall maximum of five Ws while they are enrolled in the College of Engineering. First-year students entering the University directly from high school with no prior full-time college experience are permitted to exclude Ws they receive during their first two sessions of enrollment.

Engineering students admitted before fall 1991 are limited to a maximum of five Ws beginning with their fall 1994 registration. Ws earned by these students before fall 1994 do not count toward the maximum of five.

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 in the Student Development Center.

Withdrawal of Registration
Students who withdraw their entire registration must consult the staff at the Student Development Center. 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 the Student Development Center staff. Withdrawal cards for students enrolled in the college are signed by the associate dean for Undergraduate Programs.

Pass/Nonpass Option
A maximum of two courses taken on a pass/nonpass (P/N) basis may be applied toward satisfaction of the 16-semester-hour humanities and social sciences requirement. P/N registration must be approved by the student’s adviser and the instructor of the course and must be completed during the first three weeks of a semester or the first two weeks of a summer session. The pass/nonpass option may not be used for courses taken to satisfy the rhetoric requirement.

Students enrolled in courses taught in the College of Engineering may choose to be graded on a pass/nonpass basis under the following conditions:
the signatures of the adviser and instructor must be obtained on the proper form, and the completed form must be submitted to the registrar 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- or higher; the mark of N (nonpass) is given for grades of D+ 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 hours.

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 given 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.

Students who want to exercise this second-grade-only option should register as usual for the course that is to be repeated, then complete a second-grade option form at the Student Development Center. This form must be completed during the session in which the course is repeated—during the first 12 weeks of the semester or the first six weeks of the summer session. (Unless the student follows the procedure stated above, both grades will be counted in the UI grade-point average.)

Under the provisions of this 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 one is used in calculating the grade-point average and 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.

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 (failure) 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) or 0 (no report) that is not replaced by a final grade before the announced deadline during the student’s next regular semester of registration is replaced by a final grade of F (fail). Students with incompletes from the spring semester are exempt from completing the course during the succeeding summer session.

Credit by Examination
Students who have acquired knowledge in subject matter 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 semester hours of credit by examination may be applied toward B.S.E. degree requirements.

CLEP (College-Level Examination Program) credits may be counted toward the lower-level humanities and social science requirements. Specific information is available at the Student Development Center. CLEP credit earned in natural science areas does not count toward the engineering degree.

Credit may be earned through the Advanced Placement Program. Information is available at the Student Development Center.

Credit may be earned 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 respective core-course committees. Students who have failed a core course are not permitted to earn credit by examination for the failed course.

With approval by the departmental faculty, credit in three or fewer courses (totaling no more than 6 semester hours) may be awarded upon successful completion of final examinations in departmental elective courses.

Foreign Language Incentive Program
The Foreign Language Incentive Program enables entering engineering students to earn college credit. Entering students who place into a fourth-semester language course and complete the course with a grade of B- or higher receive credit for the prerequisite third-semester course. Those who place into a fifth-semester or higher level course and complete it with a grade of B- or higher receive credit for the two prerequisite third- and fourth-semester courses. The credit is ungraded but counts 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.

For more information on eligibility and restrictions, consult the Student Development Center.

Mathematics Incentive Program
The Mathematics Incentive Program enables entering engineering students to earn college credit. Entering students who obtain a score of 15 or higher on the MPT Level 3 exam (given during orientation and who enroll in 22M:036 Engineering Calculus II may earn credit for the prerequisite course 22M:035 Engineering Calculus I) if they earn a grade of B or higher. The credit is ungraded but counts 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.
For more information on eligibility and restrictions, consult the Student Development Center.

Credit from Other Colleges

Course requirements in engineering may be satisfied by credits earned from courses taken in other colleges of the University 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, on a course-by-course basis, there is a match in the content and level of the transfer courses, and if the grades earned for such courses are C- or higher. Students who want to satisfy the engineering social sciences and humanities requirements or The University of Iowa rhetoric requirements by transfer work should contact the Student Development Center for details.

Students planning to attend a two- or four-year institution before transferring to the College of Engineering are well advised to discuss the planned transfer with officials at both schools before embarking on a transfer program. The College of Engineering does have recommended course lists for most Iowa community colleges and some four-year colleges. The course lists are available from the Student Development Center.

Once students are enrolled in the College of Engineering, all course work they have taken at other institutions must be preapproved by the Student Development Center if credit for it is to be applied to meet engineering degree requirements.

By policy of Iowa’s State Board of Regents, a student may apply a maximum of 64 semester hours of transfer credit earned at a two-year college toward the 128 semester hours required for the B.S.E. However, transfer credit from a two-year school in excess of 64 semester hours 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- 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 is available in the Student Development Center. The form must be completed by the student and approved by the student’s adviser and by the chair of the academic department in which the student is majoring.

If the petition involves a required engineering core course or a social sciences or humanities course, then it also must be approved by the associate dean on behalf of the college curriculum committee. Substitutions for required engineering core courses should occur infrequently and only under compelling circumstances. Substitutions of courses that are required by the student’s department major are governed by the faculty of that department; approval of these course substitutions is needed only from the faculty adviser and the department chair. All petitions must be forwarded to the Student Development Center for inclusion in the 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 adviser. The mark of R is assigned to students registered for zero credit if attendance and performance in the course are satisfactory; if unsatisfactory, the mark of W is assigned. Courses completed with a mark of R 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 adviser’s signature and must register for 0 semester hours. 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

Regulations dealing with cases of cheating or plagiarism are delineated in Policies and Regulations Affecting Students. In cases of cheating on an exam or quiz, the policy recommends that the instructor reduce the student’s grade, including the assignment of F for the course. When a course grade has been reduced to an F, the 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 student-student collaboration on graded work, which includes homework assignments, 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 the student’s file. Students are notified by the office of the dean of any disciplinary action reported and are informed of appeal procedures if they want to protest the action.

Student Complaints Concerning Faculty Actions

In cases where complaints do not involve alleged student academic misconduct, students with complaints against faculty members first should attempt to resolve the issue with the faculty member. Lacking a satisfactory outcome, the 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 faculty ombudsperson when attempting to resolve a complaint. 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 Activities and Organizations

The College of Engineering student body is organized as the Associated Students of Engineering. This organization provides a mechanism for planning and carrying out activities involving the entire college, such as the student and faculty picnic, the homecoming corn monument, and MECCA Week. The organization also acts on collegewide matters of general student interest.

Engineering students publish their own student journal, Hawkeye Engineer. All positions are staffed by students, with faculty serving only in an advisory capacity.

The following technical societies are represented by University of Iowa student chapters: American Institute of Chemical Engineers, Institute of Industrial Engineers, American Society of Civil Engineers, American Society of Mechanical Engineers, Institute of Electrical and Electronics Engineers, and National Society of Professional Engineers.

A student club of the Society of Automotive Engineers is open to all engineering majors, and a student society of biomedical engineers, which is formally recognized by the University, is open to biomedical engineering majors. 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 their respective fields is recognized by Alpha Eta Mu Beta, honorary biomedical engineering society; Omega Chi Epsilon, honorary chemical engineering society; Chi Epsilon, honorary civil engineering society; Eta kappa Nu, honorary electrical engineering society; Alpha Pi Mu, honorary industrial engineering society; and Pi Tau Sigma, honorary mechanical engineering society.

Student organizations dedicated to providing support and assistance in the development of more equitable enrollments of minorities and women in the college are the Multi-Ethnic Engineering Student Association and the student chapter of the Society of Women Engineers. A local chapter of Theta Tau, a national
professional engineering fraternity, is active in
service to the college and draws its membership
from students throughout the college.

**Professional Registration**

Registration as a professional engineer is
governed by the laws of each state. The
minimum requirements include graduation from
an accredited engineering curriculum of at least
four years, followed by at least four years of
practical experience.

The agency that controls and monitors the
licensing procedure in Iowa is the State of 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 at the University near the
time of graduation. (Graduates of unaccredited
programs must complete at least one year of
professional experience to be eligible to take the
engineering fundamentals exam.) Following
graduation and the successful completion of the
the engineering fundamentals exam, graduates
receive an Engineer-in-Training (EIT) certificate.
The final step in the procedure is to pass the
advanced exam in a specialty area following a
minimum of four years of approved professional
experience. At this point, the graduate engineer
is a registered “Professional Engineer.”

**Graduate Programs**

The general rules and regulations for the
graduate programs are established by the
Graduate College. However, the specific
admission and degree requirements for each
graduate engineering program are included in
the sections devoted to the individual programs.
Also included in those sections is a description
of the financial aid available in each program
and the principal areas of study and research.

**College Facilities**

**Engineering library**

The Engineering Library is a center of college
activity. Its collection includes more than
100,000 volumes and current subscriptions to
525 journals. It offers Internet and CD-ROM
access to main indexes and abstracts, 1 million
patents and 1 million semiconductor datasheets
on CD-ROM, and national and international
standards. The library provides study spaces for
library users.

**Computer Systems and Support**

Computer Systems and Support (CSS) provides
curricular computing at the College of
Engineering. A large network of high
performance Hewlett Packard color graphics
UNIX workstations and NT workstations, along
with extensive commercial and public domain
software, support the full range of engineering
college classes. The college provides the same
type of computer hardware and software that
students will use when they graduate and begin
working as engineers. CSS updates hardware
and software regularly to maintain the best
educational environment.

Engineering and other students who take
engineering courses are provided with an
engineering computing account, which they
keep during their tenure at the college. This
account provides students with electronic mail
and access to the Internet and the World Wide
Web. The college’s computer labs provide
students with more than 300 networked
computers, and large labs are open 24 hours per
day. CSS provides support for student
computing.

**Engineering Design and Prototyping Center**

The Engineering Design and Prototyping Center
(EDPC) provides state-of-the-art technical
resources to University and to private sector
research and development groups for concept
development, project design, full service
machining, and rapid prototype modeling.

**Engineering Electronics Shop**

A full service electronics support facility for the
Engineering College provides design,
construction, repair, calibration, and preventive
maintenance services for both teaching and
research laboratories. There also is an extensive
electronics parts supply store for engineering
students and researchers.

**Engineering Career Services**

Engineering Career Services (ECS) provides
information, guidance, and resources to assist
engineering students develop and achieve their
career goals. Professional staff provide career
counseling, including resume and cover letter
critiques, videotaped practice interviews, and
advice on career decision making and job search
strategies.

The career resources library contains
information on national and regional employers.
Its references include employer directories, job
bank books, and free career publications.
Students are encouraged to participate in
experiential learning opportunities offered
through the Internship and Co-op Program as
early as the summer following their first year.
Job listings for co-ops and internships, part-time
and full-time jobs, resume referral, and
interview opportunities on and off-campus are
available through the office’s on-line recruiting
system, eRecruiting.com. Students are urged to
register for eRecruiting.com during their first
semester on campus. For additional information
about Engineering Career Services, see
“Services and Resources” on the college’s web site.

**Research Units**

**Iowa Institute of Hydraulic Research**

The Iowa Institute of Hydraulic Research (IIHR)
is one of the nation’s premier and oldest fluids
research and engineering laboratories. Its
activities encompass the broad spectrum of fluid
mechanics, engineering and environmental
hydraulics, and hydrometeorology. The IIHR
conducts programs of teaching, together with
basic and applied research, in fluid mechanics
(turbulent shear flows, vortex dynamics, ship
hydrodynamics, and computational fluid
dynamics); environmental flows (pollutant
transport, air- and water-pollution monitoring,
remote sensing of the atmospheric boundary,
layer, groundwater transport and remediation);
hydraulics (river hydraulics, computational
hydraulics, hydraulic structures, and
environmental hydraulics); cold-regions
ingineering (ice-related river hydraulics, ice
mechanics, winter highway maintenance, and
ice modeling); water resources
(hydrometeorology, hydroclimatolgy,
hydrologic remote sensing, experimental
hydrology, integrated watershed modeling, and
environmental hydrology); and history of
hydraulics and fluid mechanics.

Specialized facilities include a high-speed
multiprocessor computer, a large low-turbulence
wind tunnel, vortex-dynamics laboratory,
ship-model towing tank with a wavemaker and
particle image velocimeter (PIV), ice-engineering
laboratories (including an ice towing
tank/model ice basin), computational
fluids/hydraulics laboratory, a mobile
hydrometeorological laboratory (with a
disdrometer and surface energy balance,
radiometric, and meteorological stations), a
dimensionless scanning-elastic lidar, a
differential absorption lidar (DIAL), and a
number of PIV and fiberoptics-based LDV
systems.

High-level involvement of graduate students is
a hallmark of most IIHR projects. This
involvement provides unique opportunities for
valuable research and engineering experience to
students and postdoctoral trainees as part of
their educational programs.

For additional information about the Iowa
Institute of Hydraulic Research, see “Centers
and Institutes” on the college’s web site.

**Center for Computer-Aided Design**

The Center for Computer-Aided Design (CCAD)
is dedicated to advancement and practical
application of simulation-based design and
analysis of mechanical systems. The center’s
updated research program is focused in four
areas: human-system interaction, solid
mechanics, design and optimization, and
kinematics and dynamics. Some specific
technology applications currently under
investigation at the center include meshfree
methods for structural analysis and design
sensitivity analysis, composite materials,
probabilistic mechanics and reliability,
reliability-based design optimization, topology optimization, multidisciplinary design optimization, advanced geometric modeling and CAD, human interaction with advanced technology and automation, human/computer interaction and virtual reality, computational modeling of human performance, mechanisms and robotics, and real-time dynamic simulation for haptic interfaces.

CCAD research activities promote both individual and multidisciplinary approaches to design and engineering analysis, engaging research participants from a variety of academic fields and interest. The center employs a full-time professional staff and a substantial number of graduate research assistants.

CCAD maintains a variety of high-performance computer systems in support of its technology research and development efforts. A 16-processor HP Exemplar S-class supercomputer with 3GB of main memory and over 45GB of local disk space provides resources for extensive engineering analysis capabilities using a wide variety of industry-standard and locally developed software. General computing services are supported with a number of UNIX and Windows NT applications servers connected to centralized file servers. CAD/CAE, software development, virtual prototyping, and virtual environment development applications are hosted on more than 40 state-of-the-art Hewlett-Packard and Silicon Graphics UNIX workstations. Standard desktop, multimedia, and office productivity applications are hosted on a network of more than 40 Pentium II-class Windows NT workstations. In addition, the Center supports access to UNIX resources from a distributed network of X terminals and via X server software on the Windows NT workstations. The Center also supports several Sun workstations for dedicated project development activities and general software porting.

This array of computer resources is networked via a sophisticated, high-bandwidth infrastructure that employs a combination of 100BaseT FastEthernet, switched 10BaseT Ethernet, and shared 10BaseT Ethernet technology in conjunction with a Cisco 7200-series router. The network provides secure, efficient communications from CCAD computing resources to centralized, high-availability, high-reliability file servers with an aggregate capacity in excess of 150GB of data storage.

For additional information on the Center for Computer-Aided Design, see “Centers and Institutes” on the college’s web site.

**Iowa Spine Research Center**

The Iowa Spine Research Center (ISRC) assesses clinical effectiveness and outcome in diagnosing and treating various spinal diseases. It also provides guidance in spinal research and patient care. The center, a unique collaboration between the Colleges of Engineering and Medicine, involves teams of investigators that include engineers, economists, surgeons, research scientists, nurses, therapists, and students.

### Course Numbering System

The title of each course offered by the College of Engineering is preceded by a three-digit prefix and a three-digit suffix separated by a colon.

The second digit of the prefix is 5, which identifies the course as one offered by the College of Engineering.

The third digit of the prefix identifies the engineering core courses or the courses offered by the departments as follows.

- **051**: Biomedical engineering
- **052**: Chemical and biochemical engineering
- **053**: Civil and environmental engineering
- **055**: Electrical and computer engineering
- **056**: Industrial engineering
- **057**: Engineering core
- **058**: Mechanical engineering

The three-digit suffix of a course number identifies the level and type of course. Generally the suffix numbers below 100 designate courses primarily for undergraduates, numbers 100 to 199 designate courses for undergraduates and graduates, and numbers 200 and above designate courses primarily for graduates.

The courses offered by each department are listed in the department’s section by discipline area, starting with the lowest-level course and proceeding to the highest-level course.

A brief description is included for each course. The prerequisites and corequisites listed in each course description are given in terms of the courses offered at this university. Students who do not meet these requirements 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. Such students must obtain the instructor’s consent before registering for the course.

Engineering students may enroll in any course in the College of Engineering if they meet the course prerequisite and corequisite requirements. Undergraduates from other colleges may enroll in engineering courses only by consent of the assistant to the dean. Consent for enrollment in an engineering course is based on space available as well as on whether the students have the mathematics, science, and engineering background necessary to satisfactorily undertake the course work.

### Engineering Core Courses

All of the undergraduate engineering curricula, which are detailed in the following sections, build upon a core program as described in the earlier section entitled “Undergraduate Curriculum.” Course descriptions follow for those courses of the core program that are offered through the College of Engineering.

Not all of the following courses are required for each engineering major. Course requirements in a specific major are given in the curriculum listing in the section for that major. None of the following courses are available to undergraduates from other colleges unless special permission is obtained from the assistant to the dean.

- **057.001**: Engineering Honors Seminar 0 s.h.
  - May be repeated. Admission to College of Engineering Honors Program and sophomore standing required.

- **057.005**: Engineering I 3 s.h.

- **057.006**: Engineering II 3 s.h.

- **057.007**: Statics 2 s.h.
  - Vector algebra, forces, couples, resultants of force-couple systems; Newton’s laws, friction, equilibrium analysis of particles and finite bodies, centroid, moments of inertia, applications. Prerequisite: 22M.035 or 029.017.

- **057.008**: Electrical Circuits 3 s.h.
  - Kirchhoff’s laws and network theorems; dc analysis of passive circuits; first-order transient response; sinusoidal steady-state analysis; elementary principles of circuit design. Corequisite: 22M.006.

- **057.009**: Thermodynamics I 3 s.h.
  - Basic concepts of classical thermodynamics, including first and second laws, reversibility and irreversibility, Carnot cycle, properties of pure substances; closed simple systems and one-dimensional steady-flow open systems; engineering applications. Prerequisites: 004.013 or 029.017. Corequisite: 22M.006.

- **057.010**: Dynamics 3 s.h.
  - Vector calculus, Newton’s laws, 3-D motion of particles and multibody systems, 2-D motion of rigid bodies applications. Prerequisites: 22M.006 and 057.007.

- **057.012**: Linear Systems Analysis 3 s.h.
  - Analysis of continuous and discrete time systems; system classifications: system descriptions in terms of differential or difference equations; frequency domain analysis using Fourier and Laplace transforms; continuous and discrete time domain analysis using convolution. Prerequisites: 22M.041 and 057.009.

- **057.014**: Engineering Economy 3 s.h.
  - Basic concepts of engineering economy: time value of money, cash flow equivalence, depreciation, tax considerations, continuous cash flows, cost accounting overview; main analysis techniques present worth, uniform annual cost, rate of return, benefit/cost ratio, replacement analysis and break-even analysis. Prerequisite: 22M.006.

- **057.015**: Materials Science 3 s.h.
  - Concepts and examples of selection and applications of materials used by engineers; mechanical, electrical, magnetic, and thermal properties that govern a material’s suitability for particular applications; lectures supplemented by laboratory experiments. Prerequisite: 004.013 Corequisite: 22M.005.

- **057.017**: Computers in Engineering 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. Sophomore standing required. Prerequisite: 057.006.
Students who complete the program may pursue traditional career opportunities in industry, such as those rooted in mechanical engineering disciplines, or they may pursue new areas of engineering, such as design and development of biomedical instrumentation, diagnostic aids, life-support systems, prosthetic and orthotic devices, and man-machine systems.

Several engineering college faculty members have joint appointments in the College of Medicine. Both biomedical engineering undergraduates and graduate engineering students participate actively with college faculty members and their colleagues in the life and health sciences on projects of mutual interest.

**Undergraduate Program**

The curriculum outlined below is built on the foundation provided by the College of Engineering core curriculum and has been developed to prepare students for the challenges and opportunities associated with careers in the biomedical engineering profession. The program has been designed carefully to enable students to satisfy the entrance requirements of the Graduate College and, with the selection of a three-course sequence in organic chemistry in the elective courses, the Colleges of Medicine and Dentistry.

**Curriculum**

*The humanities and social science electives must be chosen to satisfy the humanities and social science requirements of the College of Engineering.*

**FIRST YEAR**

**First Semester**

- 004:013 Principles of Chemistry I 3 s.h.
- 010:003 Accelerated Rhetoric (or 0110:001-002) 4 s.h.
- 22M:035 Engineering Calculus I 4 s.h.
- 051:090 BME Freshmen/Sophomore Forum 0 s.h.

**Second Semester**

- 004:014 Principles of Chemistry II 3 s.h.
- 004:016 Principles of Chemistry Lab 2 s.h.
- 22M:036 Engineering Calculus II 4 s.h.
- 029:017 Introductory Physics I 4 s.h.
- 051:090 BME Freshmen/Sophomore Forum 0 s.h.
- 057:006 Engineering II 3 s.h.

**SECOND YEAR**

**First Semester**

- 002:100 Principles of Biology I 4 s.h.
- 22M:040 Matrix Algebra for Engineers 2 s.h.
- 057:041 Differential Equations for Engineers 3 s.h.
- 029:018 Introductory Physics II 4 s.h.
- 051:091 Professional Seminar: Biomedical Engineering 0 s.h.
- 057:007 Statics 2 s.h.

**Second Semester**

- 22M:042 Vector Calculus for Engineers 3 s.h.
- 051:091 Professional Seminar: Biomedical Engineering 0 s.h.
- 057:008 Electrical Circuits 3 s.h.
- 057:009 Thermodynamics I 3 s.h.
- 057:010 Dynamics 3 s.h.
- 072:154 Biomedical Engineering Physiology 4 s.h.

**JUNIOR YEAR**

**First Semester**

- 051:040 Biological Systems Analysis I 3 s.h.
- 051:050 Biomechanics 3 s.h.
- 051:091 Professional Seminar: Biomedical Engineering 0 s.h.
- 057:017 Computers in Engineering 3 s.h.
- 057:018 Principles of Electronic Instrumentation 4 s.h.
- *Humanities or social science elective 3 s.h.

**Second Semester**

- 22S:039 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
- 051:070 Biomaterials I 4 s.h.
- 051:080 Biomedical Measurements I 3 s.h.
- 051:091 Professional Seminar: Biomedical Engineering 0 s.h.
- 057:021 Principles of Design I 3 s.h.
- College core elective (see below) 3 s.h.

**SENIOR YEAR**

**First Semester**

- 051:085 Biomedical Engineering Systems Design 3 s.h.
- 051:091 Professional Seminar: Biomedical Engineering 0 s.h.
- Biomedical engineering design elective 3 s.h.
- Three technical electives (one in design) *Humanities or social science elective 4 s.h.

**Second Semester**

- 051:086 Biomedical Engineering Design Project 4 s.h.
- 051:091 Professional Seminar: Biomedical Engineering 0 s.h.
- Two technical electives *Humanities or social science electives 6 s.h.

**College Core Electives**

One of these: 057:012 Linear Systems Analysis 3 s.h.
- 057:013 Materials Science 3 s.h.
- 057:019 Mechanics of Deformable Bodies 3 s.h.
- 057:020 Mechanics of Fluids and Transfer Processes 4 s.h.

**Technical Electives**

- 004:121 Organic Chemistry I 3 s.h.
- 004:122 Organic Chemistry II 3 s.h.
- 004:141 Organic Chemistry Laboratory 3 s.h.
Biomedical Engineering Subtracks

Biomedical engineering majors are encouraged to pursue one of the following three subtrack curricula.

BIOMECHANICS/BIOFLUIDS

Sixth Semester
057:019 Mechanics of Deformable Bodies 3 s.h.

Seventh Semester
051:152 Ergonomics of Occupational Injuries 3 s.h.
057:020 Mechanics of Fluids and Transfer Processes 4 s.h.
057:022 Principles of Design II (or equivalent) 3 s.h.

Eighth Semester
Two of these:
051:151 Intermediate Mechanics of Deformable Bodies 3 s.h.
051:155 Cardiovascular Biomechanics 3 s.h.
051:160 Biotransport Processes 3 s.h.
051:177 Composite Materials 3 s.h.
053:133 Finite Element I 3 s.h.

BIOMATERIALS

Sixth Semester
057:019 Mechanics of Deformable Bodies 3 s.h.

Seventh Semester
051:152 Ergonomics of Occupational Injuries 3 s.h.
051:173 Metals as Biomaterials 3 s.h.
057:022 Principles of Design II (or equivalent) 3 s.h.

Eighth Semester
Two of these:
051:155 Cardiovascular Biomechanics 3 s.h.
051:160 Biotransport Processes 3 s.h.
051:172 Polymers as Biomaterials 3 s.h.
051:173 Metals as Biomaterials 3 s.h.
051:174 Ceramics and Glasses as Biomaterials 3 s.h.
051:177 Composite Materials 3 s.h.
058:110 Computer-Aided Engineering 3 s.h.

BIOELECTRICAL ENGINEERING AND BIOSYSTEMS

Sixth Semester
057:012 Linear Systems Analysis 3 s.h.

Seventh Semester
051:185 Physics and Analysis of Biomechanical Images I 3 s.h.
055:032 Introduction to Digital Design 3 s.h.

Eighth Semester
Two of these:
051:185 Physics and Analysis of Biomechanical Images I 3 s.h.
051:186 Physics and Analysis of Biomechanical Images II 3 s.h.
051:188 Imaging Practicum 3 s.h.
055:033 Introduction to Software Engineering Design 3 s.h.
055:148 Digital Image Processing 3 s.h.
055:164 Computer-Based Control Systems 3 s.h.

Graduate Programs

The aim of graduate study at both the MS. and Ph.D. levels is to educate students in the disciplines of biomedical engineering more deeply and broadly than is possible at the B.S. level. The goal is to enable 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 biomechanics, cardiovascular and fluid biomechanics, biomaterials and tissue engineering, bioinstrumentation, biometrics, biomedical imaging, 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 any particular field may accommodate these preferences 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 M.S. in biomedical engineering requires a minimum of 30 semester hours of course work and research. Students may choose either a thesis or nonthesis program; the latter must include at least 6 semester hours of 200-level courses. Students who choose the thesis program may count between 5 and 9 semester hours of credit for thesis research and writing toward satisfying the 30-semester-hour limit. Either program may yield a terminal degree or an intermediate step toward a 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. The student’s plan of study is reviewed by the committee before the student has completed 18 semester hours of course work. The plan of study is then submitted for review to the department chair.

To earn the M.S., students are required to attain a grade-point average of at least 3.00 on a minimum of 30 semester hours of graduate work and successfully complete the final examination administered by their committee.

The requirements for the M.S. may be completed in one calendar year. However, students with assistantship duties and/or other constraints may need up to two calendar years to complete the degree.

Candidates for either of the M.S. degrees must have satisfactorily completed the following courses or their equivalents as undergraduates or graduates.

058:113 Mathematical Methods in Engineering 3 s.h.
052:154 Biomedical Engineering Physics 4 s.h.

Two biomedical engineering courses chosen from any two of the bioelectrical, biomaterials, and biomechanics areas; acceptable course(s) in each area are as follows.

051:141 Graduate Biological Systems Analysis 3 s.h.
051:150 Graduate Biomechanics 3 s.h.
or
051:155 Cardiovascular Biomechanics 3 s.h.
051:171 Intermediate Biomaterials 3 s.h.

An additional 15 semester hours or more as approved by the student’s adviser.
Individual study plans should provide for as much advanced work as individual aptitude and previous preparation permit.

**Doctor of Philosophy**

The doctoral program, including acceptable transfer credits, requires a minimum of 72 semester hours of graduate work. Of these 72, at least 60 semester hours must be in formal course work taken after the B.S. is awarded, and at least 12 semester hours must be in research and thesis credits. For students entering with an M.S., at least 36 semester hours of formal course work must be completed past the M.S., and at least 12 semester hours must be research and thesis credits. Based on research progress, examination results, or other measures, the student’s graduate committee may require additional formal course work to strengthen perceived areas of weakness.

**Admission**

Admission to the Ph.D. program is conditional until students successfully complete a qualifying examination, which is administered by the biomedical engineering faculty. The decision on whether the student’s performance on this examination is adequate for admission to the Ph.D. program is made by the biomedical engineering faculty.

Admission to Ph.D. candidacy requires a grade-point average of at least 3.25 on all graduate work done 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 adviser’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.

Students who have earned a baccalaureate or postbaccalaureate degree in an engineering curriculum or a curriculum in the mathematical or physical sciences, with a grade-point average of at least 3.00 and an acceptable score on the Graduate Record Examination (GRE) General Test (combined verbal and quantitative score of 1250) are eligible to be considered for admission to Master of Science study in biomedical engineering. Students may, under exceptional circumstances, be considered for conditional admission with a lower grade-point average and GRE General Test scores. Students on conditional status must achieve regular status within 8 semester hours of initial registration by attaining a grade-point average of at least 3.00 at The University of Iowa and regular acceptance by the department faculty. Students who do not meet these requirements are subject to dismissal.

Reference letters, research interests, previous graduate study grade-point average, and other factors also may be considered in making admission decisions.

**Financial Support**

Students qualified for graduate study are encouraged to apply for fellowships and assistantships. Direct inquiries should be made to the departmental chair.

**Special Facilities and Laboratories**

**Required Course laboratories**

There are two laboratories associated with two required undergraduate courses: Biomaterials I and Biomedical Measurements I.

The Biomaterials Laboratory is equipped to test mechanical and thermal properties of biomaterials and thin sectioning of hard tissues and prostheses for histology. This laboratory also is used for 051:173 Metals as Biomaterials and 051:174 Ceramics and Glasses as Biomaterials.

The Biomedical Measurements Laboratory is equipped for measuring biomedical variables of clinical and physiological interest and for designing electronic instrumentation in biomedical engineering.

**Image processing classes** are taught in the Quantitative Electronic Classroom. Jointly sponsored by the Departments of Biomedical Engineering and Electrical and Computer Engineering, this laboratory is equipped with engineering workstations arranged to facilitate collaborative learning.

**Research Facilities and Laboratories**

**BIOMATERIALS LABORATORY**

The Biomaterials Laboratory is equipped to characterize implant materials and biological tissues for their mechanical and thermal properties. Hard tissue histological slide preparations, for both microradiograph and optical, can be made for the study of interactions between bone and implant interactions. Metallographic sample preparations can be made and analyzed under optical microscopes.

The laboratory contains MTS (model 812) materials testing machine with recorder and controller; automatic data acquisition and process computer dedicated to the MTS machine; differential scanning calorimeter (Perkin-Elmer DSC-4 model); Omega x-ray generator with microradiographic attachment; Bronwill thin sectioning saw; Buehler Isomet thin sectioning saw; Buehler metallographic and petrographic grinding and polishing wheels; IR, polarizing, reflection research type microscopes; temperature-controlled bath; Lindberg tube furnace; strain gage attachment and measurement devices; videotape and play equipment; and conventional and vacuum oven with a diffusion pump.

**BIOMECHANICS LABORATORY**

This laboratory is equipped for investigation of the biomechanics of the spine, particularly head and neck trauma and problems related to low back pain. For example, the Selspot II system, a fully-automated three-dimensional motion measuring device, and a force plate are used to study the kinetics of lifting. The Selspot II system also is used in analyzing stability aspects of the ligamentous spine following surgery. An electrodynamic vibrator is available for recording human response in a vibration environment, and there are other devices available for use in investigating the mechanics of head and neck trauma and the protective role of helmets.

**BIOMEDICAL MEASUREMENTS LABORATORY**

This laboratory houses a local area network of seven 486-based Hewlett-Packard computers (IBM-AT compatible) tied to the college’s ICAEN system. Each workstation is centered around a computer with two floppy disk drives, a data translation DT2808 analog input/output board, and a Hercules compatible graphics monitor. Each machine is equipped with real-time data collection software and X-window software.

**GAIT LABORATORY**

This laboratory contains a 30-foot carpeted walkway and equipment for automated acquisition of three-dimensional kinematic and kinetic data characterizing locomotion. Since the system uses strobed infrared light and reflective markers, experiments can be conducted in ambient room lighting.

**HEMODYNAMICS LABORATORY**

The major equipment in the biortransport laboratory consists of a microviscometer with a constant temperature bath, a microcomputer-driven mock circulatory system that simulates physiological pulsatile flow, Millar catheter pressure transducers, electromagnetic flow meter and probes, a two-channel laser Doppler anemometer, and an LSI 11/73 computer with A/D data acquisition and reduction and model human aortic and left ventricular flow chambers. A high-speed movie camera and photographic visualization equipment also reside in the lab. Capabilities of the laboratory include heart valve pulsatile function resting, contraction bubble visualization and analysis, laser Doppler velocity measurement, and qualitative flow visualization.

**IMAGE PROCESSING LABORATORY**

This laboratory is equipped to perform the sophisticated image processing procedures required for varied investigations. Its equipment centers around a cluster of workstations, a video graphics copy device, a video camera that is used as a densitometer, and various other peripherals. The cluster is connected to the University-wide broadband communications system through which data can be transferred from ICAEN, all Academic Computing machines, all hospital computers, and off-campus computers (such as the national supercomputer system).

Many investigators use this facility to analyze cardiac images obtained from cine-CT or ultrasound, and for cross-section of human spines, dental specimens, and so forth.
PHYSIOLOGICAL SYSTEMS LABORATORY

The Physiological Systems Laboratory is located on the University’s Oakdale Research Campus. It is equipped to measure physiological variables in live subjects: blood pressure, heart rate, ECG, EMG, ENG, blood flow rates, respiratory flow rates, blood gases, oxygen and carbon dioxide concentrations, and so forth. Various data collection devices are available, including an eight-channel recorder and a microcomputer used for data collection, reduction, and experimental control. The laboratory also contains bridges, filters, and amplifiers for signal conditioning as well as surgical supplies and facilities.

IODA SPINE RESEARCH CENTER BIOMECHANICS LABORATORY

The spine biomechanics laboratory is fully equipped to perform studies of tissue and/or specimen response to mechanical loads. An MTS Bionix machine (with extended columns) servohydraulic testing machine permits application of uniaxial tension or compression in concert with axial torsion under displacement (rotation) or load control. In addition, the laboratory has a large base plate with T-slots, grips, an environmental chamber, and an independent controller with specialized test control and data acquisition and analysis routines.

An MTS Model 810 servohydraulic testing machine permits uniaxial tension or compression under displacement, load, or strain control. A bank of fatigue testing machines is planned.

An apparatus for testing spinal motion segments for their balance point and buckling behaviors is also available.

TISSUE ENGINEERING LABORATORY

The Tissue Engineering Laboratory has recently been 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, CO2 and N2 tanks have been installed. An Ussing chamber with electrodes and a high impedance Keithley electrometer also are available.

Courses

Special Topics

051:000 Cooperative Education Training Assignment: Biomedical Engineering 0 s.h.

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. Admission to Cooperative Education Program and consent of faculty adviser required.

051:040 Biological Systems Analysis I 3 s.h.

Application of principles of linear system (control) theory to analysis of biological systems; development of computer simulation techniques to study dynamic response of physiological systems. Offered fall semesters. Prerequisites: 22M:041, 057:006, and 072:154.

051:080 Biomedical Measurements I 3 s.h.

Concepts of analog and digital circuit design, with emphasis on circuits for biomedical applications using operational amplifiers, active filter, data acquisition, conversion and interface to microcomputers; patient safety; clinical circuits, laboratory project. Offered spring semesters. Prerequisites: 051:040, 057:017, and 058: Corequisite: 072:154.

051:085 Biomedical Engineering Systems Design 3 s.h.

Design of dynamic systems; case study of ceramic devices and biomaterials; product design and development. Offered fall semesters. Corequisite: 051:070 and 051:080.

051:086 Biomedical Engineering Design Project 4 s.h.

Creative design projects, usually involving actual current problems in biomedical engineering; projects are interdisciplinary, including both engineering and health science faculty cooperation. Senior standing required. Offered spring semesters. Prerequisite: 051:085.

051:090 BME Freshmen/Sophomore Forum 0 s.h.

Presentations by faculty, graduate students, and professionals from the Colleges of Medicine, Dentistry, Law; may include visits to laboratories and industries.

051:091 Professional Seminar: Biomedical Engineering 0 s.h.

Professional aspects of biomedical engineering presented through lectures and discussions by guest speakers, field trips, films, and panels. May be repeated. Sophomore or higher standing required.

051:098 Individual Investigations: Biomedical Engineering 0 s.h.

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. Consent of instructor required.

051:156 Rehabilitation Engineering Design 3 s.h.

Engineering challenges and solutions in rehabilitation and disabilities accommodation; accommodation design addressed through case-study approach. Prerequisites: 051:150, 057:017, and 057:00E. Corequisites: 051:070, 051:080, and 051:021.

Biomaterials

051:070 Biomaterials I 4 s.h.


051:171 Intermediate Biomaterials 3 s.h.

Property-structure relationships of biological and implant materials; tissue response to implanted prostheses. Prerequisites: 051:070 or equivalent.

051:172 Polymers as Biomaterials 3 s.h.

Property-structure relationships of polymers; chemical structure and its relationship to the cross-linking, phase-separation, and crystallization of polymeric materials. Prerequisite: 051:070 or equivalent.

051:173 Metals as Biomaterials 3 s.h.

Property-structure relationships of metals used to fabricate implant materials; their interactions in vivo; their performance and interaction with biological systems. Prerequisite: 051:070 or equivalent.

051:174 Ceramics and Glasses as Biomaterials 3 s.h.

Property-structure relationship of ceramics and glasses used to fabricate implant materials; their interactions in vivo; their performance and interaction with biological systems. Prerequisite: 051:070 or equivalent.

051:177 Composite Materials 3 s.h.


Biomechanic / Biofluids

051:050 Biomechanics 3 s.h.

Principles of solid and fluid mechanics applied to analytical and experimental investigation of cardiovascular and skeletal systems. Prerequisites: 22M:041, 057:007, and 072:154.

051:150 Graduate Biomechanics 3 s.h.

Principles of solid mechanics applied to analytical, experimental investigation of biological systems; emphasis on applications in kinesiology of human musculoskeletal system. Graduate standing required. Prerequisites: 057:010 and 057:019. Corequisite: 072:154.

051:151 Intermediate Mechanics of Deformable Bodies 3 s.h.

Application of equilibrium analysis, strain-displacement relations, constitutive relationships to practical structural systems and elementary plane elasticity problems. Offered fall semesters. Prerequisite: 057:019. same as 053:140, 058:150.

051:152 Ergonomics of Occupational Injuries 3 s.h.

Epidemiology, surveillance systems, ergonomics, biomechanics, physiology, psychology, legal aspects, and cost control. Prerequisite: 051:050 or 051:150.

051:155 Cardiovascular Biomechanics 3 s.h.

Anatomy and physiology of the human cardiovascular system; pressure-flow relationship in arteries, elastic properties of the arterial wall, pulsatile flow dynamics, fluid dynamics past valve prostheses, flow through capillaries, force-velocity studies of heart muscle, force deformation analysis of tissues of the heart. Prerequisites: 051:050 and 072:154.

051:160 Biobehavioral Processes 3 s.h.

Application of momentum, heat, and mass transfer of fluids and structures to biological systems, with emphasis on human beings; fluid mechanics of time-dependent flows in the circulatory system, heat exchange between a biological system and its environment, mass transfer in membranes. Prerequisites: 057:020 and 072:154.

051:250 Advanced Biomechanics 3 s.h.

Anatomy of the human musculoskeletal system, biomechanical basis of joint degeneration, and its evaluation techniques; mechanical properties of hard and soft tissues, kinematics, kinetics of human joints, including those for locomotion; experimental determination of joint forces, spinal biomechanics, design, analysis of artificial joints. Prerequisites: 051:050 and 051:150.

051:253 Clinical Biomechanics of Spine 3 s.h.

Anatomy of the spine (human musculoskeletal system); biomechanical basis of joint forces, surgical procedures for internal fixation; techniques; mechanical properties of spinal ligaments, kinematics and kinetics of the spine, mathematical models of the spine, acetic acid, braces for spinal stabilization, surgical procedures for internal fixation. Prerequisites: 051:050 and 051:150.

051:257 Theory of Viscoelasticity 3 s.h.

Linear theory of viscoelasticity; non-aging materials; Boltzman superposition principle, linear functional; thermodynamic foundations; time-temperature superposition principle; boundary and initial value problems. Prerequisite: 051:151. Same as 053:247, 058:257.

Bioelectrical Engineering

051:140 Biological Systems Analysis II 3 s.h.

Application of principles of linear system (control) theory to analysis of biological systems; development of computer simulation techniques to study dynamic response of physiological systems. Graduate standing required. Corequisite: 072:154.

051:148 Holographic Methods 3 s.h.

Bioelectricity and bioelectronics; holographic methods and applications; digital methods; sensor processing and digital filtering. Prerequisites: 057:020 and 072:154.

051:181 Graduate Biomedical Measurements I 3 s.h.

Design, development, utilization of contemporary electronic instrumentation for measuring biomedical variables of clinical and research interest. Graduate standing required. Prerequisite: a basic electronics course Corequisite: 072:154.
Chemical and biochemical engineering is the art and science of engineering applied to industrial processes in which raw materials are changed or separated into useful products. Chemical and biochemical engineers develop, design, and engineer the complete process as well as the equipment used in it. They choose the proper raw materials and operate the manufacturing facilities efficiently, safely, and economically.

Chemical engineers are involved in addressing society’s needs by finding renewable materials to replace dwindling natural resources, developing environmentally friendly methods to produce products, and seeking ways to manufacture important biochemicals and medicines in a high-quality, cost-effective manner. They are employed by basic industries such as chemicals, petroleum, specialty chemicals, coal, and solvents, as well as consumer-oriented industries such as plastics, food, fertilizers, pharmaceuticals, cosmetics, paints, and synthetic fibers.

Increasing numbers of chemical engineers are employed by new-materials manufacturing companies, biochemical industries, and environmental firms. They engage in research, process and product development, process and plant design, actual production operation, and sales. Many experienced chemical engineers become managers or administrators.

**Undergraduate Program**

The Bachelor of Science in Engineering is designed to meet modern technological requirements. Unlike most other fields of engineering, which are based primarily on physics and mathematics, chemical engineering principles are based on physics, chemistry, mathematics, and biological sciences. Courses in these disciplines, together with the common engineering core courses, provide a strong foundation.

During the junior and senior years, the emphasis is on chemical engineering courses such as heat and mass transfer, chemical reaction kinetics, process safety, unit operations laboratory, process dynamics and control, and process design. Experience in instrumentation, analysis, and design is obtained through an integrated laboratory program in the chemical engineering department. Routine use is made of computer-based data analysis, simulation, and design. A computer cluster is available for students use in the undergraduate lounge. Also included in the curriculum are elective courses in the humanities and social sciences.

Chemical engineering at Iowa gives students a chance to obtain a broad education at the leading edge of technology. It emphasizes fundamental concepts, problem solving, laboratory techniques, and communication skills. Students are encouraged to gain research experience by working in individual laboratories and industrial experience participating in a cooperative education training assignment.

**Curriculum**

*The humanities and social science electives must be selected to satisfy the humanities and social science requirements of the College of Engineering.*

**FIRST YEAR**

**First Semester**

304:018 Chemical Science I 3 s.h.
22M:035 Engineering Calculus I 4 s.h.
052:090 Freshman Seminar: Chemical and Biochemical Engineering 0 s.h.
057:005 Engineering I 3 s.h.
Rhetoric (010:001, 010:002, or 010:003) 4 s.h.
*Social science elective 3 s.h.

**Second Semester**

304:019 Chemical Science II 3 s.h.
040:20 Chemical Science Laboratory 2 s.h.
22M:036 Engineering Calculus II 4 s.h.
029:017 Introductory Physics I 4 s.h.
052:090 Freshman Seminar: Chemical and Biochemical Engineering 0 s.h.
057:006 Engineering II 3 s.h.

**SOPHOMORE YEAR**

304:123 Organic Chemistry I for Majors 3 s.h.
22M:040 Matrix Algebra for Engineers 2 s.h.
22M:041 Differential Equations for Engineers 3 s.h.
029:018 Introductory Physics II 4 s.h.
052:041 Process Calculations 3 s.h.
052:091 Professional Seminar: Chemical Engineering 0 s.h.
057:007 Statics 2 s.h.

**Second Semester**

304:124 Organic Chemistry II for Majors (or advanced chemistry elective from approved list) 3 s.h.
304:142 Organic Chemistry Laboratory for Majors 3 s.h.
052:042 Momentum Transport 3 s.h.
052:043 Chemical Engineering Thermodynamics 3 s.h.
052:091 Professional Seminar: Chemical Engineering 0 s.h.
Humanities elective 3 s.h.

**JUNIOR YEAR**

**First Semester**

304:131 Physical Chemistry I 3 s.h.
22M:072 Elementary Numerical Analysis 3 s.h.
052:044 Heat and Mass Transfer Operations 4 s.h.
052:091 Professional Seminar: Chemical Engineering 0 s.h.
057:008 Electrical Circuits 3 s.h.
057:015 Materials Science 3 s.h.

**Second Semester**

304:132 Physical Chemistry II (or advanced chemistry elective from approved list) 3 s.h.
304:135 Physical Chemistry Laboratory 2 s.h.
22S:039 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
052:045 Chemical Reaction Kinetics 3 s.h.
052:091 Professional Seminar: Chemical Engineering
0 s.h.
052:187 Chemical Process Safety
3 s.h.
057:021 Principles of Design I
3 s.h.

SENIOR YEAR
First Semester
052:095 Process Dynamics and Control in Design
3 s.h.
052:047 Unit Operations Lab I
3 s.h.
052:091 Professional Seminar: Chemical Engineering
0 s.h.
052:108 Introduction to Biochemical Engineering
3 s.h.
*Technical elective (100 level)
3 s.h.
*Technical elective
3 s.h.

Second Semester
052:048 Unit Operations Lab II
2 s.h.
052:091 Professional Seminar: Chemical Engineering
0 s.h.
052:186 Chemical Engineering Process Design
3 s.h.
*Humanities elective (100 level)
3 s.h.
*Humanities or social science elective
4 s.h.
Technical elective
3 s.h.

Graduate Programs
The Department of Chemical and Biochemical Engineering offers curricula leading to the Master of Science and Doctor of Philosophy degrees. Through course work and research, students gain an understanding of the principles of engineering science and then apply those principles to contemporary problems such as energy, environment, biotechnology, and materials. Research is emphasized since most opportunities for graduates are in research and development. All candidates in advanced degree programs are required to assist faculty members in teaching and research as part of the graduate training.

Research
Current research strengths of the Department of Chemical and Biochemical Engineering are in the areas of environmental engineering, separation and bioseparation processes, biochemical engineering, and applied biocatalysis.

Biomedical Research
Chemical Engineering-based biomedical and artificial organ research at Iowa is an interdisciplinary effort with the College of Medicine to investigate medical problems that may be solved through chemical and biomedical engineering practice. A current project with the obstetrics and gynecology department involves the use of membrane and microencapsulation technologies to develop a short-term bioartificial pancreas for diabetic pregnancy. Another project is concerned with development of more effective vaccination methods.

The department’s interdisciplinary collaborations allow chemical engineering students to take advantage of facilities in both colleges. Some of the equipment available for this research includes a refrigerated centrifuge, dissecting microscope, a clean hood, and a Diamond General Oxygen Uptake System. Students have access to the Ob/Gyn core microbiology laboratory, which contains a spectrophotometer and other specialized equipment. In addition, the department shares access to ultracentrifuges, a scintillation counter, HPLC, UV illuminator and photographic equipment, and an automatic plate reader at the Medical Research Facility. Students involved in animal research have access to the University’s Animal Care Unit, which is adjacent to the University of Iowa Hospitals and Clinics.

Environmental Engineering

Environmental Engineering Technologies
Environmental contamination is a major problem facing engineers today. The Department of Chemical and Biochemical Engineering has an active research program in the environmental areas of air pollution, atmospheric chemistry, 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 the Center for Global and Regional Environmental Research, an interdisciplinary research consortium that 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.

Biochemical and Biological Separation Processes
Research in this area is devoted to developing a better understanding and new techniques of separation, especially for biochemistry and fermentation. The department’s long-standing research strengths are fundamentals and applications of membrane-based separations. Membrane separation research in the department involves fundamentals of ultrafiltration and microfiltration, reversible and irreversible fouling of membranes by protein molecules, the role of transmembrane pressure pulsing in reducing concentration polarization, demulsification via crossflow microfiltration, application of supported emulsion liquid membranes for extractive fermentation and perfusion, membrane fabrication to produce photoresponsive gas separation devices, and enzymatic membrane reactors for resolution of racemic mixtures.

Another core separate research area is the crystallization of biological macromolecules. Using a variety of techniques such as pressure and temperature, researchers are evaluating the role of growth rate control on crystal quality. Other studies focus on improved crystallization screening protocols and crystal handling for subsequent structural determination via X-ray diffraction.

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 active in solving 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.

Novel rotating wall vessels developed at NASA are being used to simulate in vivo conditions with human prostate cancer cell lines. A major component of this research is the development of near-infrared spectroscopy for bioreactor monitoring, which will be used to monitor nutrients and byproducts noninvasively in real-time.

The department is active in designing 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.

Other work involves study of the metabolic engineering of methanol using bacteria to transform environmental pollutants. This work contributes to the interdisciplinary training of engineers and scientists to address the remediation of environmental pollutants.

The integration of biotechnology with traditional chemical engineering has led to an interdisciplinary area involving other engineering departments and the Departments of Chemistry, Biological Sciences, Biochemistry, and Microbiology and the College of Pharmacy. This focus includes involvement in the University’s Center for Biocatalysis and Bioprocessing, whose fermentation capabilities are highlighted by its 1,500-liter fermentor.

Master of Science
The Master of Science is offered with thesis and nonthesis options. The M.S. degree with thesis requires a minimum of 30 semester hours of graduate credit, including at least 24 semester hours in 052:199 M.S. Thesis Research: Chemical and Biochemical Engineering.

All M.S. candidates must demonstrate competence in research. M.S. students are required to have a graduate grade-point average of at least 3.00 in order to graduate. In addition, each student must submit an acceptable M.S. thesis and pass the final examination.
There is no foreign language requirement. Undergraduate courses (those numbered lower than 100) may not be used to satisfy the 24-semester-hour requirement.

Nonthesis M.S. candidates must satisfy the same requirements, except they must replace the 6 semester hours of 052:199 M.S. Thesis Research: Chemical and Biochemical Engineering with a cohesive course sequence approved by the graduate program coordinator.

Graduate students who receive assistantships, fellowships, or other financial support awarded with the understanding that they would pursue an advanced degree with thesis are not eligible to pursue the nonthesis M.S. degree. Nonthesis M.S. students are required to complete and pass a final written exam on the basic core material, a requirement normally satisfied by taking the annual Ph.D. qualifying exam.

Graduate students in the nonthesis M.S. 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 the committee approves the request, it is forwarded to the chemical and biochemical engineering faculty for final approval. Assignment to research advisors is then handled as if the student were a newly admitted graduate student.

Doctor of Philosophy

The Ph.D. is granted primarily on the basis of achievement rather than on the accumulation of semester hours of credit. However, all candidates must earn at least 72 semester hours of graduate credit. Candidates usually are expected to have completed three academic years of 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 in advanced engineering mathematics, and a thermodynamics course as well as six additional courses.

Ph.D. candidates are required to maintain a grade-point average of at least 3.25. All doctoral students are required to pass a qualifying examination and a comprehensive examination before they become candidates for the degree. The Ph.D. comprehensive examination is the presentation and defense of the candidate’s Ph.D. proposal. These examinations are arranged by members of the examining committee. The examinations may be repeated at the discretion of the committee. The rules for the comprehensive examination are published in the Manual of Rules and Regulations of the Graduate College. There is no foreign language requirement. A final examination, which is a defense of the thesis, completes the doctoral program.

Admission

Full admission to graduate study is granted to students who have a B.S. in chemical engineering with satisfactory grades from a recognized American college or university. Graduates of foreign universities also are accepted, depending on evaluation of their records. Admission to the graduate program usually requires a grade-point average of at least 2.80. Students who have not fulfilled the above requirements may be granted conditional admission to the M.S. program, with approval from the chair of the chemical and biochemical engineering department.

Applicants should take the verbal and quantitative parts of the Graduate Record Examination (GRE) General Test; scores should be submitted with the application.

Graduate courses in chemical and biochemical engineering are designed for students who have an undergraduate background in chemical engineering. However, exceptional students from other areas also may apply for admission to the M.S. or even the Ph.D. program in chemical and biochemical engineering. Such students need to take certain undergraduate courses as background so they can perform in the graduate courses with minimum difficulty. Since these undergraduate courses are taken as remedial courses, most do not carry credit toward a graduate degree.

Financial Support

A number of fellowships, assistantships, and scholarships are available to graduate students who qualify. These are awarded on a competitive basis.

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 professors from biochemistry, biological sciences, chemistry, civil and environmental engineering, medicinal and natural products chemistry, and microbiology.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core

MATERIALS SCIENCE LABORATORY

This laboratory is equipped with optical microscopes and facilities for metallographic preparation. Mechanical tension testing instruments, heat treatment and sintering furnaces, and hardness testing machines also are available. Teaching aids include metallography specimen kits and crystallography packages.

UNIT OPERATIONS LABORATORY

This is primarily an instructional laboratory for senior undergraduate students, which involves experimentation in transport phenomena, heat transfer, fluid flow, chemical engineering unit operations, and reaction kinetics and catalysis. 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 stirred-tank reactors, packed-bed reactor, mixer, and a variety of instrumentation for measuring flow, pressure, temperature, and weight. Analytical equipment includes gas chromatographs, HPLC, and UV/visible spectrophotometer. Equipment in emerging areas of chemical engineering has recently been added, including a fully instrumented microbial fermentor, membrane separator, and polymer extruder. A small shop also is available to students for use under a technician’s supervision.

PROCESS CONTROL LABORATORY

The process control laboratory is a modern, computer-based instructional laboratory for seniors. It is integral to the senior process control course. The laboratory consists of computer control of a shell-and-tube heat exchanger, a stirred-tank reactor, and a three-tank flow process. Additional laboratories include instruction in the use of analog controllers.

The computer control laboratory is set up to provide an ensemble of learning experiences with the same equipment, so that analogies and better insight into the control process can be obtained. 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 the open-loop and closed-loop response to step and ramp changes in input for single capacitance and multicapacitance processes; approximations of multicapacitance systems as first-order and second-order processes with dead-time through experimental evaluation; analysis of instrumentation characteristics and transfer functions; tuning and optimization of feedback control parameters (P, PI, and PID); system identification through frequency response methods; determination of system stability; and development of feed-forward control schemes.

Experimental arrangements in the laboratory are simple enough in design to be easily understood, yet complicated enough to give students an appreciation for system characteristics inherent in industrial processes (e.g., large time lags, error in parameter estimation).

CHEMICAL PROCESS SAFETY LABORATORY

This instructional laboratory is an integral part of 052:187 Chemical Process Safety. It is equipped with two flash-point testers, a reactive system screening tool (RSTT), a flammability limits tester, a Hartmann tube, a Van de Graaff generator, a high impedance electrometer, a field meter, a Faraday cage, and relief sizing software. This equipment is used in a series of
Graduate Facilities and laboratories

To support and develop research activities, the department offers a wide variety of facilities. A summary of the major research equipment within and available to the department is listed below.

**COMPUTER FACILITIES**

The departmental computer facilities contain a variety of graphics workstations, printers, and microcomputers. The terminals connect to the University's Weeg Computing Center. They also provide access to the college's Computer-Aided Engineering Laboratory. The department is networked to the University's Central Research Facility, devoted to molecular modeling, and to the GIS laboratory of the Center for Global and Regional Environmental Research.

The department also is connected to the Iowa Computer-Aided Engineering Network, which includes Hewlett-Packard workstations augmented with personal computers. The department 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.

**SEPARATION AND BIOSEPARATION PROCESSES**

Equipment available for the study of separation processes includes a large-scale, continuous-rotating, annular bed electrophoresis column; a packed bed electrophoresis column; a Waters Delta Prep 3000 HPLC system; an Amicon DC 30 ultrafiltration system; a small-scale hollow fiber and spiral wound membrane pilot system; membrane permeability measurement apparatus; immobilized reactor-separators; and facilities for the fabrication of membranes. The laboratory is supported by additional gas and liquid chromatographs, a Perkin-Elmer UV-Vis scanning spectrophotometer, a computerized data acquisition system, and other analytical equipment. The department also has pilot plant equipment for the study of filtration, distillation, extraction, and other equilibrium stage processes.

**CRYSTALLIZATION STUDIES**

Equipment for crystallization studies includes a dedicated Rigaku RU300 rotating anode generator and RAXIS-II area detector for conducting X-ray diffraction studies, an ALV dual static/dynamic laser light scattering goniometer, an ALV DR1 differential refractometer, a high precision Bellingham & Stanely Abbe refractometer, three microscopic digital imaging systems, a CSC differential scanning calorimeter, a Perkin-Elmer Pyris caryometric calorimeter, and typical protein chemistry tools (e.g., liquid chromatography, gel electrophoresis, centrifuges, and so forth).

**BIOCHEMICAL ENGINEERING**

Facilities in the Biochemical Engineering Laboratory include a three-liter agitated bioreactor and a 6-liter airlift fully controlled bioreactor, gas and liquid chromatographs, UV-Vis spectrophotometers, centrifuges, carbon dioxide incubators, Class II-A safety cabinets, microscopes, Coulter particle counter, rotary shaker, autoclave, 2-D gel electrophoresis equipment, and laboratory computers.

Through collaborative research agreements, graduate students also have access to specialized facilities for Electron Microscopy, Hybridoma/Tissue Culture, Flow Cytometry and Cell Sorting, Mass Spectrometry, Recombinant DNA Research, Protein Structure, and Large-Scale Fermentation.

**AIR POLLUTION MODELING AND VISUALIZATION**

The Geographic Information Systems (GIS) Laboratory provides state-of-the-art computer hardware and software for management, analysis, and visualization of environmental data. The equipment includes modern UNIX workstations with advanced graphics capabilities, as well as Macintosh and Windows NT computers. One workstation is equipped with dual processors for running complex modeling software. More than 50 gigabytes of on-line hard disk space is available for data storage.

Peripheral equipment includes zip, jaz, CD, and digital tape drives, a high quality color printer, a laser printer, and a CD writer. A Pyramid digital tape drives, a high quality color printer, a laser printer, and a CD writer. A Pyramid digital imaging systems, a CSC isothermal chromatography, and a Waters Delta Prep 3000 HPLC system.

**General Topics**

052:040 Cooperative Education 3 s.h.

Assignment: Chemical Engineering 0 s.h.

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. Admission to Cooperative Education Program and consent of co-op faculty advisor required.

052:041 Process Calculations 3 s.h.

Solutions of industrial problems using material and energy balances; stoichiometric and nonstoichiometric chemical reactions, changes of state, solutions, mixing problems; computer applications. Prerequisite: 25M:036.

052:043 Chemical Engineering Thermodynamics 3 s.h.

Applications of thermodynamic principles to chemical and physical processes; prediction of material properties; phase equilibria and chemical equilibrium applied to mixtures and reacting systems. Prerequisite: 052:041.

052:047 Unit Operations Lab I 3 s.h.

Laboratory investigations of transport phenomena and chemical engineering unit operations; design of experiments, operating procedures, data collection techniques, computer usage, laboratory safety. Prerequisites: 052:042, 052:043, and 052:044.

052:048 Unit Operations Lab II 2 s.h.

Open-ended laboratory studies of transport phenomena, chemical engineering unit operations, process control, and reaction kinetics; emphasis on project design, construction, development, evaluation. Prerequisites: 052:043 and 052:047.

052:090 Freshman Seminar: Chemical and Biochemical Engineering 0 s.h.

Introduction to the profession; presentations, visits to laboratories, industries.

052:091 Professional Seminar: Chemical Engineering 0 s.h.

Professional aspects of chemical engineering presented through lectures and discussions by guest speakers, field trips, films, panel discussions. May be repeated. Sophomore standing required.

052:098 Individual Investigations: Chemical Engineering arr.

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. Consent of faculty advisor required.

052:117 Advanced Thermodynamics 3 s.h.

Fundamental principles of thermodynamics as applied to phase equilibria; properties of fluids, first and second law, variable compositions, behavior of real fluids, mathematical techniques for solution thermodynamics. Prerequisites: 052:043 or graduate standing.

052:118 Advanced Mathematical Methods for Chemical Engineers 3 s.h.

Analytical solutions to ordinary and partial differential equations, asymptotic approximations to partial differential equations, perturbation theory, asymptotic expansion of integrals, boundary layer theory, summation of series as applied to chemical engineering problems. Prerequisite: 052:040 or graduate standing.

052:147 Modeling Analysis 3 s.h.

Numerical analysis applied to transport phenomena, chemical kinetics, reaction design; emphasis on model formulation and numerical solution; ordinary and partial differential equations. Consent of instructor required. Same as 053:160.

052:187 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: 052:042 and 052:044. Corequisite: 052:045.
College of Engineering • Chemical and Biochemical Engineering

052:195 Contemporary Topics: Chemical and Biochemical Engineering arr.
Topics or study areas not offered in other chemical and biochemical courses; global climate change, novel separations, advanced numerical methods, and so forth based on faculty and student interest. Senior standing required.

052:230 Colloid and Interfacial Phenomena 3 s.h.
Introduction to fluid-fluid, fluid-solid interfaces and colloid science; interface thermodynamics, rheology, DLVO theory, measurement techniques.

052:285 Advanced Chemical Process Control 3 s.h.
Mathematical techniques for modeling and controlling multiple variable chemical processes; topics in dynamic models, including lumped parameter and distributed parameter systems.

Biochemical Engineering

052:108 Introduction to Biochemical Engineering 3 s.h.
Biochemistry, cellular biology, recombinant DNA and biotechnology; 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: 004:016, 004:121, and 22M:036.

052:180 Advanced Biochemical Engineering 3 s.h.
Introduction to separation/purification techniques in biochemical engineering; filtration, centrifugation, chromatography, extraction, electrophoresis, crystallization, and cell disruption for intracellular product recovery. Prerequisite: 052:108 or consent of instructor.

052:220 Biotechnology of Extracellular Enzymes 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.

052:247 Enzyme Technology 3 s.h.
052:275 Perspectives in Biocatalysis 1 s.h.
Applied enzymeology, protein design, structure-activity relationships, biosensor technology, microbial transformations, biodegradation of environmental pollutants. Graduate standing required. May be repeated. Same as 004:275, 046:275, 053:275, 061:275, 069:275.

052:280 Engineering Aspects of Animal Cell Culture 3 s.h.
Applications of animal cell culture (insect and mammalian) in biochemical engineering, with emphasis on recombinant protein synthesis; special considerations of animal cell cultures (e.g., sensitivity to hydrodynamic stress), scale-up of attachment-dependent and attachment-independent cell cultures, medium development, hybridoma cultures, protein processing in animal cells. Prerequisite: 052:180 or consent of instructor.

Environmental Engineering

052:152 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, oxidation-reduction reactions, organic nomenclature. Prerequisite: 004:014. Same as 053:152.

052:159 Air Pollution Control Technology 3 s.h.
Sources, environmental and health impacts, regulations and modeling of air pollution; processes and alternative strategies for control; global climate considerations. Prerequisite: 053:170 or consent of instructor. Same as 053:159.

052:163 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, removal processes. Consent of instructor required. Same as 053:161.

052:194 Polymer Science and Technology 3 s.h.
Use, properties of industrially important polymeric materials; polymer chemistry, polymer structure, characterization, polymer processing. Prerequisite: 004:122.

052:156 Scanning Electron Microscopy and X-Ray Microanalysis 3 s.h.
Theory, operation, application of scanning electron microscopy and X-ray microanalysis for advanced students, staff, investigators who use these techniques in their research. Same as 012:156, 060:156.

052:157 Transmission Electron Microscopy and X-Ray Microanalysis 3 s.h.
Theory, operation, applications of TEM, STEM, thin film X-ray microanalysis techniques for materials science majors; practice in a variety of specimen preparation techniques, including metals, glass, ceramics, materials. Consent of instructor required. Same as 012:165.

052:170 Nanotechnology 3 s.h.

052:045 Chemical Reaction Kinetics 3 s.h.
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. Prerequisite: 052:043 and 052:046.

052:145 Intermediate Chemical Reaction Kinetics 3 s.h.
 Stoichiometry and equilibrium of multiple reactions, kinetics of elementary and composite reactions, heterogeneous catalytic kinetics, transition-state theory, linear free-energy relations, reaction analysis, transport in porous catalysts. Prerequisite: 052:045.

052:148 Catalysis 3 s.h.
Heterogeneous catalysis, with emphasis on applications of collision theory, transition state theory, acid-base concepts to catalysis and use of surface analysis techniques. Prerequisite: 004:131.

052:245 Advanced Chemical Reactor Design 3 s.h.
Advanced design of reactors for heterogeneous solid-catalyzed reactions; homogeneous catalysis and characterization, kinetics of catalytic reactions, transport and reaction in porous catalysts, catalyst deactivation, selectivity and stability in catalysts pellets, fixed-bed catalytic reactors, reactor optimization. Prerequisite: 052:045.

Transport Phenomena

052:042 Momentum Transport 3 s.h.
Transport phenomena, differential and integral momentum balances, fluid rheology, applications of equations in motion; topics include boundary layer flow, laminar and turbulent flow in pipes, packed beds, fluidized beds, flow measurement, pumps, agitation, filtration; design correlations, dimensional analysis. Prerequisite: 052:041.

052:044 Heat and Mass Transfer Operations 4 s.h.
Mechanisms of diffusion and convective mass and heat transfer; design of heat exchanger, evaporation, distillation, extraction, absorption, leaching, humidification, adsorption, drying, ion exchange processes. Prerequisites: 004:131, 052:042, and 052:045.

052:144 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. Prerequisites: 052:042 and 052:044, or consent of instructor.

052:240 Diffusional Mass Transfer 3 s.h.
Fundamentals of binary and multicomponent diffusional mass transfer processes, including mass transfer in laminar and turbulent flows. Prerequisite: 052:144.

052:244 Topics in Transport Phenomena 3 s.h.
May be repeated. Prerequisite: 052:144.

052:246 Transport and Reaction in Porous Media 3 s.h.

Materials Science

052:149 Polymer Science and Technology 3 s.h.
Uses, properties of industrially important polymeric materials; polymer chemistry, polymer structure, characterization, polymer processing. Prerequisite: 004:122.

052:156 Scanning Electron Microscopy and X-Ray Microanalysis 3 s.h.
Theory, operation, application of scanning electron microscopy and X-ray microanalysis for advanced students, staff, investigators who use these techniques in their research. Same as 012:156, 060:156.

052:157 Transmission Electron Microscopy and X-Ray Microanalysis 3 s.h.
Theory, operation, applications of TEM, STEM, thin film X-ray microanalysis techniques for materials science majors; practice in a variety of specimen preparation techniques, including metals, glass, ceramics, materials. Consent of instructor required. Same as 012:165.

052:272 Advanced Scanning Electron Microscopy 3 s.h.
Theoretical and practical aspects of high-resolution scanning electron microscopy, advanced electron beam specimen interaction, image analysis and signal processing techniques in a wide variety of applications using state-of-the-art equipment. Consent of instructor required. Prerequisite: 052:156. Same as 012:272.

Process Dynamics, Design, Analysis

052:085 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; emphasis on computer methods, including simulation and use of commercial software; laboratory exercises process analysis and design. Prerequisites: 052:043 and 052:044.

052:186 Chemical Engineering Process Design 3 s.h.
Design of chemical process plants, including 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, economics, economic optimization. Prerequisites: 052:045, 052:047, 052:085, and 057:021.

Graduate Seminars, Advanced Topics, Research

052:190 Readings in Chemical and Biochemical Engineering arr.
For graduate nonmajors who want to earn credit in undergraduate chemical engineering courses. May be repeated. Graduate standing in a discipline other than engineering and consent of instructor required.

052:191 Seminar in Chemical and Biochemical Engineering 0 s.h.
Presentation and discussion of recent advances and research in chemical and biochemical engineering by guest lecturers, faculty, students. Graduate standing required.

052:198 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. Graduate standing and consent of supervising faculty adviser required.

052:199 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. thesis in chemical and biochemical engineering. Graduate standing and consent of faculty adviser required.

052:299 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. Consent of adviser required.
Civil and Environmental Engineering

CIVIL AND ENVIRONMENTAL ENGINEERING

Chair: Robert Ettema
Professors emeriti: Dan E. Branson, Harrison Kane, Donald B. McDonald, Wayne L. Paulson
Adjunct professors: Konstantine P. Georgakakos, Tatsuki Nakato
Adjunct associate professors: Louis A. Licht, Ibrahim Al Khattat, John Nestler, R. Ranganathan
Assistant professors: Keri Hornbuckle, Patrick O'Shaughnessy, Michelle Scherer, Lizi Sun, Larry J. Weher

Undergraduate Program

Civil engineering courses build on the College of Engineering core curriculum and are designed to give all students the broad educational background essential to modern civil engineering practice. Students may choose from one of four subtracks-general, environmental, hydraulics and water resources, and structures-which can provide breadth (the general subtrack) or concentration in a desired area of specialization (environmental, hydraulics and water resources, or structural subtracks).

Curriculum

Requirements for the first semester are the same for all subtracks. Beginning with the second semester of the first year, requirements for the environmental subtrack are unique. Requirements for the general, hydraulics and water resources, and structures subtracks remain the same throughout the junior and senior years. Thus, students who choose the environmental subtrack must make their choice earlier than those who choose one of the other subtracks.

*The humanities and social science electives must be selected to satisfy the humanities and social sciences requirements of the College of Engineering.

**The CEE Field Trip requirement can be met in either the junior or senior year.

Environmental Subtrack

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. This field assignment, 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 entrepreneurial potential for civil and environmental engineers as they start their own companies.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>004:013 Principles of Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>010:003 Accelerated Rhetoric</td>
<td>4 s.h.</td>
</tr>
<tr>
<td></td>
<td>22M:035 Engineering Calculus I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td></td>
<td>053:010 CEE First-Year Seminar</td>
<td>0 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:005 Engineering I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>*Social science elective</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

General Subtrack

Students who choose the general subtrack may take any of the subtracks throughout the junior and senior years. Students who choose the environmental subtrack must make their choice earlier than those who choose one of the other subtracks.

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>004:014 Principles of Chemistry II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>22M:042 Vector Calculus for Engineers</td>
<td>3 s.h.</td>
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<tr>
<td></td>
<td>029:018 Introductory Physics II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td></td>
<td>053:020 CEE Sophomore Seminar</td>
<td>0 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:007 Statics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:009 Thermodynamics I</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

JUNIOR YEAR

First Semester

22S:039 Probability and Statistics for the Engineering and Physical Sciences | 3 s.h.
205:030 Soil Mechanics | 3 s.h.
053:091 Professional Seminar: Civil Engineering | 0 s.h.
053:150 Environmental Engineering: Natural Systems | 4 s.h.
053:152 Environmental Chemistry I | 3 s.h.
057:020 Mechanics of Fluids and Transfer Processes | 4 s.h.

Second Semester

053:071 Principles of Hydraulics | 3 s.h.
053:078 Principles of Hydrology | 2 s.h.
053:091 Professional Seminar: Civil Engineering | 0 s.h.
053:092 Field Trip in Civil and Environmental Engineering | 0 s.h.
053:155 Environmental Engineering: Engineered Systems | 3 s.h.
057:008 Electrical Circuits | 3 s.h.
057:021 Principles of Design I | 3 s.h.
*Social science elective (100 level) | 3 s.h.

SENIOR YEAR

First Semester

053:033 Structural Analysis | 3 s.h.
053:063 Transportation Engineering | 3 s.h.
053:091 Professional Seminar: Civil Engineering | 0 s.h.
053:157 Environmental Engineering | 3 s.h.
053:174 Hydraulic Design | 3 s.h.
*Humanities elective | 3 s.h.
Technical elective | 3 s.h.

Second Semester

053:084 Project Design and Management in Civil Engineering | 3 s.h.
053:085 Experiments in Structures/Mechanics/Transportation | 1 s.h.
053:091 Professional Seminar: Civil Engineering | 0 s.h.
**053:092 Field Trip in Civil and Environmental Engineering | 0 s.h.
*Humanities or social science elective (100 level) | 3 s.h.
Two technical electives | 6 s.h.

*Technical electives must be selected to satisfy the humanities and social sciences requirements of the College of Engineering.

**The CEE Field Trip requirement can be met in either the junior or senior year.

College of Engineering

Civil and Environmental Engineering
**SOPHOMORE YEAR**

**First Semester**
- 22M:042 Vector Calculus for Engineers 3 s.h.
- 029:018 Introductory Physics II 4 s.h.
- 053:020 CEE Sophomore Seminar 0 s.h.
- 057:007 Statics 2 s.h.
- 057:009 Thermodynamics 3 s.h.
- Humanities or social science elective 4 s.h.

**Second Semester**
- 22M:041 Differential Equations for Engineers 3 s.h.
- 057:010 Dynamics 3 s.h.
- 057:015 Materials Science 3 s.h.
- 057:019 Mechanics of Deformable Bodies 3 s.h.
- 053:020 CEE Sophomore Seminar 0 s.h.
- 053:081 Computers in Civil Engineering 3 s.h.

**JUNIOR YEAR**

**First Semester**
- 22S:039 Probability and Statistics for the Engineering and physical Sciences 3 s.h.
- 053:030 Soil Mechanics 3 s.h.
- 053:033 Structural Analysis 3 s.h.
- 053:091 Professional Seminar: Civil Engineering 0 s.h.
- 057:020 Mechanics of Fluids and Transfer Processes 4 s.h.
- 057:021 Principles of Design I 3 s.h.

**Second Semester**
- 053:034 Structural Design I 3 s.h.
- 053:071 Principles of Hydraulics 3 s.h.
- 053:078 Principles of Hydrology 2 s.h.
- 053:091 Professional Seminar: Civil Engineering 0 s.h.
- 053:092 Field Trip in Civil and Environmental Engineering 1 s.h.
- 057:008 Electrical Circuits 3 s.h.
- Humanities elective (100 level) 3 s.h.
- Social science elective (100 level) 3 s.h.

**SENIOR YEAR**

**First Semester**
- 053:063 Transportation Engineering 3 s.h.
- 053:091 Professional Seminar: Civil Engineering 0 s.h.
- 053:134 Structural Design II 3 s.h.
- 053:150 Environmental Engineering: Natural Systems 4 s.h.
- 053:174 Environmental Engineering: Environmental Engineering 3 s.h.
- Humanities elective (100 level) 3 s.h.
- Two technical electives 6 s.h.

**Second Semester**
- 053:084 Project Design and Management in Civil Engineering 3 s.h.
- 053:085 Experiments in Structures/Mechanics/Transportation 1 s.h.
- 053:091 Professional Seminar: Civil Engineering 0 s.h.
- 053:092 Field Trip in Civil and Environmental Engineering 0 s.h.
- 053:155 Environmental Engineering: Engineered Systems 3 s.h.
- 053:171 Water Resources Engineering: Technical elective 3 s.h.

**Hydraulics and Water Resources Subtrack**

**FIRST YEAR**
- 053:091 Professional Seminar: Civil Engineering 3 s.h.

**Second Semester**
- Same as for general subtrack.

**SOPHOMORE YEAR**

**First Semester**
- Same as for general subtrack.

**Second Semester**
- Same as for general subtrack.

**JUNIOR YEAR**

**First Semester**
- 053:034 Structural Design I 3 s.h.
- 053:071 Principles of Hydraulics 3 s.h.
- 053:078 Principles of Hydrology 2 s.h.
- 053:091 Professional Seminar: Civil Engineering 0 s.h.
- *053:092 Field Trip in Civil and Environmental Engineering 1 s.h.
- 057:008 Electrical Circuits 3 s.h.
- Humanities elective (100 level) 3 s.h.
- Social science elective (100 level) 3 s.h.

**Second Semester**
- 053:063 Transportation Engineering 3 s.h.
- 053:091 Professional Seminar: Civil Engineering 0 s.h.
- 053:134 Structural Design II 3 s.h.
- 053:150 Environmental Engineering: Natural Systems 4 s.h.
- 053:174 Hydraulic Design 3 s.h.
- Humanities elective (100 level) 3 s.h.
- Two technical electives 6 s.h.

**SENIOR YEAR**

**First Semester**
- 053:063 Transportation Engineering 3 s.h.
- 053:091 Professional Seminar: Civil Engineering 0 s.h.
- 053:134 Structural Design II 3 s.h.
- 053:150 Environmental Engineering: Natural Systems 4 s.h.
- 053:174 Hydraulic Design 3 s.h.
- Humanities elective (100 level) 3 s.h.
- Two technical electives 6 s.h.

**Second Semester**
- 053:084 Project Design and Management in Civil Engineering 3 s.h.
- 053:085 Experiments in Structures/Mechanics/Transportation 1 s.h.
- 053:091 Professional Seminar: Civil Engineering 0 s.h.
- 053:092 Field Trip in Civil and Environmental Engineering 0 s.h.
- 053:155 Environmental Engineering: Engineered Systems 3 s.h.
- 053:171 Water Resources Engineering: Technical elective 3 s.h.

**Structures Subtrack**

**FIRST YEAR**
- Second Semester
- Same as for general subtrack.

**SOPHOMORE YEAR**

**First Semester**
- Same as for general subtrack.

**Second Semester**
- Same as for general subtrack.
Global and Regional Environmental Research
The department has an active interdisciplinary research program in the environmental areas of air pollution, water pollution, groundwater remediation, global atmospheric change, and hazardous waste management. Particular emphasis is placed on the microbiology, chemistry, and physics of local, regional, and global air, soil, and water quality problems. Research includes sophisticated environmental quality analysis, high-speed computing, and detailed sensitivity analysis. The Department of Civil and Environmental Engineering and the Center for Global and Regional Environmental Research also collaborate in these endeavors.

Hydraulics, Hydrology, and Water Resources
The hydraulics, hydrology, and water resources curricula are associated with the Iowa Institute of Hydraulic Research, a world-renowned research organization. Senior staff members of the institute are professors in the program; they devote about half of their time to teaching.

The institute offers unique opportunities for students to participate actively in the research, analysis, and design aspects of real-world problems. Close student attention is given to the use of computers in mathematical modeling and in the acquisition and processing of data. The Computational Laboratory for Hydrometeorology and Water Resources, with its high-speed computer facilities and advanced graphics and communication software, complements the hydraulics and water resources curricula.

Structures, Mechanics, and Transportation
The structures, mechanics, and transportation curricula are directed primarily toward computer-aided structural design, optimization, mechanics of materials, and transportation systems and facilities. Special strengths exist in the areas of structural optimization, computational mechanics, micro-mechanics of heterogeneous materials, constitutive modeling, traffic engineering, and traffic management systems. Course work and research are available in all of these areas.

Cooperative relationships exist with the graduate programs in urban and regional planning, transportation studies, mechanical engineering, and biomedical engineering. Collaborative research is conducted with the Public Policy Center, the Center for Computer-Aided Design, the National Advanced Driving Simulator, and the College of Medicine. (See “Urban and Regional Planning” and “Transportation Studies” in the Graduate College section of the Catalog.)

Master of Science
The Master of Science programs in civil and environmental engineering are designed to permit further concentration in the area or areas of the student’s 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.

In general, the plan of study, with or without thesis, must include a minimum of 30 semester hours, with no more than 6 semester hours allowed for the thesis. An additional 3 semester hours are required in the nonthesis environmental engineering and science curriculum.

Students, with the approval of their adviser, develop a plan of study that satisfies special requirements of their chosen curriculum. All degree candidates are expected to have a grade-point average of at least 3.00. They must pass an oral examination and, in some program options, a written examination.

Doctor of Philosophy
The doctoral degree is granted primarily on the basis of achievement, rather than on a prescribed course of study. Requirements for semester hours of course work vary among the specialty areas. Candidates usually need at least three years of full-time work beyond the baccalaureate degree, one year of which is devoted to the preparation of a dissertation that contributes to knowledge in the field. In some specialty areas, a qualifying examination is required for students who have not earned an M.S. in an approved curriculum. The Ph.D. program requires 72 semester hours beyond the baccalaureate degree. Some program options have higher requirements.

All doctoral students are required to pass a written and oral comprehensive examination before being formally admitted to candidacy for the degree. This examination usually is taken when virtually all of the student’s course work has been completed.

The program culminates in a final examination, in which candidates must successfully defend their dissertation.

Doctoral candidates are expected to maintain a grade-point average of at least 3.00 throughout the doctoral program.

The program also cooperates in interdisciplinary doctoral programs with the program in applied mathematical sciences (see “Division of Mathematical Sciences” in the Graduate College section of the Catalog).

Admission
Each curriculum of the program is quite flexible; students may be admitted from all disciplines of engineering as well as from the mathematical and basic sciences.

Applicants for the master’s degree program are expected to have a cumulative undergraduate grade-point average of at least 2.75; 3.00 is preferred. For admission to candidacy for the doctorate, the minimum grade-point average is 3.20 based upon previous graduate work.

Applicants whose grade-point averages are slightly lower are invited to correspond regarding admission possibility. A Graduate Record Examination (GRE) General Test score of at least 1100 (verbal and quantitative) is recommended. Lower GRE General Test scores are considered with other evidence of academic promise (recommendation letters, grade-point average). GRE General Test scores are used in admission and financial aid decisions.

All applicants must meet the general admission requirements of the Graduate College (see the Graduate College section of the Catalog).

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.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core
The first year engineering course 057:005 Engineering I includes an introduction to the Iowa Computer-Aided Engineering Network (ICAEN), which is described under “College Facilities” in this section of the Catalog.

Students in the course learn word processing and elementary graphics on personal computers. Junior students in the course Principles of Design I make extensive use of the computer hardware and software available through ICAEN.

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 Course Laboratories
053:030 Soil Mechanics (3 s.h.): equipped for determining the classification, seepage characteristics, stress-strain properties, and strength of soils.

053:071 Principles of Hydraulics (3 s.h.): hydraulics of pressure conduits and open channels, dimensional analysis, flow measurements, hydraulic machinery, with laboratory.

053:085 Experiments in Structures/Mechanics/Transportation (1 s.h.): consists of experimentation in the structural and transportation areas; offered at the undergraduate Structural Materials Laboratory as a course with hands-on experimentation.

053:150 Environmental Engineering: Natural Systems (4 s.h., including 1 s.h. of lab): 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.

053:153 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 at the Environmental Engineering Laboratory.

053:154 Environmental Microbiology (3 s.h.): typical microorganisms isolated and their physiology and metabolic characteristics studied in the Environmental Engineering Laboratory.

053:155 Environmental Engineering: Engineered Systems (3 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.

053:156 and 053:151 Physical/Chemical and Biological Treatment Processes course laboratory: 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 LABORATORIES
Research in environmental engineering is conducted in the Iowa Advanced Technology Laboratory, at the Environmental Engineering Laboratory of the University Water Treatment Plant, and in the Hazardous Substances Research Laboratory at the Engineering Research Facility. These laboratories provide facilities for wastewater treatment research, including a modern wet chemistry laboratory and space for bench and pilot studies of wastewater treatment.

The Environmental Engineering Laboratory is equipped for both routine and advanced chemical and biological analyses of water and provides space for both bench and pilot scale studies. The entire 9 million gallons-per-day University Water Treatment Plant is especially designed to enable the study of treatment operations and processes.

The Hazardous Substances Research Laboratory is a 2,100-square-foot facility designed specifically for research into the properties and reactivity of chemical compounds of environmental concern. The laboratory consists of a suite of eight individual rooms connected by a central hallway, which is entered through an air lock. The laboratories are maintained at a positive pressure relative to the hallway to reduce the influx of dust. Ventilation in the laboratories is “once through,” which means that air is not recirculated, thus eliminating the possibility of cross-contamination. Air in the laboratories is constantly passed through High Efficiency Particulate Air (HEPA) filters, which make low-level and trace analyses possible.

Analytical instrumentation in the laboratory includes HP5890 Series II gas chromatographs with flame ionization and nitrogen/phosphorus detectors and with thermal conductivity and electron capture detectors; HP5890 Series I gas chromatograph with flame ionization and electron capture detector; Tekmar purge and trap (connected to FID); Gilson gradient and isotopic analytical HPLC; Perkin Elmer atomic absorption spectrophotometer with graphite furnace, autosampler, and mercury/hydride system; Beckman LS6000IC liquid scintillation counter; Dionex 400i ion chromatograph; and a Milton Roy Spectronic 601 UV/visible spectrophotometer.

Three of the rooms in the laboratory are environmental chambers capable of maintaining temperatures from 0 to 60 degrees Celsius to provide control for chemical and biochemical reactions. The laboratory has a SO-cubic-foot plant-growth chamber with light, temperature, and humidity control. An additional 400 square feet of laboratory space is available for projects that do not require “clean” conditions. The center also includes a Hewlett-Packard workstation for modeling studies as well as a number of personal computers for data acquisition and analysis.

The laboratory is affiliated with the U.S. EPA Region 7 and 8 Hazardous Substances Research Center, the Center for Health Effects of Environmental Contamination, a cooperative unit of the Colleges of Engineering and Medicine, and the NIEHS Environmental Research Core Center.

A 1,000-square-foot air pollution laboratory in the Center for Global and Regional Environmental Research (CGRER) is designed for chemical and aerosol particle analysis, stack gas sampling, and ambient air quality monitoring. Air quality modeling and spatial analysis of data are performed in the center’s 1,000-square-foot Geographical Information Systems Laboratory, located in the Iowa Advanced Technology Laboratory. The latest software (ARCINFO, GRASS) is used, and six Hewlett-Packard workstations are networked using the UNIX-based operating system.

HYDRAULICS, HYDROLOGY, AND WATER RESOURCES LABORATORIES
The teaching and research functions of the department are closely connected to the research and contractual activities of the Iowa Institute of Hydraulic Research, which also includes a Computational Laboratory for Hydrometeorology and Water Resources.

The institute houses some of the most modern research facilities in the world, including a 330-foot towing tank, several hydraulic flumes and wind tunnels, a dispersion flume, a wave tank, three special low-temperature flow facilities for investigation of ice phenomena, an environmental hydraulic flume for modeling of atmospheric flows, a refrigerated wind tunnel, a computer-controlled data handling system, 2-D and 3-D laser doppler anemometers for microscale velocity measurements, and extensive computational facilities.

The Computational Laboratory for Hydrometeorology and Water Resources uses a Hewlett-Packard DN10000 supercomputer, several Hewlett-Packard high-speed workstations, and graphic terminals and peripherals. It is equipped with advanced graphic software, communication software, mathematical software packages, and a Geographic Information System (GIS).

structures, mechanics, and transportation laboratories
Laboratories for computational solid mechanics, optimal design, plasticity, soils testing, structural materials testing, and ice engineering are available for teaching and research. The Optimal Design Laboratory and the Computational Solid Mechanics Laboratory have state-of-the-art networks of Hewlett-Packard and Silicon-Graphics workstations and other peripherals. These labs are used to conduct research on modern computational methods for analysis and design optimization of complex structural systems.

The Structural Materials, Soils, and Plasticity Labs are equipped for the determination of physical and mechanical properties of metals, concrete, soils, plastics, and bituminous materials. Equipment includes a computer-controlled MTS axial-torsional test system, universal testing machine, and a creep machine.

The Ice Engineering Research Lab has a uniaxial MTS test system with a state-of-the-art data acquisition system. There is also a Timlin Olson testing machine, two ice tanks, a milling machine (in a cold room for preparation of ice samples), and a variety of other equipment to allow testing of the mechanical properties of ice and of ice/structure interaction processes.

Courses

Special Topics
053:000 Cooperative Education Training Assignment: Civil Engineering 0 s.h.
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. Admission to the Cooperative Education Program and consent of faculty adviser required.

053:010 CEE First-Year Seminar 0 s.h.
Introduction to civil and environmental engineering curriculum and profession; presentations by Senior undergraduate students, graduate students, faculty; laboratory visits. Open only to freshmen.

053:020 CEE Sophomore Seminar 0 s.h.
Introduction to civil and environmental engineering curriculum and profession; presentations by senior undergraduate students, graduate students, faculty; laboratory visits. Open only to sophomores.

053:081 Computers in Civil Engineering 3 s.h.
Micro- and minicomputer applications in civil engineering: spreadsheets, database management, expert systems, computer graphics, recent developments in software and hardware; individual and team projects selected from structures, hydraulics, transportation, environmental engineering. Prerequisite: 057:006.

053:083 Surveying and Remote Sensing 3 s.h.
Engineering surveying measurements, methods, computations. Prerequisite: 057:065.

053:084 Project Design and Management in Civil Engineering 3 s.h.
Design of civil engineering systems, individual and team design projects oriented toward the solution of local problems, project management, construction management, contracts, budgeting, bidding, Senior standing required. Prerequisites: 053:034, 053:063, 053:150, and 053:174.

053:085 Experiments in Structures/Mechanics/Transportation 1 s.h.
Basic laboratory procedures in civil and environmental engineering, with emphasis on structural and transportation areas. Prerequisite: 053:033.
053:091 Professional Seminar: Civil Engineering 0 s.h.

053:092 Field Trip in Civil and Environmental Engineering 0 s.h.

053:093 Special Topics - Civil Engineering 2 s.h.

053:094 Independent Study 1-5 s.h.

053:095 Internship 0-8 s.h.

053:096 Thesis 0-5 s.h.

053:097 Dissertation 0-15 s.h.

053:098 Individual Studies 1-5 s.h.

053:099 Independent Study for graduate students under graduate study: laboratory study, engineering design project, analysis and simulation of an engineering system, computer software development, research. Consent of faculty adviser required. 0 s.h.

053:111 Numerical Calculations 3 s.h.

053:112 Computer-Aided Engineering 3 s.h.

053:136 Introduction to Computational Fluid Dynamics 3 s.h.

053:142 Introduction to Engineering Graphics 3 s.h.

053:143 Environmental Impact Analysis 3 s.h.

053:144 Geotechnical Engineering 3 s.h.

053:145 Applied Optimal Design 3 s.h.

053:146 Mechanical Design 3 s.h.

053:147 Building Design 3 s.h.

053:148 Fatigue/Durability in Design 3 s.h.

053:149 Fracture Mechanics 3 s.h.

053:150 Geotechnical Engineering 3 s.h.

053:151 Structural Analysis 3 s.h.

053:152 Analytical Methods in Thermo-Fluid Mechanics 3 s.h.

053:153 Analysis and Design of Dynamic Loads 3 s.h.

053:154 Structural Design 3 s.h.

053:155 Computer-Aided Engineering 3 s.h.

053:156 Advanced Topics in Civil Engineering 3 s.h.

053:157 Analysis and Design for Dynamic Loads 3 s.h.

053:158 Prestressed Concrete Structures 3 s.h.

053:159 Foundations of Structures 3 s.h.

053:160 Intermediate Mechanics of Deformable Bodies 3 s.h.

053:161 Traffic Systems Theory 3 s.h.

053:162 Design of Transportation Systems 3 s.h.

053:163 Simulation Application to Transportation 3 s.h.

053:164 Winter Highway Maintenance 3 s.h.

053:165 Transportation Safety 3 s.h.

053:166 Traffic Science 3 s.h.

053:167 Traffic Systems Theory 3 s.h.

053:168 Advanced Topics in Civil Engineering 3 s.h.

053:169 Topics in Civil Engineering 3 s.h.

053:170 Topics in Civil Engineering 3 s.h.

053:171 Topics in Civil Engineering 3 s.h.

053:172 Analytical Methods in Structural Mechanics 3 s.h.

053:173 Composite Materials 3 s.h.

053:174 Composite Materials 3 s.h.

053:175 Composite Materials 3 s.h.

053:176 Advanced Topics in Civil Engineering 3 s.h.

053:177 Advanced Topics in Civil Engineering 3 s.h.

053:178 Advanced Topics in Civil Engineering 3 s.h.

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053:197 Advanced Topics in Civil Engineering 3 s.h.

053:198 Advanced Topics in Civil Engineering 3 s.h.

053:199 Advanced Topics in Civil Engineering 3 s.h.

053:200 Advanced Topics in Civil Engineering 3 s.h.

053:201 Methods of Engineering Mathematics 3 s.h.

053:202 Analytical Methods in Structural Mechanics 3 s.h.

053:203 Analytical Methods in Structural Mechanics 3 s.h.

053:204 Analytical Methods in Structural Mechanics 3 s.h.

053:205 Analytical Methods in Structural Mechanics 3 s.h.

053:206 Analytical Methods in Structural Mechanics 3 s.h.

053:207 Analytical Methods in Structural Mechanics 3 s.h.

053:208 Analytical Methods in Structural Mechanics 3 s.h.

053:209 Analytical Methods in Structural Mechanics 3 s.h.

053:210 Developing Professional Service 2.3 s.h.

053:211 Equilibrium analyses. strain-displacement relations; finite element method; subsurface exploration methods. Prerequisite: 053:154. Same as 058:215.

053:212 Analytical Methods in Structural Mechanics 3 s.h.

053:213 Composite Materials 3 s.h.

053:214 Analytical Methods in Mechanical Systems 3 s.h.

053:215 Analytical Methods in Mechanical Systems 3 s.h.

053:216 Analytical Methods in Mechanical Systems 3 s.h.

053:217 Analytical Methods in Mechanical Systems 3 s.h.

053:218 Analytical Methods in Mechanical Systems 3 s.h.

053:219 Analytical Methods in Mechanical Systems 3 s.h.

053:220 Analytical Methods in Mechanical Systems 3 s.h.

053:221 Analytical Methods in Mechanical Systems 3 s.h.

053:222 Analytical Methods in Mechanical Systems 3 s.h.

053:223 Finite Element II 3 s.h.

053:224 Energy Principles in Structural Mechanics 3 s.h.

053:225 Computer Implementation 3 s.h.

053:226 Optimization of Structural Systems 3 s.h.

053:227 Finite strain measures and rate of deformation; principles of design and maintenance process through value engineering and safety management. Prerequisite: 053:063 or graduate standing.

053:228 Finite strain measures and rate of deformation; principles of design and maintenance process through value engineering and safety management. Prerequisite: 053:063 or graduate standing.

053:229 Finite strain measures and rate of deformation; principles of design and maintenance process through value engineering and safety management. Prerequisite: 053:063 or graduate standing.

053:230 Failure Analysis 3 s.h.

053:231 Finite Element Method 3 s.h.

053:232 Failure Analysis 3 s.h.

053:233 Finite Element II 3 s.h.

053:234 Computational Inelasticity 3 s.h.

053:235 Numerical Methods of Soil Mechanics 3 s.h.

053:236 Optimization of Structural Systems 3 s.h.

053:237 Finite strain measures and rate of deformation; principles of design and maintenance process through value engineering and safety management. Prerequisite: 053:063 or graduate standing.

053:238 Finite strain measures and rate of deformation; principles of design and maintenance process through value engineering and safety management. Prerequisite: 053:063 or graduate standing.

053:239 Finite strain measures and rate of deformation; principles of design and maintenance process through value engineering and safety management. Prerequisite: 053:063 or graduate standing.

053:240 Computational Inelasticity 3 s.h.

053:241 Continuum Mechanics and Elasticity 3 s.h.

053:242 Topics in Solid Mechanics 3 s.h.

053:243 Computational Inelasticity 3 s.h.

053:244 Energy Principles in Structural Mechanics 3 s.h.

053:245 Micromechanics of Solids 3 s.h.

053:246 Continuum Mechanics and Plasticity 3 s.h.

053:247 Theory of Viscoelasticity 3 s.h.

053:248 Fatigue/Durability in Design 3 s.h.

053:249 Fracture Mechanics 3 s.h.

053:250 Micromechanics of Solids 3 s.h.

053:251 Continuum Mechanics and Elasticity 3 s.h.

053:252 Micromechanics of Solids 3 s.h.

053:253 Continuum Mechanics and Elasticity 3 s.h.

053:254 Micromechanics of Solids 3 s.h.

053:255 Continuum Mechanics and Elasticity 3 s.h.

053:256 Continuum Mechanics and Elasticity 3 s.h.

053:257 Continuum Mechanics and Elasticity 3 s.h.

053:258 Continuum Mechanics and Elasticity 3 s.h.

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053:266 Continuum Mechanics and Elasticity 3 s.h.

053:267 Continuum Mechanics and Elasticity 3 s.h.

053:268 Continuum Mechanics and Elasticity 3 s.h.
Environmental Engineering and Science

053.102 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 percolation, tracer, and medium grain tracer analysis, pump testing, well installation Prerequisite: 053:078 or graduate standing in engineering.

053.104 Groundwater Modeling 3 s.h.
Principles and applications of groundwater flow and contaminant transport; analytical solutions, numerical methods, stochastic approaches, applications of groundwater modeling software. Prerequisites: 22M:026 or 22M:036, and 012:166. Same as 012:184.

053.150 Environmental Engineering: Natural Systems 3 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. Prerequisite: 004:013. Same as 021:184.

053.151 Biological Treatment Processes 3 s.h.

053.152 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; nomenclature. Prerequisite: 004:014. Same as 052:183.

053.153 Environmental Chemistry Laboratory 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. Prerequisite: 004:016 or equivalent. Corequisite: 053:152.

053.154 Environmental Microbiology 3 s.h.
Fundamentals of microbiology and microbiological ecology with application in water quality and biodegradation of priority pollutants; lectures and laboratory. Corequisite: 053:152.

053.155 Environmental Engineering: Engineered Systems 3 s.h.
Water supply and treatment processes; wastewater treatment processes; processes for air pollution control, groundwater remediation; solid and hazardous waste management. Prerequisites: 053:071 and 053:150, or consent of instructor. Same as 152:162.

053.156 Physical-Chemical Treatment Processes 3 s.h.
Theory of physical and chemical operations and processes in water and wastewater treatment systems; applications including fundamental aspects of process dynamics; lectures, laboratory. Prerequisites: 053:150 and 053:152. Corequisite: 053:155.

053.157 Environmental Engineering Design 3 s.h.
Application of physical, chemical, and biological operations and processes to the design, operation, and regeneration of water and wastewater treatment systems; applications in solid and hazardous waste treatment. Prerequisites: 053:071, 053:150, and 053:155.

053.158 Solid and Hazardous Wastes 3 s.h.
Sources; collection, disposal of solid and hazardous wastes; environmental impacts of hazardous waste management; resource recovery systems. Prerequisite: 053:150. Same as 175:186.

053.159 Air Pollution Control Technology 3 s.h.
Sources, environmental impacts, regulations, modeling of air pollution; processes and alternative strategies for control; global climate considerations. Prerequisite: 053:150 or consent of instructor. Same as 152:159.

053.160 Modeling Analysis 3 s.h.
Application of numerical analysis to transport phenomena, chemical kinetics and reactor design; emphasis on model formulation and numerical solution. Prerequisite of instructor required. Same as 012:184.

053.161 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 Consent of instructor required. Same as 021:186.

053.204 Theories of Environmental Policy and Assessment 3 s.h.
Major concerns about environment and human health and basis on which legislation has been enacted to deal with these concerns: emphasis on contemporary legislation that has major effects on environmental policy. Prerequisite: 053:150. Same as 252:152, 275:152.

053.225 Environmental Processing of Organic Chemicals 3 s.h.
Environmental organic chemistry, with focus on toxic and persistent organic compounds; biocaccumulation in flood webs; chemical diagenesis in air, water, and sediment. Prerequisite: 053:152 or consent of instructor.

053.251 Environmental Systems Modeling 3 s.h.
Mathematical modeling of environmental systems, including rivers, lakes, estuaries, treatment systems for conventional and toxic pollutants. Prerequisites: 053:071, 053:152, and 053:155; or consent of instructor.

053.252 Environmental Chemistry II 3 s.h.
Solid-liquid interface problems; heterogeneous equilibria, environmental organic chemistry, modeling chemical equilibria and kinetics, radiochemistry, atmospheric chemistry. Prerequisite: 053:152.

053.257 Industrial Wastewater and Hazardous Wastes Control 3 s.h.
Sources, characteristics, treatment of industrial wastewaters to meet environmental standards; by-product and reuse applications; hazardous waste management and control processes. Prerequisites: 053:150, 053:151, 053:155, and 053:156.

053.259 Aerosol Measurement and Dynamics 3 s.h.
Measurement, characterization of atmospheric and laboratory generated aerosols; inertial collection, direct reading instruments; fiber collection aerosol dynamics, including nucleation, coagulation, evaporation and condensation; laboratory and field experiments. Graduate standing required. Prerequisites: 053:150, or 053:159 or 053:161; or consent of instructor.

053.274 Foundations in Bioremediation 3 s.h.
Xenobiotic degradation mechanisms with focus on the relationship between chemical structure and biochemical reactivity; process optimization through engineered control of the environment; bioremediation case studies emphasizing site characterization, system selection, design, operation, trouble-shooting. Prerequisite: 053:151 or equivalent.

053.275 Perspectives in Biocatalysis 1 s.h.

Hydraulics, Hydrology, and Water Resources

053.071 Principles of Hydraulics 3 s.h.
Hydraulics of pressure conduits and open channels, dimensional analysis, flow measurements, hydraulic machinery, with laboratory. Prerequisite: 057:020.

053.078 Principles of Hydrology 2 s.h.

053.116 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: 22M:042 and 22M:050.

053.117 Remote Sensing 3 s.h.
Fundamentals of electromagnetic waves, atmospheric radiative transfer, passive remote sensing, weather radar, hydrologic application of remote sensing. Prerequisite: 053:116 or consent of instructor.

053.128 Fluvial Geomorphology 3 s.h.
Hydrogeological principles; stream channel processes; fluvial geomorphology within the drainage basin system; spatial and temporal variations in water distribution; analyses of hydrological data; flow mechanisms, sediment transport; forecasting procedures; graphon construction, and modeling. Consent of instructor required. Same as 012:138.

053.169 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: 057:020. Same as 058:190.

053.170 Flow in Open Channels 3 s.h.
Energy and momentum principles of open channel flow; uniform flow; gradually varied flow; rapidly varied flow; unsteady flow; flood routing. Prerequisite: 053:071.

053.171 Water Resources Engineering 3 s.h.
Planning and economics of water resources projects; stochastic basis of design; flood control; river navigation works; hydraulic machinery: hydraulic power systems; classification, functions of hydraulic structures; hydraulic design techniques, energy dissipators, gates, outlet works; design of canal, other water conveyance structures: design of municipal and industrial outfall structures. Prerequisites: 053:174.

053.172 Experimental Methods in Fluid Mechanics and Heat Transfer 3 s.h.
Review of theory; importance of experiments; measuring and scaling laws; experimental environment and facilities; measurements at full scale and on small models; use of wind and water tunnels, towing tanks, hydraulic flumes; instruments for measuring pressure, temperature, velocity, turbulence; error analysis; data acquisition and processing; laboratory demonstrations, hands-on experiments, project. Prerequisite: 058:080 or equivalent. Same as 058:162.

053.173 Mechanics of Sediment Transport 3 s.h.
Laws governing fluid velocity, applied to particle-size analyses: incipient motion, bed forms, bed load, suspended load, natural river processes; theory and practice of movable-bed model experiments. Prerequisite: 053:170.

053.174 Hydraulic Design 3 s.h.
Storage reservoirs, design of dams and control works, water and wastewater transfer systems; computer applications Prerequisites: 22S:039, 053:071, and 053:078.

053.175 Groundwater and Contaminant Transport 3 s.h.
Numerical solutions of groundwater flow through porous media; interaction of surface and groundwater flows; groundwater contaminant transport; numerical methods, parameter estimation applications to groundwater models; hydrodynamics of wells; seepage analysis, land-drainage systems Prerequisite: 053:169.

053.177 Theory and Practice of Hydraulic Modeling 3 s.h.
Theoretical bases for hydraulic models developed from governing equations; theory of dimension analysis; practical aspects of construction and operation of Froude and Reynolds models; modeling of hydraulic machinery, rivers, tidal flows, heated discharges, ice phenomena; modern instrumentation and data-handling techniques. Prerequisite: 053:075.

053.178 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 hydrolology Prerequisite. 053:078
Thermodynamic and flow characteristics of the atmosphere; occurrence of phenomena associated with mid-latitude weather systems, evaporation, measuring precipitation and evaporation, floods and droughts, regional precipitation climatology, atmospheric dynamics. Prerequisite: 053:178.

053:180 Field Methods: Environmental Processes 2-4 s.h.
Problem definition and research design; sampling theory, procedures; sensor and recording methods for collection of primary data; data analysis; interpretation of physical and environmental processes. Consent of instructor required. Same as 012:195.

053:270 Coastal Hydrodynamics 3 s.h.
Wave theories, tides, harbor engineering; coastal structures, estuary dynamics, salinity intrusion, sediment transportation in estuaries; beach processes and evolution. Prerequisite: 053:169.

053:272 Environmental Dispersion Processes 3 s.h.

053:273 Computational Hydraulics 3 s.h.
General review of numerical methods; one dimensional unsteady flow; quasi-two-dimensional unsteady flow; unsteady dispersion in rivers; and sediment motting in rivers; calibration. Prerequisites: 053:169 and 053:170.

053:276 Viscous Flow 3 s.h.
Equations of compressible viscous flow; classical exact analytical and numerical solutions; flow regimes and approximations; laminar boundary layer equations; solutions and applications; introduction to stability theory; incompressible turbulent flow: mean-flow and Reynolds-stress equations, modeling, solution procedures, and applications; compressible boundary layer Prerequisites: 053:169. Same as 058:260.

053:277 Inviscid Flow 3 s.h.
Flow of an inviscid, incompressible fluid; steady and unsteady, two- and three-dimensional flows, inviscid flows; forces and moments acting on bodies; conformal mapping; method of images; separation of variables; slender body theory; Green's functions and integral equations; numerical methods; inviscid compressible flow; shock waves. Prerequisite: 053:169. Same as 058:262.

053:280 Hydrodynamics Design and Operation 3 s.h.
Specialization of hydraulic variables; design of sampler networks; derived distributions of hydrologic variables; flood frequency analysis; real-time hydrometeorologic forecasting; statistical inference applications to surface and groundwater models; stochastic optimization and control of water resources systems; multilobal analysis. Prerequisites: 053:116 and 053:178.

Graduate Seminars, Advanced Topics, Research

053:190 Readings in Civil and Environmental Engineering arr.
For graduate nonmajors who want to earn credit in an undergraduate civil and environmental engineering course. May be repeated Graduate standing in a discipline other than engineering and consent of instructor required.

053:191 Graduate Seminar: Structures, Mechanics, Materials 0 s.h.
Presentation and discussions of recent advances and research in structures, mechanics, and materials engineering by guest lecturers, faculty, students Senior or graduate standing required.

053:192 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, senior or graduate standing required.

053:193 Graduate Seminar: Hydrodynamics, Hydrology, and Water Resources 0 s.h.
Presentation and discussions of recent advances and research in hydrodynamics, hydrology, and water resources by guest lecturers, faculty, students. Senior or graduate standing required.

053:195 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. Senior standing required.

053:198 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. Graduate standing and consent of faculty advisor required.

Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for the M.S. degree with thesis in civil and environmental engineering. Graduate standing and consent of faculty advisor required.

Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for the Ph.D. degree in civil and environmental engineering Consent of faculty advisor required.

ELECTRICAL AND COMPUTER ENGINEERING

Interim chair: Steve M. Collins
Professor emeritus: Earl D. Eymen
Associate professors: Mark S. Andersland, Winston K. Chan, Zhi Ding
Assistant professors: Gary Christensen, Daniel Thedens, Andrew B. Williams

Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for the M.S. degree in civil and environmental engineering Consent of faculty advisor required.

Undergraduate Program

The undergraduate program provides a strong background in basic electrical and computer engineering subjects, physics, and mathematics and allows for concentration in several areas through six technical elective courses usually taken in the senior year. Students can concentrate in one or more areas chosen from computer engineering, control, telecommunications, electronics, signal and image processing, and applied physics.

Curriculum

*The humanities and social science electives must be selected to satisfy the humanities and social science requirements of the College of Engineering.

FIRST YEAR

004:013 Principles of Chemistry I 3 s.h.
010:003 Accelerated Rhetoric 4 s.h.
22M:035 Engineering Calculus I 4 s.h.
055:090 Electrical Engineering Orientation Seminar 0 s.h.
057:005 Engineering I 3 s.h.

*Humanities or social science elective 3 s.h.

Second Semester

004:016 Principles of Chemistry Lab 2 s.h.
22M:036 Engineering Calculus II 4 s.h.
22M:040 Matrix Algebra for Engineers 2 s.h.
029:017 Introductory Physics I 4 s.h.
057:006 Engineering II 3 s.h.

SOPHOMORE YEAR

First Semester

22M:041 Differential Equations for Engineers 3 s.h.
029:018 Introductory Physics II 4 s.h.
057:007 Statics 2 s.h.
057:008 Electrical Circuits 3 s.h.
057:009 Thermodynamics I 3 s.h.

Second Semester

22M:042 Vector Calculus for Engineers 3 s.h.
057:012 Linear Systems Analysis 3 s.h.
057:017 Computers in Engineering 3 s.h.
057:018 Principles of Electronic Instrumentation 4 s.h.

*Humanities or social science elective 3 s.h.

JUNIOR YEAR

First Semester

223:039 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
055:032 Introduction to Digital Design 3 s.h.
055:041 Electronic Circuits 4 s.h.
055:042 Signals and Systems 3 s.h.
055:091 Professional Seminar: Electrical Engineering 0 s.h.

*Humanities or social science elective 3 s.h.

Senior Year

053:190 Readings in Civil and Environmental Engineering arr.

Electrical engineers and computer engineers make vital contributions to nearly all facets of modern society through their work in areas such as medical imaging, robotics, satellite communications, and fiber optics. From automated teller machines and high-definition television to the World Wide Web, remotely-piloted vehicles, satellite-originated weather maps, and fax machines, electrical and computer engineers’ contributions to computer hardware and software and telecommunications are changing everyday life.

Many benefits that have sprung from electrical engineering technology now are taken for granted: noninvasive imaging of the brain, astonishing views of the solar system’s outer planets, and international telecommunications and broadcasting. Electrical engineers also play crucial roles in major emerging technologies, such as computer networking; wireless, optical, and satellite communication; automated manufacturing; lasers; and medical imaging.

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. Graduates of the program are employed in computer, semiconductor, aerospace, telecommunication, medical, radio, television, and power industries. Electrical engineers work in research, design, development, manufacturing, sales, market analysis, consulting, field service, and management.
## Graduate Programs

Electrical and computer engineering offers curricula leading to the Master of Science and Doctor of Philosophy degrees. Thesis and nonthesis M.S. programs are available; either may precede Ph.D. studies. An M.S. subtrack in software engineering is also available. Excellence in scholarship and research is stimulated by close contact with the faculty throughout the period of graduate study and through programs tailored to fit individual needs.

### Second Semester

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>029:083</td>
<td>Modern Physics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:033</td>
<td>Introduction to Software Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:050</td>
<td>Communication Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:060</td>
<td>Control Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:070</td>
<td>Electromagnetic Theory</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### SENIOR YEAR

#### First Semester

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>055:027</td>
<td>Electrical Engineering and Devices</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:088</td>
<td>Principles of Electrical Engineering Design</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Technical electives (see “Technical Electives” below) 9 s.h.

*Humanities or social science elective 3 s.h.

#### Second Semester

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>055:089</td>
<td>Senior Electrical Engineering Design</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Technical electives (see “Technical Electives” below) 9 s.h.

*Humanities or social science elective 4 s.h.

### Technical Electives

Technical electives must have an engineering orientation and cannot be drawn from the social sciences, the humanities, or skills courses. Consult the Undergraduate Student Handbook for details. Students must choose at least two courses from the following design list.

**Design List**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>055:035</td>
<td>Computer Architecture and Organization</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:068</td>
<td>Power Systems Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:130</td>
<td>Switching Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:131</td>
<td>Introduction to VLSI Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:132</td>
<td>High Performance Computer Architecture</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:137</td>
<td>Digital Signal Processor Based Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:138</td>
<td>Testing Digital Logic Circuits</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:141</td>
<td>Power Electronics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:143</td>
<td>Linear Integrated Electronics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:144</td>
<td>Digital Integrated Electronics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:146</td>
<td>Digital Signal Processing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:148</td>
<td>Digital Image Processing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:150</td>
<td>Communication Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:152</td>
<td>Introduction to Information and Coding Theories</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:160</td>
<td>Control Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:164</td>
<td>Computer-Based Control Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:165</td>
<td>Introduction to Robotics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:172</td>
<td>Solid State Physical Electronics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>055:178</td>
<td>Optical Signal Processing</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>057:021</td>
<td>Principles of Design I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>057:022</td>
<td>Principles of Design II</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Research

#### Waves and Materials

Research in this area is carried out primarily within the Interdisciplinary Research in Biomedical Engineering (IRBME) and the Center for Biomedical Engineering at the University of Iowa. Current research focuses on the development of novel materials for applications in medicine, including drug delivery systems, tissue engineering, and biosensors.

### Signal and Image Processing

Image processing and machine vision are areas of emphasis. A digital signal processing laboratory and an image analysis laboratory are available to support this research. Collaborative research with faculty in the Departments of Radiology, Neurology, Psychiatry, Internal Medicine, 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, and robust equalization of communication channels. Application of neural networks to communications systems, multirate signal processing, and subband coding and channel equalization.

Current projects in image processing include automated detection of vessel borders and coronary trees in angiograms using artificial intelligence techniques, detection and tracking of cardiac motion from magnetic resonance images, analysis of intravascular ultrasound images, and segmentation of threedimensional brain images based on genetic optimization algorithms, knowledge-based techniques for identification of pulmonary airway trees from CT images, and threedimensional segmentation techniques for quantification of lung disease.

Additional projects include medical image registration using deformable shape models; modeling normal versus abnormal anatomical shape as imaged via MRI, CT, and PET; tracking growth and regression of cancer tumors before and after treatment; 3-D measurement and visualization of normal and abnormal infant skull shape; development of parallel algorithms to reduce computation time; and development of methods for distributed medical imaging over...
a high-speed ATM network connecting the Colleges of Engineering and Medicine.

Control Systems and Robotics
Current research emphasizes optimal, adaptive, digital, robust and stochastic control; multi-arm robot manipulators; and the control of discrete event dynamical systems. Recent work has concerned the estimation, identification, and robust control of linear and nonlinear dynamical systems; the coordination of cooperating robot arms; the applications of neural networks in control; use of control theory to analyze distributed computing, communications, and manufacturing systems; phase stabilization of evanescently coupled semiconductor laser arrays; and multirate control systems.

Communications Systems
Current research activities in communication systems focus on design and analysis of receivers for digital wireless communications, especially on the development of effective and practical receivers for multi-user wireless cellular systems in multipath channels. Projects include the removal of intersymbol interference by blind identification/equilibration for TDMA systems, smart antenna array for co-channel interference rejection, multi-user detection in CDMA without power control, receiver structures for 3G wireless cellular systems, and bandwidth efficient modulation techniques. Fundamental theoretical issues and practical implementation are emphasized.

Master of Science
There are two M.S. options: with and without thesis. The thesis option requires 30 semester hours of course work, including at least 12 semester hours from an approved list of courses in electrical and computer engineering. The nonthesis option requires 36 semester hours of course credit, with a minimum of 18 semester hours from an approved list of courses in electrical and computer engineering. M.S. students may not count courses required for electrical engineering undergraduates toward the semester-hour requirements. Students who choose the thesis option must earn 6 semester hours of credit in 055:199 Research: Electrical and Computer Engineering, M.S. Thesis. Students pursuing the nonthesis option may count no more than 3 semester hours of independent study credit toward the 36-semester-hour total.

Candidates for the master’s degree in electrical and computer engineering also 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 candidates must consist of an oral defense of the thesis. At the time of graduation, candidates for the master’s degree must have acquired a cumulative grade-point average of at least 3.00.

M.S. Subtrack in Software Engineering
The department offers an M.S. subtrack in software engineering, in both thesis and nonthesis options. Successful completion of the subtrack results in the designation “with specialization in software engineering” on the student’s transcript.

The nonthesis subtrack requires completion of a minimum of 36 semester hours; the thesis option requires 30 semester hours. Both require completion of the following four software engineering core courses.

- 055:180 Fundamentals of Software Engineering 3 s.h.
- 055:181 Formal Methods in Software Engineering 3 s.h.
- 055:182 Software Engineering Languages and Tools 3 s.h.
- 055:183 Software Engineering Project 3 s.h.

In addition, both options require completion of at least three courses chosen from the following:

- 22C:116 Advanced Operating Systems 3 s.h.
- 055:131 Introduction to VLSI Design 3 s.h.
- 055:132 High Performance Computer Architecture 3 s.h.
- 055:133 Graph Algorithms and Combinatorial Optimization 3 s.h.
- 055:134 Computer Communications 3 s.h.
- 055:232 Parallel Computing and Advanced Architecture 3 s.h.
- 055:234 Distributed Computing 3 s.h.

An additional 6 semester hours of course work from the approved list of electrical and computer engineering courses is required for the nonthesis option and 3 semester hours for the thesis option. All rules for additional credit and the M.S. final examination are the same as for the general M.S. program.

Doctor of Philosophy
Ph.D. students must complete at least 72 semester hours of credit in a coherent program acceptable to the adviser and approved by the graduate committee. At least 45 semester hours must be earned in formal courses (not thesis or other independent study), including 30 semester hours from an approved list of courses in electrical and computer engineering.

Ph.D. students take a Ph.D. qualifying examination and a Ph.D. comprehensive examination and then must successfully complete a research program that includes a minimum of 18 semester hours 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 grade-point average of 3.25 or higher in all graduate course work. Following successful completion of the Ph.D. qualifying examination and invitation into the Ph.D. program, a student must complete a three-part Ph.D. comprehensive examination consisting of a “take-home” exam set by the student’s adviser and Ph.D. committee, preparation of a written thesis proposal, and an oral exam that includes a presentation and defense of the proposal. A minimum of six months must separate completion of the first and last portions of the comprehensive examination. 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 3 years after completion of the comprehensive examination.

Admission
Admission to the graduate program requires a grade-point average of at least 2.75 for M.S. students and at least 3.25 for Ph.D. students on all courses in electrical and computer engineering, mathematics, and physics. M.S. students with grade-point averages lower than 2.75 but higher than 2.50 in courses in electrical and computer engineering, mathematics, and physics 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 a conditional basis. In such cases, students may need to complete additional course work without earning graduate credit before being granted regular admission status.

Each application is reviewed on an individual basis. 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.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core
Electrical and computer engineering provides core instruction for the college in linear systems, 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 undergraduate laboratories include facilities for the study of electrical and electronic circuits, signals and systems, microprocessor-based computers and systems, measurement automation, communication systems, control
Digital Systems, Computers, Software Engineering

055.032 Introduction to Digital Design 3 s.h. Modern design and analysis of digital switching circuits; combinational logic design; finite state system controllers; interfacing and testing techniques; design methodologies using medium and large-scale integrated circuits; lab arranged. Prerequisite: Sophomore standing required.

055.033 Introduction to Software Design 3 s.h. Design of software for microprocessor-based engineering systems; cross-development environment; algorithm design and structured programming; data structures; interfacing of high-level and low-level languages; device drivers; example applications to engineering problems: lab arranged. Prerequisite: 055.017.

055.035 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, multiprocessing, Introduction to hardware description languages (Verilog, VHDL) design and simulate a simple processor. Offered spring semesters. Prerequisites: 055.032 and 055.033.

055.130 Switching Theory 3 s.h. Switching algebra combinational circuits-hazard minimization, multiple-output networks; sequential circuits—critical races, essential hazards, fundamental-mode, pulse-mode, synchronous circuits-state assignment, state reduction; input-output experiments. Prerequisite: 055.032.

055.131 Introduction to VLSI Design 3 s.h. MOS devices and circuits; MOS transistor theory, MOS processing technology, MOS device models; timing and power considerations, parameter use; scaling; various logic schemes; circuit techniques; clocking strategies; I/O structures; design styles: ASIC design; MOS subsystem design; case studies, use of electronic design automation tools, introduction to hardware description languages, design synthesis, design projects; lab. Prerequisites: 055.032 and 055.041.

055.132 High Performance Computer Architecture 3 s.h. Problems involved in designing and analyzing current microcomputer architectures using hardware description language (HDL) simulation and analysis, hierarchical memory design, pipeline processing, vector-processing, numerical applications; multiprocessor architectures and parallel algorithm design techniques; evaluation methods to determine relationship between computer and design goals. Prerequisites: 22C.040 or 055.032 and 055.035. Same as 22C.122.

055.133 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 Prerequisite: 055.033 or equivalent.

055.134 Computer Communications 3 s.h. Computer networks, IS0 model, network topology, communication of digital data, data link control; errors and error control; point-to-point networks; broadcast networks, local network architecture; transport services; internetworking; user services. Prerequisites: senior standing in electrical and computer engineering or computer science; and 228.039 or 228.120. Same as 22C.178.

055.136 Advanced VLSI Design 3 s.h. Models of transistors, models of interconnects, evaluation Of circuit performance, circuit optimization, high-performance, digital integrated circuits, clocking and timing, practical problems of CMOS VLSI, introduction to behavioral modeling and simulation, introduction to VLSI CAD, multiprocessor module; lab. Prerequisite: 055.131.

055.137 Digital Signal Processor Based Systems 3 s.h. Design of digital signal processor-based engineering systems; architecture of digital signal processor; cross-development environment; assembly-language programming; interfacing with external devices, systems; man/machine interfacing; priority interrupts; applications in image display, signal processing, control systems. Prerequisites: 055.042 and 057.017.

055.138 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. Prerequisite: 055.02.

055.180 Fundamentals of Software Engineering 3 s.h. Problem analysis, requirements specification, design, implementation, testing/ maintenance, integration, project management, human factors; management and technical communication; design methodologies; software validation and verification, group project. Open only to seniors in electrical and computer engineering or computer science. Same as 22C.180.

055.181 Formal Methods in Software Engineering 3 s.h. Formal models and methods and their application in software engineering processes; operational, algebraic, model based and property-based specification methods; verification of consistency and completeness of specifications; verification of properties of software; specification construction and verification using method-based tools. Same as 22C.181.

055.182 Software Engineering Languages and Tools 3 s.h. Object-oriented programming concepts (objects, classes, single and multiple inheritance, polymorphism and dynamic binding, templates); advanced C++ topics, class design standard C++ class library, including Standard Template Library; other object-oriented languages and environments such as SmallTalk or Eiffel; introduction to design patterns and software architectures such as Model-View Controller and application frameworks. Consent of instructor required. Prerequisite: 22C.180 or experience with C++ Same as 22C.182.

055.183 Software Engineering Project 3 s.h. Use of object-oriented concepts and object-based models in software system analysis and design; Booth, OMT, Booth-Rumbaugh unified method and notation; Jacobson’s use cases; use of design patterns; software architectures; case studies; object-oriented process and project management; team project for a real software product. Prerequisites: 22C.181 and 22C.182, or consent of instructor Same as 22C.183.

055.230 Advanced Logic Synthesis 3 s.h. Synthesis of multiple output circuits; finite state machines; algebraic factoring; testability preserving transformations; design verification; high-level synthesis. Prerequisites: 055.130 and 055.131, or consent of instructor.

055.222 Parallel Computing and Advanced Architecture 3 s.h. Design and use of state-of-the-art parallel computer systems; relationship to applications computation models, algorithms, languages, compilation, operating systems, interconnection networks, SIMD, MIMD, data-flow, shared/compile memory, hybrid and nonconventional architectures. Prerequisite: 055.12.

055.234 Distributed Computing 3 s.h. Fundamental problems in design, implementation, use of distributed computing systems; hardware topology issues, interprocess communication, concurrency control, synchronization; distributed algorithms; fault-tolerance, reliability. Prerequisites: 055.130 and 055.132.

Signal Processing

055.041 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: 055.012 and 055.018.

055.042 Signals and Systems 3 s.h. Representation and analysis of continuous and discrete-time; analysis in both time and frequency domains; Fourier analysis; sampling theory; z-transforms. Prerequisite: 057.012.

055.141 Power Electronics 3 s.h. Conversion, regulation, control of electric power by means of electronic switching devices; emphasis on switching techniques as they relate to efficiency; semiconductor switching devices; pulse-width modulation; analytical techniques and practical considerations. Prerequisites: 055.14 and 055.60.

055.143 Linear Integrated Electronics 3 s.h. Advanced topics in linear integrated circuits; active loud speaker concepts; noise models; analog voltage multipliers, phase-locked loops; case studies of op amps, regulators, MOS amplifier design. Prerequisite: 055.041.
055:144 Digital Integrated Electronics 3 s.h.
- Principles of operation of digital integrated circuits; logic families; use of four-state transistor models; sources of propagation delay; advanced design concepts; SPICE modeling; transmission line effects. Prerequisite: 055:041.

055:145 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. Prerequisite: 055:042.

055:146 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 technique; theory, application of discrete Fourier transforms/FFT. Prerequisite: 055:042.

055:148 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 segmentation. Prerequisite: 055:042.

055:244 Theory of Adaptive Systems 3 s.h.
- Adaptive filters and signal processing: LMS algorithm; RLS algorithm; adaptive lattice filters; adaptive controls; recent advances in adaptive systems. Prerequisites: 055:146, 055:163, and 055:164.

055:245 Magnetic Resonance Imaging Systems 3 s.h.
- 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: 055:146 and 055:148, or equivalents.

055:247 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-invariant 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: 055:146 and 055:148.

055:248 Advanced Digital Image Processing 3 s.h.
- Visual perception of images (light perception, monochrome vision model, color vision model); advanced image processing (DCT, Hadamard, Haar, Karhunen-Loeve transforms); image restoration (modeling, spatial restoration techniques, spectral image restoration); fuzzy logic for image analysis; geometrical image modification; 3-D imaging; morphological image processing (connectivity, hysteresis transitions, thinning, dilation, erosion, closing, opening). Prerequisites: 055:146 and 055:148.

Communications

055:050 Communication Systems 3 s.h.
- Fourier transform review, Hilbert transforms; narrowband signals, bandpass filters; amplitude and angle modulation systems; random processes, stationarity, ergodicity; noise, noise figure, noise analysis of CW systems; pulse analog modulation; design principles; lab arranged. Prerequisites: 22S:039 and 055:054.

055:150 Communication Theory 3 s.h.
- Random processes, source coding, digital transmission at baseband, optimum receiver design for Gaussian noise error probability, transmission capacity, power spectrum analysis, signal design for broadband channels, digital carrier modulation, bandwidth/energy/error probability tradeoffs, coding for error detection and correction. Prerequisite: 055:050.

055:151 Statistical Communication Theory 3 s.h.
- Representation of signals, random processes; elementary detection and estimation theory; detection of known, unknown signals in noise; estimation of continuous waveforms; application to data processing, communications, radar. Prerequisite: 055:150.

055:152 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. Prerequisite: 055:080.

Controls

055:060 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. Prerequisite: 055:072.

055:066 Electromechanical Systems 3 s.h.
- Electromechanical energy conversion principles; basic rotating machines; direct-current machines; alternating-current machines; power electronics for motor control. Prerequisites: 055:070 and 055:072.

055:068 Power Systems Analysis 3 s.h.
- Fundamentals of three-phase analysis, transmission line parameters, per-unit calculations for systems with machines and transformers, matrix methods for analysis and design, load-flow calculations. Prerequisite: 055:072.

055:160 Control Theory 3 s.h.
- State space approach; controllability, observability, canonical forms: design of Luenberger observers: feedback control via pole placement; stability, minimal realization; advanced topics. Prerequisite: 055:060. Same as 080:133.

055:163 Random Processes 3 s.h.
- Probability, vector random variables, expectations and transformations; random sequences and limit theorems; discrete and continuous random processes; Poisson and multivariate Gaussian processes; Markov chains; spectral analysis, estimation, reliability, other applications. Prerequisite: 055:050.

055:164 Computer-Based Control Systems 3 s.h.
- Digital and discrete 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. Prerequisite: 055:060. Same as 058:134.

055:165 Introduction to Robotics 3 s.h.
- Coordinate transformation; kinematics, inverse kinematics; manipulator dynamics; trajectory planning; manipulator control; force and compliance control; laboratory projects. Prerequisite: 055:060 or consent of instructor. Same as 058:156.

055:266 Advanced Control Theory 3 s.h.
- Optimal control, tracking control, state reconstruction, nonlinear systems, linearization, describing function, optimal filtering. Prerequisite: 055:160. Same as 058:231.

Waves and Materials

055:070 Electromagnetic Theory 3 s.h.
- Electric and magnetic forces, Maxwell’s equations, wave propagation; applications, including radiation, transmission lines, circuit theory. Prerequisites: 22M:042 and 029:018.

055:072 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: 029:018 and 055:041.

055:170 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. Prerequisite: 055:070.

055:172 Solid State Physical Electronics 3 s.h.
- Semiconductor physics, semiconducting devices; elementary quantum mechanics, statistics; transport; bipolar, MOS transistors; physics of device operation as it relates to circuit design. Prerequisites: 029:083 and 055:072.

055:173 Introductory Solid State Physics 3 s.h.
- Phenomena associated with solid state; classification of solids and crystal Structure, electronic and vibrational properties in solids; thermal, optical, magnetic, dielectric properties of solids. Same as 029:193.

055:177 Electromagnetic Foundations of Optics 3 s.h.
- Microscopic origins of macroscopic optical properties of matter; dipole radiation; normal modes of matter; optical activity, anisotropic crystal optics; electro-optical, magneto-optical, acousto-optical phenomena; spatially coherent Brillouin, Raman, Rayleigh scattering. Prerequisite: 055:070 or equivalent. Same as 029:180.

055:178 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: 055:042 and 055:070. Same as 029:184.

055:179 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. Prerequisite: 055:070. Same as 029:182.

055:272 Quantum Electronics 3 s.h.

055:274 Laser Principles 3 s.h.
- Laser theory, stimulated emission, dispersion theory, broadening mechanisms, rate equations, gain saturation, optical resonators, mode-locking, Q-switching techniques, survey of laser types, modes of operation. Prerequisite: 055:170 or equivalent. Same as 029:224.

055:276 Nonlinear Optics 3 s.h.
- Primarily classical treatment of second- and third-order optical nonlinearities; phase matching, harmonic generation, three and four wave mixing, self-focusing, self-phase modulation, stimulated Raman scattering, applications Prerequisite: 055:170. Same as 029:222.

Graduate Seminars, Advanced Topics, Research

055:191 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. Graduate standing required.

055:195 Contemporary Topics in Electrical and Computer Engineering 3 s.h.
- 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. Senior standing required.

055:198 Individual Investigations: Electrical and Computer Engineering 3 s.h.
- 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. Graduate standing and consent of faculty adviser required.

055:199 Research: Electrical and Computer Engineering, M.S. Thesis 3 s.h.
- Experimental and/or analytical investigation of approved topic for partial fulfillment of requirements for M.S. degree with thesis in electrical and computer engineering. Graduate standing and consent of faculty adviser required.

055:291 Seminar: Plasma Physics 3 s.h.
- Discussion of current research. Consent of instructor required. Same as 029:261.

055:295 Advanced Topics in Electrical and Computer Engineering 3 s.h.
- Discussion of current literature in electrical and computer engineering. Consent of instructor required.

055:299 Research: Electrical and Computer Engineering, Ph.D. Thesis 3 s.h.
- Experimental and/or analytical investigation of approved topic for partial fulfillment of requirements for Ph.D. in electrical and computer engineering. Consent of faculty adviser required.
INDUSTRIAL ENGINEERING

Chair: Peter O'Grady
Professors: Kurt M. Anstreicher, Andrew Kusiak, Peter O'Grady, Matthew Rizzo, Michael Vannier, Yinyu Ye

Professors emeriti: John M. Liittschwager, J. Richard Simon

Associate professors: Dennis L. Bricker, Gary W. Fischer, John D. Lee

Associate professor emeritus: Edward M. Mielnik

Assistant professors: Thomas Schnell, Geb W. Thomas

Undergraduate degree: B.S.E. in Industrial Engineering

Graduate degrees: M.S., Ph.D. in Industrial Engineering

Web site: http://www.indeng.ecn.uiowa.edu

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. Undergraduate programs are planned to provide courses on these topics and to provide some opportunity to specialize in specific areas based on individual student interests.

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 advisers 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. While most industrial engineers are employed by manufacturing firms, others work in government agencies or service organizations such as airlines, banks, hospitals, and consulting companies.

Undergraduate Program

The undergraduate curriculum in industrial engineering requires a strong foundation of courses in engineering science, mathematics, design, manufacturing, social sciences, and humanities. Advanced courses include specialty courses in manufacturing operations and robotics, human factors (ergonomics), management, economics and information systems, concurrent engineering, production, quality control, and operations research.

Design is an integral part of the undergraduate program; the department's courses include comprehensive design experiences for students.

### Curriculum

#### FIRST YEAR

<table>
<thead>
<tr>
<th>Semester</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>004:013 Principles of Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>010:003 Accelerated Rhetoric (or 010:001-002)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td></td>
<td>22M:035 Engineering Calculus I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td></td>
<td>056:010 Industrial Engineering</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Freshman Seminar</td>
<td>0 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:005 Engineering I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Humanities elective (see below)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>004:016 Principles of Chemistry Lab</td>
<td>2 s.h.</td>
</tr>
<tr>
<td></td>
<td>22M:036 Engineering Calculus II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td></td>
<td>22M:040 Matrix Algebra for Engineers</td>
<td>2 s.h.</td>
</tr>
<tr>
<td></td>
<td>029:017 Introductory Physics I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td></td>
<td>056:010 Industrial Engineering Freshman Seminar</td>
<td>0 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:006 Engineering II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Sophomore Year</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22M:041 Differential Equations for Engineers</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>029:018 Introductory Physics II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td></td>
<td>056:020 Industrial Engineering Sophomore Seminar</td>
<td>0 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:007 Statics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:009 Thermodynamics I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:014 Engineering Economy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>22S:039 Probability and Statistics for the Engineering and Physical Sciences</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>031:001 Elementary Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>056:020 Industrial Engineering Sophomore Seminar</td>
<td>0 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:008 Electrical Circuits</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:015 Materials Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Economics elective (see below)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Junior Year</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>056:031 Manufacturing Processes</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>056:144 Human Factors and Ergonomics I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:017 Computers in Engineering</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:021 Principles of Design I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Mathematics-statistics elective (see below)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Engineering science elective (see below)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td><strong>Second Semester</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>056:091 Professional Seminar; Industrial Engineering</td>
<td>0 s.h.</td>
</tr>
<tr>
<td></td>
<td>056:131 Manufacturing Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>056:147 Human Factors and Ergonomics II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>057:022 Principles of Design II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Humanities elective (100 level)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td></td>
<td>Technical elective (see below)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

#### Second Semester

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>056:091 Professional Seminar; Industrial Engineering</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>056:134 Concurrent Engineering</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>056:171 Operations Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>056:178 Digital Systems Simulation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Humanities and social science elective</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Technical elective (see below)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

#### Second Semester

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<th>Course Title</th>
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<td>056:091 Professional Seminar; Industrial Engineering</td>
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<tr>
<td>056:134 Concurrent Engineering</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>056:171 Operations Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>056:178 Digital Systems Simulation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Humanities and social science elective</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Technical elective (see below)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

#### Economics Electives

Students may select from the following list.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>06E:100 Economics for Business Decision Making</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:104 Microeconomic Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:119 Economics of the Government Sector</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:125 International Economics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:129 Economic Growth and Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:133 Environmental and Natural Resource Economics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:135 Regional and Urban Economics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>06E:141 Economics of American Industries</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

#### Humanities and Social Science Electives

These must be selected to satisfy the College of Engineering requirements. Noted social science electives are highly recommended. An advising guide for humanities sequences may be obtained from the office of the dean.

#### Mathematics and Statistics Electives

Students may select from the following list.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>22M:042 Vector Calculus for Engineers</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>22M:072 Elementary Numerical Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Advanced statistics course (with adviser’s approval)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

#### Engineering Science Electives

Students may select one of the following.

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>057:010 Dynamics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>057:012 Linear Systems Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>057:018 Principles of Electronic Instrumentation</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>057:019 Mechanics of Deformable Bodies</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>057:020 Mechanics of Fluids and Transfer Processes</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

#### Technical Electives

Undergraduate students in Industrial Engineering are required to complete 12 semester hours of technical elective course work. Students can elect to fulfill this requirement by taking electives in one of five focus areas: computer and information systems; human factors; management; medical systems; and product design and manufacturing. Or they may choose not to pursue a focus area (see “No Focus Area”).

Students pursuing a focus area must choose technical electives listed for that area. However,
they may substitute up to 6 semester hours of other equivalent courses with the permission of their adviser and the department chair. At least 3 semester hours must be taken in an industrial engineering course (prefix 056). Upon completing the 12 semester hours, students receive a department certificate in their focus area.

Focus area electives are as follows.

**COMPUTER AND INFORMATION SYSTEMS**

Total of 12 semester hours

06K:182 Applications of Database Management Systems 3 s.h.
06K:183 Systems Analysis and Design 3 s.h.
06K:184 Introduction to Data Communications 3 s.h.
063:292 Management of Logistics Systems 3 s.h.
22C:016 Computer Science I 4 s.h.
22C:020 Computer Science II 4 s.h.
22C:030 Computer Science III 3 s.h.
Any computer science course numbered from 22C:036 to 22C:054
22C:144 Database Management Systems 3 s.h.
22C:145 Artificial Intelligence 3 s.h.
22C:151 Computer Graphics 3 s.h.
22C:178 Computer Communications 3 s.h.
22C:180 Fundamentals of Software Engineering 3 s.h.
055:033 Introduction to Software Design 3 s.h.
056:132 Introduction to Industrial Robotics 3 s.h.
056:138 Artificial Intelligence in Design and Manufacturing I 3 s.h.
056:150 Information Systems Design 3 s.h.
056:151 Microcomputer Applications 3 s.h.
056:181 Internet Systems Design 3 s.h.

**HUMAN FACTORS**

Total of 12 semester hours

031:012 Introduction to Brain and Behavior 3 s.h.
031:016 Introduction to Cognitive Psychology 3 s.h.
031:106 Attitude Change 3 s.h.
031:110 Psychology of Aggression 3 s.h.
031:119 Human Memory 3 s.h.
031:120 Experimental Psychology I 3 s.h.
031:121 Experimental Psychology II 4 s.h.
031:126 Behavioral Neuroscience 3 s.h.
031:133 Sensation and Perception 3 s.h.
031:134 Cognition and the Brain 3 s.h.
056:240 Human Performance in Engineering Systems 3 s.h.
056:242 Human computer Interaction 3 s.h.
072:154 Biomedical Engineering Physiology 4 s.h.
101:270 Occupational Biomechanics arr.

**MANAGEMENT**

Total of 12 semester hours; students must take at least one of the following two courses and the rest from either list A or list B.

056:150 Information Systems Design 3 s.h.
056:153 Engineering Administration I 3 s.h.

List A:

Courses 063:047, 063:048, 06K:180, and 06M:100 are required for a minor in business administration.

06A:001 Introduction to Financial Accounting 3 s.h.
or
06A:002 Introduction to Managerial Accounting 3 s.h.
06F:047 Introduction to Law 3 s.h.
06F:048 Introduction to Management 3 s.h.
06K:180 Applied Information Systems Communications 3 s.h.
06K:184 Introduction to Data Communications 3 s.h.
06M:100 Introduction to Marketing 3 s.h.
22S:158 Experimental Design and Analysis 3 s.h.

List B:

All of these courses are approved for the Certificate in Technological Entrepreneurship.

06T:127 Entrepreneurship and New Business Formation 3 s.h.
06T:206 Innovation and Change 3 s.h.
06T:208 Entrepreneurship: Business Consulting 3 s.h.
06T:209 Legal Aspects of Entrepreneurship 3 s.h.
06T:210 Developing Professional Service Business 3 s.h.
06T:211 Data Product Design and Development 2 s.h.
06T:219 Managing the Entrepreneurial Process 3 s.h.

**MEDICAL SYSTEMS**

Total of 12 semester hours; these courses cover various areas of health care systems, including methods, tools, and technology; 002:128, 004:014, 004:121, and 004:122 may be applied to the premedical requirement.

002:010 Principles of Biology 4 s.h.
002:011 Principles of Biology II 4 s.h.
002:128 Fundamental Genetics 4 s.h.
004:014 Principles of Chemistry II 3 s.h.
004:021 Basic Measurement 3 s.h.
004:121 Organic Chemistry I 3 s.h.
004:122 Organic Chemistry II 3 s.h.
22C:016 Computer Science I 4 s.h.
051:040 Biological Systems Analysis I 3 s.h.
051:070 Biomedical Measurements I 4 s.h.
051:080 Biomedical Measurements I 3 s.h.
051:085 Biomedical Engineering Systems Design 3 s.h.
051:140 Biological Systems Analysis II 3 s.h.
055:148 Digital Image Processing 3 s.h.
056:150 Information Systems Design 3 s.h.
056:181 Internet Systems Design 3 s.h.
056:186 Medical Informatics and Networking 3 s.h.
056:287 Informatics Tools: Health Care Decision Support 3 s.h.

**PRODUCT DESIGN AND MANUFACTURING**

Total of 12 semester hours

06K:292 Management of Logistics Systems 3 s.h.
056:132 Introduction to Industrial Robotics 3 s.h.
056:138 Artificial Intelligence in Design and Manufacturing I 3 s.h.
056:150 Information Systems Design 3 s.h.
056:151 Microcomputer Applications 3 s.h.
056:153 Engineering Administration I 3 s.h.
056:155 Quantitative Investment Analysis 3 s.h.
056:156 Engineering Economic Decisions 3 s.h.
056:163 Quality Engineering I 3 s.h.
056:164 Reliability Theory and Practice 3 s.h.
056:176 (22S:152) Applied Linear Regression 3 s.h.
056:181 Internet Systems Design 3 s.h.
056:238 Artificial Intelligence in Engineering 3 s.h.
056:253 Engineering Administration II 3 s.h.
056:263 Quality Engineering II 3 s.h.
058:052 Mechanical Systems Design 4 s.h.
058:110 Computer Aided Engineering 3 s.h.
058:133 Control Theory 3 s.h.
058:151 Planar Kinematics and Dynamics of Machines 3 s.h.

**NO FOCUS AREA**

Instead of choosing a focus certificate, students may select 9 semester hours from the list below, plus 3 semester hours with consent of adviser, or 6 semester hours from the list below, plus 3 semester hours from the engineering science electives and 3 semester hours with consent of adviser.

056:098 Individual Investigations: Industrial Engineering 3 s.h.
056:132 Introduction to Industrial Robotics 3 s.h.
056:138 Artificial Intelligence in Design and Manufacturing I 3 s.h.
056:150 Information Systems Design 3 s.h.
056:151 Microcomputer Applications 3 s.h.
056:153 Engineering Administration I 3 s.h.
056:155 Quantitative Investment Analysis 3 s.h.
056:156 Engineering Economic Decisions 3 s.h.
056:163 Quality Engineering I 3 s.h.
056:164 Reliability Theory and Practice 3 s.h.
056:176 Applied Linear Regression 3 s.h.
056:195 Contemporary Topics in Industrial Engineering 3 s.h.
056:240 Human Performance in Engineering Systems 3 s.h.
056:242 Human Computer Interaction 3 s.h.

**Specialization in Quality Engineering**

Quality engineering is the specialization in the engineering profession that is concerned with the design, manufacture, delivery, maintenance, and use of products and services over their life cycles. Since quality is the fitness of these products or services to meet customer needs, engineers must identify and improve quality throughout all phases of product or service creation and use. Quality has an economic dimension in costs that occur during the design, development, manufacture, and use of products and services.

The background requirements of quality engineering are similar to those of industrial engineering. Consequently, a specialization in quality engineering can be obtained through the judicious selection of elective courses in the industrial engineering program. For the quality engineering specialization, 12 semester hours are required from the following list.

22S:158 Experimental Design and Analysis 3 s.h.
056:153 Engineering Administration I 3 s.h.
Students in the graduate program participate in research in the areas of their academic concentration. Ongoing manufacturing research consists of flexible manufacturing systems, design, optimum control of processes, adaptive manufacturing control of turning and welding, parametric robotic control, and automatic pattern recognition of parts. Current research in human factors ergonomics consists of investigating the effects of visual and auditory displays on human information processing, and developing computer systems that ease the challenges of controlling complex medical and robotic systems. This work examines how engineers should shape emerging information technology so that it enhances productivity, safety, and customer satisfaction. Industrial engineering faculty and students work on remote robot systems for Mars and the Chernobyl nuclear reactor and use the National Advanced Driving Simulator, the most advanced simulation facility in the world. Planned projects include designing and building medical simulators, applying wearable computer technologies to information systems, and examining drivers’ response to in-vehicle computers. Some current research in engineering management consists of entrepreneurship, parametric cash flow analysis, strategic management, and economic risk analysis. Quality and production control research currently focuses on measures for corporate quality, computer-aided layout and scheduling, just-in-time production, inspection, and on-line expert systems in process control. Ongoing research in operations research and applied statistics deals with the application of information technology 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 information systems concentrate on the system design. These design problems concern devising information systems that meet a diverse set of requirements. Contemporary topics include network-based systems, client/server systems, internet systems, and medical informatics.

Master of Science

The Master of Science is offered with thesis and nonthesis options. Students considering eventual admission to a Ph.D. program are strongly advised to select the thesis option. Students who hold research or teaching assistantships normally are required to pursue the thesis option. All M.S. students must earn two-thirds of the required semester hours for the degree in the Department of Industrial Engineering. They also must have strong verbal and written skills in the English language. Students also should have strong background in their particular emphasis area; those with insufficient background must take additional course work beyond the minimum semester-hour requirements.

The M.S. with thesis requires a minimum of 30 semester hours of 100- or 200-level courses, including a maximum of 6 semester hours of research. Students in the thesis option must take at least one course from each of three focus areas: human factors, operations research, production systems, and manufacturing systems. At least 9 semester hours must be earned in 200-level courses. M.S. thesis applicants who wish to pursue a Ph.D. degree at The University of Iowa may wish to select two 200-level courses in each of the focus areas to complete the Ph.D. breadth requirement before entering the Ph.D. program.

Students who elect the nonthesis option must complete a minimum of 36 semester hours of course work at the 100 level or above, including at least 9 semester hours of industrial engineering course work at either the 200 level or at the 100 level with the designation “advanced” in the course title.

Entering students are advised by the industrial engineering chair or by a designated faculty advisor. During the first fall or spring semester of the student’s residence, a regular advisor is assigned by the program chair or the graduate program coordinator. During that semester, the student and the advisor prepare a planned program of studies, which they submit to the program chair for approval. Once the plan is approved, it is filed with the student’s record. It is the student’s responsibility to assure that a plan of study is submitted to the program chair.

Entering students in all programs need a background in computer programming, e.g., Java, C++, C, Pascal, or FORTRAN, probability, statistics, and mathematics equivalent to that required in accredited undergraduate engineering programs. Verbal and written skills in the English language also are needed. Engineering management and human factors students find psychology and engineering economics to be useful preparation. Some course work may be required for students with nonengineering backgrounds.

To be eligible for the M.S. degree, students are required to maintain a grade-point average of 3.00 (based on a scale where A=4.00) on all graduate course work at The University of Iowa. They also are required to pass a final comprehensive examination as specified by each student’s examination committee, which consists of at least three members of the Graduate College faculty and must be approved by the industrial engineering chair.

The comprehensive examination may consist of both oral and written parts. Its purpose is to assess the adequacy of the student’s defense of thesis and/or course preparation. The final plan of study, approved by the industrial engineering chair and the dean of the Graduate College, is prerequisite to the exam.

It is the student’s responsibility to submit a degree application to the Graduate College by the college’s deadline. The student should consult with his or her adviser on the composition of the advisory/examination committee and the time and place for the exam.
Doctor of Philosophy

The Ph.D. in industrial engineering is given upon demonstration of comprehensive knowledge and scholarly work at the highest level. A series of written and oral examinations is required, as well as a written dissertation based upon the results of original investigation. The degree requires broad background as well as considerable depth in at least one area of specialization. Students are expected to satisfy the requirements for the M.S. degree in industrial engineering before being admitted to the Ph.D. program.

The Ph.D. requires 72 semester hours of study, including research for the dissertation. This requirement includes at least two semesters in residence at The University of Iowa. A maximum of 36 semester hours earned toward the M.S. may be counted toward the 72 required for the Ph.D.

Actual study requirements above this minimum are specified by the student’s advisory committee. There is no foreign language requirement or special requirement for research techniques. Admission to degree candidacy requires a grade-point average of at least 3.25 (based on a scale where A = 4.00) on all graduate work taken at The University of Iowa, demonstration of capacity for individual achievement, and successful completion of the comprehensive examination.

Entering students are advised by the industrial engineering program chair or by a designated faculty adviser. During the first regular semester of the student’s residence, an adviser is assigned by the program chair or the graduate program coordinator.

During that semester, the student and his or her adviser prepare a plan of study, which they submit to the program chair for approval. Once the plan is approved, it is filed with the student’s record. It is the student’s responsibility to assure that a plan of studies is submitted to the program chair.

Upon completing the course work specified by the adviser and advisory committee, the student is admitted to the comprehensive examination, which includes both written and oral parts. Part of this examination usually includes the presentation of a dissertation proposal, so that the advisory committee can evaluate the student’s academic preparation in light of the research to be performed. Upon satisfactory completion of this examination, the student is accepted as a candidate for the Ph.D. and usually has only to complete and defend the dissertation.

Part-time Ph.D. study is discouraged.

Requirements for the degree are as follows:

INDUSTRIAL ENGINEERING BREADTH REQUIREMENT

Each Ph.D. student must pass at least two 200-level industrial engineering courses in each of three focus areas: human factors, operations research production systems, and manufacturing systems. Students who have earned an M.S. in the department 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 each focus area can be satisfied by passing a written qualifying exam in the focus area or by earning a grade of A or higher in each of two 200-level industrial engineering courses in the focus area.

FOCUS AREA STUDY

Students take at least two more 200-level industrial engineering courses in one of the three focus areas.

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 is conducted by a committee of industrial engineering and Graduate College faculty members. It is scheduled only after the qualifying examination requirement has been satisfied. The examining committee determines whether the student is ready to begin dissertation research. Once the student has completed the comprehensive examination satisfactorily, he or she is accepted as a candidate for the Ph.D. and begins work on the dissertation.

FINAL EXAMINATION (THESIS DEFENSE)

Each student must defend his or her completed dissertation in the final examination, which is conducted by the examining committee.

Admission

Reference letters, student research interests, grade-point average for previous graduate study, and factors such as faculty availability are considered in admission decisions.

Students with an M.S. objective 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 grade-point average of at least 3.00 (based on a scale where A = 4.00) and/or an acceptable score on the Graduate Record Examination (GRE) General Test. Applicants from institutions 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. Students who want to earn a Ph.D. and who have a B.S. degree or an M.S. degree without a thesis usually are first admitted to the M.S. program. All admissions to the Ph.D. program are approved by the departmental graduate studies committee.

Financial Support

A number of one-quarter-time and one-half-time graduate student teaching and research assistantships are available. 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 higher stipend instructor positions. Students should write to the chair of the industrial engineering department for further information.

Special Facilities and Laboratories

Engineering Core

Information about laboratories affiliated with core courses coordinated by other departments can be found in the Catalog sections for each of the other engineering departments.

Required and Elective Course laboratories

Industrial engineering occupies the north wing of the fourth floor in the Seamans Center. Most departmental classes and seminars meet there, and faculty and graduate offices are located there. Departmental laboratories are located in the Seamans Center.

ACTIVE LEARNING FACILITY

The Active Learning Facility (ALF) uses a project-oriented, team-based, hands-on approach to education. The facility provides NT servers, personal computers, and remote plug-ins for students’ laptops. It also offers a variety of software for project management, presentations, and data analysis and reporting.

ADVANCED SYSTEM LABORATORY

The Advanced Systems Laboratory houses research on development and implementation of computational algorithms for the optimization of complex systems.

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
file viewing and manipulation through the World Wide Web.

COMPUTER-AIDED MANUFACTURING (CAM) LABORATORY
The CAM Laboratory is used to teach CAD (computer-aided design) and CAM programming and to set up projects that demonstrate various computer-integrated manufacturing technologies. Hardware and software are available to design parts and plan processing, including generation of CNC program files.

Typical activities conducted in the laboratory include geometric modeling; transfer of geometric files and other design data to conduct process-planning experiments; assignment of part codes and identification of the most cost-effective machine assignments for the part processing; definition of the operation sequences and calculation of optimal process settings; generation of CNC part programs and support data; and download of appropriate machining instructions and data to preset CNC machines (small-scale or full-scale) to make the parts. Laboratory equipment includes IBM, Macintosh, and Apple IIe microcomputers; HP workstations; full-scale virtual tools (milling and turning); and different types of industrial controls, including a machine vision system.

OPERATOR PERFORMANCE LABORATORY
Research in the Operator Performance Laboratory (OPL) focuses on determining human performance in a variety of situations, with particular emphasis on the driving and flight deck environments. A considerable proportion 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.

E-COMMERCE LABORATORY
The E-Commerce Laboratory provides a facility for advanced research on Internet technologies and educational initiatives in key Internet subjects. The laboratory contains the full facilities necessary for a strong Internet capability, including Windows NT workstations, PCs and Macs, UNIX workstations, Internet server software for each platform, Java, VRML, JavaScript, ActiveX, and VBScript programming facilities, videoconferencing cameras and group collaboration software, CAD systems software, and database systems.

Activities at the E-Commerce Laboratory include working with companies to improve their use of the Internet; providing assistance in advanced uses of the World Wide Web; providing seminars and workshops to improve Internet education; and organizing research in key Internet technologies.

Research is under way in a number of key areas, including videoconferencing using the Internet; rapid product development through Internet links with suppliers and customers; virtual reality over the Internet; use of remote databases to access corporate data; use of the Internet to support team-based activities; security of Internet-based activities; and CAD controllers; actuation devices; and reconfigurable construction units for modeling physical material handling.

INTELLIGENT SYSTEMS LABORATORY
The Intelligent Systems Laboratory provides facilities for research that has 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 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.

Courses
Special Topics
056:000 Cooperative Education Training Assignment: Industrial Engineering 0 s.h.
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. Admission to Cooperative Education Program and consent of faculty adviser required.

056:010 Industrial Engineering Freshman Seminar 0 s.h.
Introduction to curriculum and profession; ethics and professionalism in classroom and workplace. Open only to engineering freshmen and transfer students.

056:020 Industrial Engineering Sophomore Seminar 0 s.h.
Curriculum and profession; ethics and professionalism in classroom and workplace. Open only to engineering sophomores and transfer students.

056:091 Professional Seminar: Industrial Engineering 0-1 s.h.
Professional aspects of industrial engineering presented through lectures and discussions by guest speakers, field trips, films, panel discussions. May be repeated. Junior standing required.

056:098 Individual Investigations: Industrial Engineering 0-1 s.h.
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. Consent of course adviser required.

Manufacturing
056:031 Manufacturing Processes 3 s.h.
Fundamentals of processing typical industrial materials including: casting, heat treating, welding, machining, numerical control, forming, finishing; automation, economics, design considerations; planning of manufacturing; performance and quality measurement; laboratory exercises and projects. Offered fall semesters. Prerequisite: 057:015.

056:131 Manufacturing Systems 3 s.h.
Manufacturing as systems consisting of computer and microprocessor-based control systems; part design and manufacture using CAD/CAM, Pro/ER, technical and economic trade-offs regarding the design, selection, implementation of various degrees of computer aiding in manufacturing systems; computer numerical control (CNC) machining, automated material handling, automated assembly, flexible manufacturing systems. Offered spring semesters. Prerequisites: 056:031 and 057:021. or consent of instructor.
056:122 Introduction to Industrial Robotics 3 s.h.
Operation and control of robot systems; robotic sensors and data acquisition; machine vision; software for robot control; design of robotic workcells; laboratory projects. Prerequisites: 056:031 and 057:006.

056:134 Concurrent Engineering 3 s.h.
Devising engineering specifications based on customer needs; development methodologies of products; reengineering of design and manufacturing processes; tools for concurrent engineering; group projects. Offered fall semesters. Prerequisites: 056:031, 056:147, and 057:022.

056:138 Artificial Intelligence in Design and Manufacturing I 3 s.h.
Search techniques, components of intelligence, design of knowledge bases, inference; application of intelligence in design of products, production systems, machine diagnostics, production planning, scheduling. Prerequisites: 056:171 and 057:021.

056:231 Computer-Integrated Manufacturing 3 s.h.
Design and operational issues related to the integration of computers in manufacturing systems; theoretical-and applied topics. Offered fall semesters Graduate standing or consent of instructor required.

056:222 Manufacturing Process Control 3 s.h.
Computer and experimental methods for modeling and controlling manufacturing processes; control algorithms, peripheral hardware, testing, material handling, decision support, lab projects. Prerequisite: 056:131 or 056:231.

056:233 E-Commerce: Product Development 3 s.h.
Computer and experimental methods for analyzing product development using electronic commerce; software for product development; infomarketing. Prerequisite: 056:131 or 056:231 or 056:233.

056:234 Information Systems for Design and Manufacturing 3 s.h.
Information systems that support product and process design. Prerequisite: 056:131 or 056:231 or 056:233.

056:255 Computational Intelligence 3 s.h.
Concepts, models, algorithms, and tools for development of intelligent systems; data mining, expert systems, neural networks for engineering and medical applications. Prerequisite: 056:171.

056:258 Artificial Intelligence in Engineering 3 s.h.
Artificial intelligence concepts, intelligent simulation, development of intelligent systems for applications in industry, medicine, and nonstructured environments; case studies. Prerequisite: 056:171.

Human Factors/Ergonomics

056:144 Human Factors and Ergonomics I 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.

056:145 Psychology in Management 3 s.h.
Application of psychological principles to human relations and supervision; motivation, leadership, communication, group pressures. Offered fall semesters. Same as 031:136.

056:146 Advanced Managerial Psychology 3 s.h.
Selected recent literature on managerial psychology. Offered spring semesters. Prerequisite: 056:145.

056:147 Human Factors and Ergonomics II 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. Prerequisite: 056:144.

056:240 Human Performance in Engineering Systems 3 s.h.
Human performance limits and capabilities relevant to design of engineering systems; focus on cognitive limits associated with information processing. Prerequisites: 056:144 and 056:147.

056:241 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 experimentation and the development of interaction with advanced information technology; emphasis on cognitive task analysis techniques for innovative design, understanding of how technology affects safety, performance, user acceptance. Prerequisite: 056:240 or intermediate statistics course or consent of instructor.

056:242 Human/Computer Interaction 3 s.h.
Development of projects using human factors principles in the design of computer interfaces.

056:243 Modeling Operator Performance 3 s.h.
Modeling techniques that support design and analysis of the human role in complex systems; process and concepts associated with model development and application. Corequisite: 056:171.

056:244 Human Factors in Transportation 3 s.h.
Human capabilities and limitation in transportation context; human factors design from automobiles to spacecraft, transportation environment, air traffic control, crew resource management; related semester project. Corequisite: 056:240 or 056:241 or consent of instructor.

056:245 Assessing Human Visual Performance 3 s.h.
Measuring, modeling, and optimizing human visual performance; display design for optimal legibility, research in visibility, legibility, complicity, and camouflaging; visibility model development. Corequisite: 056:240 or 056:241 or consent of instructor.

056:246 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. Corequisite: 056:240 or consent of instructor.

Engineering Management

056:150 Information Systems Design 3 s.h.
Structure and design of computer-based information systems; concept of information systems, decision making; computer hardware, software, data structures; methods for determining system requirements; designing, implementing, evaluating, managing information systems; applied projects. Prerequisite: 056:147.

056:151 Microcomputer Applications 3 s.h.
Programming and interfacing microcomputers for industrial applications; essentials of microprocessor-based applications: hardware, software, peripherals; control algorithms, interface circuits, software for applications such as process control, machine control, robot systems, product testing, material handling, decision support; laboratory projects. Offered spring semesters. Prerequisite: 057:017 or consent of instructor.

056:155 Engineering Administration I 3 s.h.
Current readings, cases in engineering management; methods for organizing, planning, funding, controlling engineering efforts; nature of the engineering and management function. Offered fall semesters. Corequisite: 057:156.

056:155 Quantitative Investment Analysis 3 s.h.
Investment criteria; benefits/cash-flow analysis; risk analysis; applications in production and quality planning; facilities equipment acquisition and replacement; research, development, design, capital budgeting. Offered fall semesters of odd years. Prerequisites: 226:039 or 226:120 and 057:014 or consent of instructor.

056:156 Engineering Economic Decisions 3 s.h.
Risk decisions and in management applications, decision rules, utility theory, Bayesian analysis and information, conjoint distributions, decision strategies, multicriteria objectives. Offered fall semesters of even years. Prerequisites: 226:039 or 226:120, and 057:014, or consent of instructor.

056:255 Engineering Administration II 3 s.h.
Continuation of 056:153: readings that emphasize practices in superior and high-technology organizations. Offered spring semesters. Prerequisite: 056:153 or consent of instructor.

Quality and Production Control

056:160 Operational Systems Design 4 s.h.
Projects involving the design of products and related operational systems in an industrial or service organization, including associated entrepreneurial or intrapreneurial planning. Offered spring semesters. Prerequisites: 056:134 and 057:014.

056:162 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 spring semesters. Prerequisites: 226:039 or 226:120 or 226:031. Same as 226:133.

Engineering Research and Applications

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THERMAL-FLUIDS 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 turbines; airbag inflators; fuel cells; environmental control devices; and biomedical systems. Work on these systems requires an interdisciplinary team in which the mechanical engineer is an important member.

MECHANICAL SYSTEMS
Mechanical systems and machines are the foundations of human technology. Examples of such systems and devices are manufacturing equipment, medical equipment, automobiles, tractors, aircraft, ships, home appliances, packaging machinery, and robots.

Mechanical engineers find employment opportunities in a wide variety of jobs, including those in industry, government, and education. Mechanical engineers form an integral part of most industries, including aerospace firms, energy-generation utilities, automobile manufacturers, health care providers, food- and metal-processing industries, petroleum refineries, electronic and computer manufacturers, heavy construction and vehicle manufacturers, thermal comfort firms, and farm implement firms.

Undergraduate Program
The objective of the mechanical engineering program is to provide the student with a sound preparation for a career in the field. In addition to the specified courses in the curriculum, students choose social science, humanities, and technical elective courses in accordance with program guidelines. Upper-level students are required to work on team projects in a senior-level capstone design course, 058:086 Mechanical Engineering Design Project. Participation in established research projects may be arranged.

The undergraduate education of a mechanical engineer at The University of Iowa is based on four curriculum stems: mathematics and basic sciences; engineering sciences; engineering design; and humanities and social sciences. Mathematics, physics, and chemistry are considered to be basic disciplines on which a future mechanical engineer must build. Parallel to the mathematics and basic sciences are the engineering sciences: statics, dynamics, thermodynamics, mechanics of deformable bodies, mechanics of fluids and transfer processes, materials science, and electrical sciences. An understanding of these sciences enables a mechanical engineer to design parts of systems, to understand the total mechanical system, to plan the production and utilization of energy, to plan and operate industrial manufacturing facilities, and to design automatic control systems for machines and other mechanical systems.

In addition to the purely mechanical engineering considerations, there are many complex issues in our society that involve environmental, economic, managerial, and political decision making. Therefore, mechanical engineers must possess appreciation of social and humanistic issues relating to business, environment, government, history, language, religion, and international relations.

Curriculum
To earn a Bachelor of Science in mechanical engineering, students must complete a minimum of 128 semester hours of credit. The curriculum is arranged so that courses in the four stems are introduced in an effective sequence and with a balanced emphasis.

*The humanities and social science electives must be selected to satisfy the humanities and social science requirements of the College of Engineering.

FIRST YEAR
First Semester
004:013 Principles of Chemistry I 3 s.h.
010:003 Accelerated Rhetoric 4 s.h.
22M:035 Engineering Calculus I 4 s.h.
057:005 Engineering I 3 s.h.
*Social science elective 3 s.h.
058:090 Mechanical Engineering First-Year Seminar 0 s.h.
Second Semester
004:016 Principles of Chemistry Lab 2 s.h.
22M:036 Engineering Calculus II 4 s.h.
22M:040 Matrix Algebra for Engineers 2 s.h.
029:017 Introductory Physics I 4 s.h.
057:006 Engineering II 3 s.h.

SOPHOMORE YEAR
First Semester
22M:042 Vector Calculus for Engineers 3 s.h.
029:018 Introductory Physics II 4 s.h.
057:007 Statics 2 s.h.
057:009 Thermodynamics 1 3 s.h.
057:015 Materials Science 3 s.h.
Second Semester
22M:041 Differential Equations for Engineers 3 s.h.
057:008 Electrical Circuits 3 s.h.
057:010 Dynamics 3 s.h.
057:019 Mechanics of Deformable Bodies 3 s.h.
*Humanities or social science elective 4 s.h.

JUNIOR YEAR
First Semester
22S:039 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
057:012 Linear Systems Analysis 3 s.h.
057:020 Mechanics of Fluids and Transfer Processes 4 s.h.
057:021 Principles of Design I 3 s.h.
057:018 Principles of Electronic Instrumentation 4 s.h.
058:091 Professional Seminar: Mechanical Engineering 0 s.h.
Second Semester
058:040 Thermodynamics II 3 s.h.
058:045 Heat Transfer 3 s.h.
058:052 Mechanical Systems 3 s.h.
058:091 Professional Seminar: Mechanical Engineering 0 s.h.
*Humanities elective 3 s.h.
Modern science elective 3 s.h.

SENIOR YEAR

First Semester

058:048 Thermal-Fluid Systems Design 4 s.h.
058:055 Mechanical Systems Design 4 s.h.
058:091 Professional Seminar: Mechanical Engineering 0 s.h.
Technical electives 6 s.h.
*Social science elective (100 level) 3 s.h.

Second Semester

058:080 Experimental Engineering 4 s.h.
058:086 Mechanical Engineering Design Project 3 s.h.
Technical electives 6 s.h.
*Humanities elective (100 level) 3 s.h.

Technical Electives

These permit students to develop a broader background and a deeper understanding in selected fields of mechanical engineering. Because most of these courses build on earlier courses in the curriculum, students' choices may result from an interest developed in the basic courses. Students should consult with and obtain approval from their academic adviser before choosing elective courses.

Guidelines for choosing technical electives are as follows.

A minimum of two electives (6 semester hours) from mechanical engineering courses must be taken.

Engineering courses at the 100 level, as well as mathematics, physics, or chemistry courses at a more advanced level than those required in the curriculum, may be taken as technical electives.

One elective course may be chosen from engineering courses that are required in another engineering curriculum.

One course from the Tippie College of Business may be elected, with the exception of accounting or economics courses numbered below 100; economics courses may be taken as social science electives.

A maximum of 3 semester hours of individual investigation may be used as elective credit; individual investigations are not routinely undertaken, but they may be allowed in special circumstances.

Students are encouraged to take courses in several areas to gain a broad background in mechanical engineering. The following are some technical elective courses.

Control Systems Engineering
058:133 Control Theory 3 s.h.
058:134 Computer-Based Control Systems 3 s.h.

Mechanical Systems Engineering
058:110 Computer-Aided Engineering 3 s.h.
058:150 Intermediate Mechanics of Deformable Bodies 3 s.h.
058:151 Planar Kinematics and Dynamics of Machines 3 s.h.
058:152 Vehicle Dynamics and Simulation 3 s.h.
058:153 Fundamentals of Vibrations 3 s.h.
058:155 Intermediate Dynamics 3 s.h.
058:156 Introduction to Robotics 3 s.h.
058:158 Fatigue/Durability in Design 3 s.h.
058:159 Fracture Mechanics 3 s.h.
058:170 Composite Materials 3 s.h.

Thermal Systems Engineering
058:140 Intermediate Thermodynamics 3 s.h.
058:145 Intermediate Heat Transfer 3 s.h.
058:148 Combustion and Propulsion Engineering 3 s.h.

Thermal-Fluid Engineering
058:160 Intermediate Mechanics of Fluids 3 s.h.
058:162 Experimental Methods in Fluid Mechanics and Heat Transfer 3 s.h.
058:165 Elements of Gas Flows 3 s.h.
058:167 Aerodynamics 3 s.h.

General
058:111 Numerical Calculations 3 s.h.
058:113 Mathematical Methods in Engineering 3 s.h.
058:115 Finite Element I 3 s.h.
058:195 Contemporary Topics in Mechanical Engineering arr.

For more information on the undergraduate program in mechanical engineering, see the Undergraduate Student Handbook, available in the department office.

Combined B.S./M.S. Degree

Qualified mechanical engineering undergraduate students may begin earning credit toward a master's degree before completing their bachelor's degree. See "Combined B.S./M.S. Degree" under "Graduate Programs."

Graduate Programs

The goal of the graduate program in the Department of Mechanical Engineering at both the M.S. and Ph.D. levels is to educate students in the disciplines of mechanical engineering in more depth and breadth than is possible at the B.S. level. This preparation allows 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, as well as on sound academic practice. Departmental faculty members have teaching and research expertise in energy 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. M.S. students desiring a more general program may combine electives, while those wishing a degree of specialization in energy conversion, materials engineering, automatic control, or chemical processes may combine departmental courses and appropriate electives from other departments of the College of Engineering and the University. Ph.D. programs may center in any one of these areas through choice of appropriate course work and research topic.

Information on the graduate programs in mechanical engineering is published in the Graduate Student Handbook, available in the department office.

Research

Fluid Mechanics

The graduate program in fluid mechanics provides the student with 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 elucidation of fundamental principles and techniques of solving problems in the various fields of fluids engineering. Computer use, both in mathematical modeling of flow phenomena and in acquisition and processing of experimental data, is emphasized.

Although most of the relevant courses are offered by the Department of Mechanical Engineering, students are strongly encouraged to take applied mathematics and classical mechanics courses offered by the mathematics and physics departments in the College of Liberal Arts and by other departments in the College of Engineering.

Current research projects include computational modeling of viscous and turbulent flows; vortex dynamics; unsteady flows; environmental flows; flow separation and control; biofluid dynamics; automobile aerodynamics; ship hydrodynamics; viscous flow around ships; propulsion flow and propulsor-body interactions; free-surface effects; nonlinear wave theory; hydraulic turbines; quantitative flow visualization and image processing; computational fluid dynamics; LDV and thermal anemometry for flow analysis; and uncertainty analysis.

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 conversion systems. Areas of concentration include fluid mechanics, thermodynamics, heat transfer, phase-change, combustion, and chemically reactive flows.

Most courses relevant to the specialization areas are offered by the Department of Mechanical Engineering. Students are encouraged to supplement these with courses from other areas, such as mathematics and physics, and courses offered by other departments in the College of Engineering in order to balance their programs.
Current research projects include analytical, numerical, and experimental investigations of convective and radiative heat transfer in absorbing and scattering media; laminar and turbulent heat transfer; airbag inflator flow diagnostics and modeling, hot spot ignition of condensed-phase energetic materials, transition to detonation in granular materials; natural convection; turbulent jet as well as turbulent flow; diffusion flames, spray atomization and combustion, multiphase diffusion flames; transport modeling of fuel cells; transport phenomena in materials processing, melting and solidification, porous media, double-diffusive convection; optimal control of thermal systems; and flow visualization of complex convection processes.

**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, and experimentation used to analyze and design mechanical systems. Areas of concentration include machine and vehicle dynamics, operator-in-the-loop simulation, optimal design, structural optimization, computational solid mechanics, robotics, probabilistic mechanics and reliability, reliability-based design and optimization, and fatigue and fracture mechanics.

Although most courses relevant to the specialization areas are offered by the Department of Mechanical Engineering, students are encouraged to consider appropriate courses from other areas, such as mathematics, statistics, physics, and other College of Engineering departments.

Current research projects include design sensitivity analysis of rigid and flexible mechanical systems; computer-aided design; mechanism and manipulator workspace analysis; real-time dynamic simulation; vehicle system dynamics; finite element and meshfree methods for nonlinear mechanics, multiphysics, and multiple-scale problems; stochastic meshfree and finite element methods; design sensitivity analysis of nonlinear structural systems; reliability-based design optimization; shape optimal design of elastoplastic materials; optimal design of metal stamping process; analysis, design, and control of robotic mechanisms; multibody dynamics applied to electric and hybrid vehicles; probabilistic and elastic-plastic fracture mechanics; damage-tolerant design; and fatigue behavior and life prediction under constant and variable amplitude loading.

**Master of Science**

The M.S. program requires a minimum of 30 semester hours of course work and research. Students may choose either a thesis or nonthesis program. Usually, 6 and no more than 9 semester hours of credit for thesis research and writing may be counted toward the 30-semester-hour requirement. Each student determines a plan of study in consultation with an adviser and submits the plan to the department chair for approval.

All M.S. students must register for 058:191 Graduate Seminar: Mechanical Engineering. To earn the M.S., the student must maintain a grade-point average 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 the student’s committee, which consists of at least three faculty members, including at least one with primary appointment in the Department of Mechanical 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.

**Combined B.S./M.S. Degree**

Qualified mechanical engineering undergraduate students who plan to earn a master’s degree in mechanical engineering may enroll in the department’s combined Bachelor of Science/Master of Science program, which enables students to complete the master’s degree in two or three semesters after completing the bachelor’s degree. Students enter the program after the junior year and are allowed to take courses for graduate credit. To be admitted to the program, students must have completed at least 89 semester hours, must have a cumulative grade-point average of at least 3.40, and must submit a letter of application to the chair of the Department of Mechanical Engineering.

**Doctor of Philosophy**

Typically, Ph.D. programs in mechanical engineering require approximately 90 semester hours of credit-including research for the dissertation-beyond a baccalaureate degree. Students must pass the qualifying examination administered in the department to be formally admitted to the doctoral program.

All Ph.D. students must register for 058:191 Graduate Seminar: Mechanical Engineering until they have successfully completed 90 semester hours. After that, students are expected to attend 058:191, but they are not required to register for it.

The student takes the comprehensive examination after passing the qualifying examination and when the course work specified in the plan of study 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, the student must be in good academic standing and must be recommended by his or her adviser. 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, the student usually has only to complete and defend the dissertation at the final examination.

Requirements for the Ph.D. degree usually can be completed in three to four years beyond the M.S. degree.

**Admission**

Students who have earned a baccalaureate or master’s degree in an engineering curriculum or in a curriculum in the mathematical or physical sciences are eligible to be considered for admission to the graduate program in mechanical engineering. In order to be considered for regular admission, the student must have a grade-point average of at least 3.00 on all previous college-level work and minimum Graduate Record Examination (GRE) General Test scores of 500 verbal, 750 quantitative, and 600 analytical or higher. Students whose native language is not English may substitute a Test of English as a Foreign Language (TOEFL) score of 550 or higher on the paper-based test for the GRE verbal requirement.

Students may, under exceptional circumstances, be considered for conditional admission with a lower grade-point average and/or GRE or TOEFL test scores. The student with conditional status must achieve regular status within one semester (excluding summer sessions) after admission. To satisfy this requirement, the conditionally admitted student must attain a grade-point average of at least 3.00 on an initial registration of 9 semester hours 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 regular semester after admission.

**Financial Support**

Financial support is available to M.S. and Ph.D. students, primarily through teaching and research assistantships from the Department of Mechanical Engineering, the Center for Commuter-Aided Design the Iowa Institute of Hydraulic Research, 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 the 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 objectives may receive preference in new assistantship awards. Advanced doctoral students also may qualify for higher stipend instructor positions. All applications for financial support should be submitted directly to the department chair.

M.S. students with a one-quarter-time or more appointment are required to register for a minimum of 9 semester hours during fall and spring semesters until they have completed 30 semester hours of course and research work beyond the baccalaureate degree. Ph.D. students with one-quarter-time or more appointments must register for a minimum of 9 semester hours during fall and spring semesters until they have completed 90 semester hours of course.
and research work beyond the baccalaureate degree. Once they meet these minimums, graduate students must register for a minimum of 2 semester hours. Students with appointments must register during summer sessions. 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.

Special Facilities and Laboratories

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 engineering departments, see the subsection for each department.

Required and Elective Course Laboratories
The mechanical engineering laboratory for experimental engineering provides undergraduate students with exposure to contemporary measurement theory, sensors, signal conditioners, instrumentation, and computer-aided data acquisition systems.

The laboratory for mechanical engineering design projects provides for either team or individual project activities in mechanical engineering design, construction of mechanisms, and testing.

The thermal and heat transfer laboratory is equipped with data acquisition systems to process data on-line on computers. Experiments in heat transfer measurements are made in this laboratory.

Graduate Facilities

FLUID MECHANICS
The program in fluid mechanics is conducted in close collaboration with the Iowa Institute of Hydraulic Research (IIHR), which houses some of the most modern research facilities in the world. 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, a 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 several national centers.

THERMAL SCIENCES
Facilities for research in the thermal sciences and systems consist of a low-pressure 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, a 20-liter explosion vessel, an airbag inflator test rig, an air atomization spray apparatus, test stands for melting and solidification studies, various optical measurement systems, and two commercial direct digital control systems. 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.

Several laboratories are served by computer-based data acquisition systems.

MECHANICAL SYSTEMS
Experimental facilities for the fatigue and fracture mechanics segment of the department include access to a scanning electron microscope, a field computer data acquisition system, state-of-the-art computer controlled servo-hydraulic closed-loop fatigue test equipment, and equipment for characterization of material properties. Conventional strength of materials test equipment also is available.

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 highperformance computer systems in support of its technology research and development efforts. A 16-processor HP Exemplar S-class supercomputer with 3GB of main memory and over 45GB of local disk space provides resources for extensive engineering analysis capabilities using a wide variety of industry-standard and locally developed software. General computing services are supported with a number of UNIX and Windows NT applications servers connected to centralized file servers. CAD/CAE, software development, virtual prototyping, and virtual environment development applications are hosted on more than 40 Hewlett-Packard and Silicon Graphics UNIX workstations. Standard desktop, multimedia, and office productivity applications are hosted on a network of more than 400 Pentium II-class Windows NT workstations.

The center supports access to UNIX resources from a distributed network of X terminals and via X server software on the Windows NT workstations. It also supports several Sun workstations for dedicated project development activities and general software porting.

Anchoring this collection of computing resources is a sophisticated, high-bandwidth network, which uses a combination of 100BaseT FastEthernet, switched 10BaseT Ethernet, and shared 10BaseT Ethernet technology in conjunction with a Cisco 7200 router to provide secure, efficient communications. Data storage for UNIX systems is provided by a centralized, high-availability, high-reliability Network Appliance file server with over 150GB of usable storage and 50GB of directly accessible online backup. This file server features additional hot-plug, automatic rebuild of failed disks, and hot-swappable disk drives to provide more than 99.9 percent uptime. CCAD also maintains facilities for the production of video, web-based multimedia, and CD-ROM-based data archiving and distribution in addition to a collection of standard laser printers and high-resolution color printers.

Courses

Special Topics
058:005 Cooperative Education Training
Assignment: Mechanical Engineering
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. Admission to the Cooperative Education Program and consent of the cooperative education faculty adviser required.

058:080 Experimental Engineering

058:086 Mechanical Engineering Design Project
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. Corequisite: 058:048 or 058:055.

058:090 Mechanical Engineering First-Year Seminar
Introduction to the mechanical engineering curriculum, profession; visits to laboratories, industries. Open only to first-year and transfer students.

058:091 Professional Seminar: Mechanical Engineering
Professional aspects of mechanical engineering: presentations, student/faculty interaction, professional society involvement, panel discussions, plant trips. Junior Standing required.

058:098 Individual Investigations: Mechanical Engineering
Individual projects for mechanical engineering undergraduate students; laboratory study; engineering design project; analysis, synthesis, simulation of an engineering system; computer software development, research. Consent of adviser required.

General Topics
058:110 Computer-Aided Engineering
Computer methods for aiding design and analysis of mechanical and structural systems, solid modeling by commercial software, use of commercial finite element codes for applications in computational fracture mechanics and reliability-based design, examples from industry. Prerequisites: 057:019 and 058:052 or equivalents. Same as 053:115.

058:111 Numerical Calculations
Development of algorithms for functional approximations, numerical differentiation and integration; solution of algebraic and differential equations, with emphasis on computational methods; initial and boundary value problems. Prerequisite: 22M:041. Same as 053:111.

058:113 Mathematical Methods in Engineering
058:115 Finite Element I 3 s.h. One and two-dimensional boundary value problems; heat flow, fluid flow, torsion of bars and frames; isoparametric mapping; higher order elements; elasticity problems; use of commercial software. Prerequisite: 057:019. Same as 053:115.


058:212 Analytical Methods in Thermo-Fluid Mechanics 3 s.h. Theory and solution techniques for ordinary and partial differential equations and integral equations of interest in thermodynamics, fluid dynamics; Sturm-Liouville problems; nonlinear differential systems; stability, bifurcations, chaos, regular and singular perturbation theory; matched asymptotic expansions, multiple time-scale methods; classification of partial differential equations; method of characteristics, separation of variables, Green’s functions; calculus of variations; Hamiltonian systems; Galerkin method; integral equations; ill-posed and ill-conditioned problems Prerequisite: 058:113. Same as 053:212.

058:214 Analytical Methods in Mechanical Systems 3 s.h. Functional analysis applied in mechanics and dynamics; calculus of variations; variational methods such as the Ritz and Galerkin methods; ordinary differential equations; boundary and initial value problems; perturbation of linear systems. Prerequisite: 058:113. Same as 053:214.

058:215 Finite Element II 3 s.h. Computer implementation; plate and shell elements; mixed and hybrid formulations; nonlinear analysis; recent developments; introduction to boundary element method, Prerequisite: 053:133. Same as 053:233.

Thermal Engineering and Fluids

058:040 Thermodynamics II 3 s.h. Power and refrigeration cycles; mixtures of gases, psychometric mixtures; availability; thermodynamics of chemical equilibrium. Prerequisites: 22M:036 and 057:009.

058:045 Heat Transfer 3 s.h. Principles of heat transfer by conduction, convection, radiation; analytical and numerical methods of solution; applications to engineering problems Prerequisite: 057:020.

058:048 Thermo-Fluid Systems Design 4 s.h. Design of thermal-fluid systems; economics, life-cycle costs, modeling of thermal-fluid systems, simulation, and optimization techniques; final report and written reports. Prerequisites: 057:021, 058:040, and 058:045.

058:140 Intermediate Thermodynamics 3 s.h. Thermodynamics of irreversible processes, kinetic theory, thermodynamic relations, real gas behavior, local equilibrium, multiphase systems, numerical applications to selected topics. Prerequisite: 058:040.

058:145 Intermediate Heat Transfer 3 s.h. Steady and unsteady conduction, forced and natural convection; surface and gases radiation; condensation and evaporation; analytical and numerical methods and applications. Prerequisite: 058:045.

058:148 Combustion and Propulsion Engineering 3 s.h. Chemical kinetics, thermodynamic equilibrium, transport equations; thermodynamics of fluid flows; laminar flames; basic gas turbine cycles; propulsion systems-open gas turbine cycles, turboprop, turbofan, turbojet, ramjet; supersonic inlets; nozzle flow; experimental analysis; laminar and turbulent internal and external flows; potential flows; manufacturing applications. Prerequisite: 057:020. Same as 053:169.

058:162 Experimental Methods in Fluid Mechanics and Heat Transfer 3 s.h. Review of theory, importance of experiments; modeling and scaling laws; experimental environment and facilities; measurement at full scale and on scaled models; use of wind and water tunnels, towing tanks, and hydraulic flumes; instruments for measuring pressure, temperature, velocity, turbulence; error analysis; data acquisition and processing; laboratory demonstrations, hands-on experiments, project. Prerequisite: 058:080 or equivalent. Same as 052:172.

058:165 Elements of Gas Flows 3 s.h. Thermodynamics of compressible fluid flow, with applications of continuity, momentum, energy equations; normal and oblique shock waves; Prandtl-Meyer expansion waves; flow with variable and constant area; FannoFlow, compressible flow with and without heat transfer. Prerequisites: 057:020 and 058:040.

058:167 Aerodynamics 3 s.h. Equations of fluid motion: inviscid-flow theory, airfoil and wing parameters; thin- and thick-airfoil theory; viscous effects; laminar and turbulent boundary layers, flow-over-finite, swept, planar, and delta wings; compressible subsonic and transonic flow past airfoils, supersonic airfoils. Prerequisites: 22M:041 and 057:020.

058:245 Convection Heat Transfer 3 s.h. Convection and diffusive transport of mass and momentum; phenomenological laws and analogies; diffusive transport properties; steady, transient, moving boundary problems; numerical solution techniques; inverse heat conduction; coupled heat and mass diffusion; diffusion in multiphase and multicomponent systems. Prerequisite: 058:145.

058:246 Convective Heat Transfer 3 s.h. Convective heat transfer; analysis of forced and free convection; differential and integral formulation of boundary layers, heat, mass, momentum transfer in laminar and turbulent flows; tubes and external surfaces; combined forced and free convection; convection at high velocities; heat transfer with phase change. Prerequisite: 058:145.

058:247 Radiative Heat Transfer 3 s.h. Radiant energy transport and analysis of radiative Interchange among surfaces separated by nonparticipating and participating media; radiation properties of solids, gases, pyrometry; combined radiation-conduction and radiation-convection heat transfer. Prerequisite: 058:145.

058:248 Combustion Theory 3 s.h. Laminar flame theory; turbulent combustion; spray combustion; thermal ignition; pollutant formation; oxidation; combustion diagnostics. Graduate standing required Prerequisites: 058:145 and 058:160.


058:262 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; inviscid flow with vorticity; inviscid compressible flow; numerical methods for solution of inviscid flows. Prerequisite: 058:160. Same as 053:277.

058:264 Vortex Dynamics 3 s.h. Dynamics of vorticity transport in incompressible flows; vortex patches, sheets, rings, vortex filament models; viscous vortex flows; vortex-based computational methods; vortex reconnection, breakdown; applications to wake flows, turbulent coherent structures and aerodynamics. Prerequisite: 058:262.

058:265 Waves in Fluid 3 s.h. Acoustic wave theory; general solutions of plane, cylindrical, spherical waves; reflection and refraction of sound waves; kinematic waves; flow water waves; hydraulic jumps, infinitesimal wave theory; Kelvin ship wave patterns; nonlinear water waves; propagation of solitary waves; ocean waves. Prerequisites: 053:133 and 058:160.

058:267 Multiphase Flow and Heat Transfer 3 s.h. Basic models, adiabatic two-phase flow; pool, convective boiling; condensation; multicomponent boiling, condensation; mathematical models and equations; instantaneous space-averaged equations, local time-averaged equations; gas-solid flows; liquid-solid flows Prerequisites: 058:145 and 058:160.

058:268 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 shear flows; development of computational methods. Recent literature on theory and applications, chaos phenomena Prerequisite: 058:160.

058:269 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 Graduate standing required. Prerequisite: 058:111.

058:296 Advanced Topics in Thermal and Fluid Engineering 3 s.h. Thermodynamics, fluid mechanics, heat and mass transfer, related experimental and analytical techniques; selection of subject and content determined by instructor/student interest. Graduate standing required.

Mechanical Systems

058:052 Mechanical Systems 3 s.h. Topics in stress, deflection, stiffness, statistics, reliability, material behavior, manufacturing processes, static and variable loads, fatigue strength in design analysis of mechanical systems; introduction to finite element analysis and established computational software. Prerequisite: 057:019. Corequisites: 225:039, 057:015, and 057:021.

058:055 Mechanical Systems Design 3 s.h. Design considerations for mechanical engineering systems; strength, deformation, durability of mechanical elements; safe-life, fail safe, damage-tolerant design; standards, products liability, ethics in design; data-acquisition/life-prediction experiment. Prerequisite: 058:052.

058:133 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 Prerequisite: 055:060. Same as 055:160.

058:134 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, parameter estimation, examples of optimal and adaptive controls; lab arranged. Prerequisite: 055:060 Same as 055:164.

058:150 Intermediate Mechanics of Deformable Bodies 3 s.h. Application of equilibrium, strain-displacement relations, and constitutive relationships to practical structural systems and elementary plane elasticity problems Prerequisite: 057:019. Same as 051:151, 053:140.

058:151 Planar Kinematics and Dynamics of Machines 3 s.h. Modeling techniques in kinematic and dynamic analysis of constrained planar mechanical systems; numerical methods in solving equations of kinematics and dynamics; emphasis on computational methods for large-scale systems Prerequisites: 057:010 and 058:052.

058:152 Vehicle Dynamics and Simulation 3 s.h. Vehicle dynamic response; suspension, steering, braking, and powertrain system design; computer aided system simulation; tire modeling; acceleration and steady-state turning performance. Prerequisites: 057:010 and 057:012.

058:153 Fundamentals of Vibrations 3 s.h. Vibration of linear discrete and continuous mechanical and structural systems; harmonic, periodic, and arbitrary excitation; modal analysis; applications. Prerequisite: 057:019. Same as 053:132.

058:155 Intermediate Dynamics 3 s.h. Theoretical and applied Newtonian, Eulerian, Lagrangian, and accelerated motion Prerequisite: 057:010.
058:156 Introduction to Robotics 3 s.h.
Introduction to robot components, types, power systems, mechanics, and control; homogeneous transformations, Denavit-Hartenberg formulation for serial kinematic chains, direct and inverse kinematics of serial manipulators, differential rotations and translations, manipulator Jacobian, inverse Jacobian, trajectory planning, position and force control of manipulators. Consent of instructor required. Prerequisites: 22M:042 and 057:010. Same as 055:165.

058:158 Fatigue/Durability in Design 3 s.h.
Macro- and micro-mechanisms of fatigue behavior, design of engineering materials/components/structures subjected to cyclic loading, emphasis on metal stress-life, strain-life, linear elastic fracture mechanics approach TV fatigue crack growth, safe-life, fail-safe, damage tolerant design; constant and variable amplitude life predictions; notches, residual stress, corrosion, temperature, multiaxial, weldments. Prerequisite: 051:085 or 058:055 or 058:150 or equivalent. Same as 053:148.

058:159 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. Prerequisite: 051:085 or 058:055 or 058:150 or equivalent. Same as 053:149.

058:170 Composite Materials 3 s.h.
Mechanics of solid multiphase systems, with applications to lightweight structures, ultrastong materials, materials for the protection of the body and replacement of human tissues; composites with fibrous, lamellar, particulate, cellular structures; composites of biological origin. Prerequisite: 058:150. Same as 051:177, 053:137.

058:179 Continuum Mechanics and Elasticity 3 s.h.
Cartesian tensors and geometrical foundations; concept of stress, strain, motion; fundamental physical laws; constitutive equations and finite elasticity; equations of linear elasticity, elastic extension, tension and bending of bars. Prerequisite: 057:010. Corequisite: 058:113 or graduate standing. Same as 053:141.

058:231 Advanced Control Theory 3 s.h.
Optimal control, tracking control, state reconstruction, nonlinear systems, linearization, describing function, optimal filtering. Prerequisite: 055:160. Same as 055:266.

058:250 Advanced Computer-Aided Engineering 3 s.h.
Object-oriented engineering system abstraction, C++ programming technique, object-oriented software construction for engineering problems, engineering knowledge on software development methodology and computer networks. Graduate standing required.

058:251 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. Prerequisite: 053:141. Same as 053:243.

058:252 Mechanical Design in Dynamics 3 s.h.
Mechanical system dynamic analysis, synthesis, design optimization. Prerequisites: 058:151, 058:155, and 058:253.

058:253 Computational Methods in Dynamics 3 s.h.
Computational methods in formulation and computer solution of equations of motion of large-scale mechanisms, machines, planar and three-dimensional systems. Prerequisites: 058:113. 058:151, and 058:155.

058:254 Energy Principles in Structural Mechanics 3 s.h.
Principles of virtual work; stationary and minimum potential energy; calculus of variations; Ritz method, Galerkin's method; beams, plates, Hamilton's principle; elastic stability, extremum principle of plasticity. Prerequisites: 058:113 and 058:150. Same as 053:244.

058:255 Topics in Solid Mechanics 3 s.h.
Computational methods for hyperelasticity, elasto-plasticity, visco-elasticity, plasticity; contact problems; plate and shell; time integration methods and stability; meshfree methods: topology optimization; optimization of structural systems; probability theory; transformations of random variables and probability distributions; computational methods for probabilistic mechanics and reliability; random eigenvalue problem, stochastic finite difference and finite element methods. Same as 053:242.

058:256 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: 058:113, 058:155, and 058:151; or equivalents.

058:259 Mechanical Design in Structures 3 s.h.
Discrete and continuum variational equilibrium equations, discrete design sensitivity analysis for static responses and eigenvalues, interactive design workstations, continuum sizing design sensitivity analysis for static responses and eigenvalues, design sensitivity analysis of structural dynamics, diffractability theory, shape optimal design, shape design sensitivity analysis, design sensitivity of nonlinear structural systems. Prerequisites: 058:113, 058:115, and 058:150.

058:270 Micromechanics of Solids 3 s.h.
Local micromechanics and Eshelby's inclusion theory; homogenization procedures of heterogeneous materials; effective elastic, visco-elastic, and plastic behavior of composites; micromechanics of other advanced materials; computational micromechanics. Prerequisite: 053:141 or 058:179. Same as 053:245.

058:295 Advanced Topics in Mechanical Systems Engineering 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

058:190 Readings in Mechanical Engineering arr.
For nonengineering majors who want credit in undergraduate engineering courses. May be repeated. Graduate standing required.

058:191 Graduate Seminar: Mechanical Engineering 0 s.h.
Presentation and discussion of recent advances and research in mechanical engineering by guest lecturers, faculty, students. Graduate standing required.

058:195 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. Junior standing required.

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. Graduate standing and consent of advisor required.

Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for M.S. with thesis in mechanical engineering. Graduate standing and consent of advisor required.

Experimental and/or analytical investigation of an approved topic for partial fulfillment of requirements for Ph.D. in mechanical engineering. Consent of advisor required.
## Graduate College

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Interim dean: John C. Keller  
Assistant deans: Sandra Barkan, William C. Welburn  
Graduate examiner: Caren Cox  
Web site: [http://www.uiowa.edu/~gradcoll](http://www.uiowa.edu/~gradcoll)
The University of Iowa has been a leading center of advanced study for three-quarters of a century. Presently, more than one-fifth of its enrollment is in the Graduate College. This unusually 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 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.Acc.), 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 Health Administration-M.A.*, Ph.D. of the Graduate College. For details, see sections XII,E. of the Catalog.

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. For details, see sections XII,E. of the Catalog.

Interdisciplinary Master’s and Doctoral Programs

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Joint Degree Programs

Joint law and Graduate Degrees

Joint programs under which students can pursue degrees simultaneously in the College of Law and the Graduate College have been developed with the law college and a number of departments in the Graduate College. See the College of Law section of the Catalog.
Joint Programs within the Graduate College

Various joint programs have been developed whereby students work simultaneously toward two graduate degrees. Consult the appropriate sections of this Catalog for more information. Established joint programs include business administration/library and information science; economics/urban and regional planning; health management and policy/business administration; health management and policy/urban and regional planning; social work/urban and regional planning; preventive medicine and environmental health/urban and regional planning; and business administration/nursing.

Joint B.S./M.S. Program in Mechanical Engineering

The B.S./M.S. degree program in mechanical engineering is offered jointly by the Graduate College and the College of Engineering. The program allows students to begin accruing graduate credit and participating in master’s research before they have been awarded a baccalaureate degree. For more information, see the College of Engineering section of the Catalog.

Medical Scientist Training Program

The Medical Scientist Training Program (MSTP) is an interdisciplinary M.D./Ph.D. program offered jointly by the College of Medicine and the Graduate College. See “Medical Scientist Training Program” in the College of Medicine section of the Catalog.

Certificate Programs

The Graduate College participates in a number of University of Iowa certificate programs. Detailed information about the following certificate programs in rhetorics of inquiry and transportation studies is provided later in this section of the Catalog.

Advanced Practice Nursing

The post-master’s degree certificate program in advanced practice nursing allows for advanced clinical training in four specialty tracks: pediatric nurse practitioner, adult/gerontology nurse practitioner, family nurse practitioner, and psychiatric/mental health nursing. Certificate requirements include advanced clinical core courses and a sequence of specialty courses. Successful completion of the specialty sequence qualifies a student to sit for professional certification examinations. Completion of the certificate program is noted on the student’s transcript. For more information, see the College of Nursing section of the Catalog.

Aging Studies

The Aging Studies Program is a multidisciplinary nondegree certificate program administered by the College of Liberal Arts in cooperation with other colleges of The University of Iowa. The 21-hour program is designed to complement graduate degree programs for students with academic, professional, research, or service career interests in aging. An entry is made on a student’s transcript certifying completion of an approved curriculum in aging studies. For more information, see “Aging Studies Program” in the College of Liberal Arts section of the Catalog.

American Indian and Native Studies

The American Indian and Native Studies Program offers an interdisciplinary certificate program focusing on the histories, cultures, languages, arts, crafts, beliefs, 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. Successful completion of the program is noted on the student’s transcript. See “American Indian and Native Studies” in the College of Liberal Arts section of the Catalog for a list of faculty and program description.

Book Studies/Book Arts and Technologies

The certificate program in book studies/book arts and technologies offers an interdisciplinary approach to the study of the relationship between the book in culture and book arts and technologies. It also provides the opportunity for focused laboratory or academic investigation into either area. Successful completion of the program is noted on the student’s transcript. See “Center for the Book” in the College of Liberal Arts section of the Catalog for information about the center’s faculty and the certificate program.

Global Health Studies

The interdisciplinary Global Health Studies Program emphasizes international health problems and solutions and compares U.S. and foreign health practices. Certificate requirements include core courses, electives, foreign study and/or internship, a research project, and foreign language skills. Completion of the certificate program is noted on the student’s transcript. For more information, see “Global Health Studies” in the College of Liberal Arts section of the Catalog.

Health Informatics

Health Informatics is an interdisciplinary certificate program that develops applications and technologies in support of the various processes that collectively define health care. Processes such as problem diagnoses, treatment, outcome measures, policy formulation, laboratory examinations, and student education all underlie health informatics efforts. Completion of the certificate program is noted on the student’s transcript. For more information, see the College of Nursing section of the Catalog.

Nursing Informatics

The certificate program in nursing informatics focuses on methods and technologies of information handling in nursing. It familiarizes students with the development, support, and evaluation of applications, tools, processes, and structures that help nurses manage data in direct patient care and administrative and management support systems. The program is available for master’s, postmaster’s, doctoral, and postdoctoral students. Completion of the program’s requirements is entered on the student’s transcript. For more information, see the College of Nursing section of the Catalog.

Rhetorics of Inquiry

The Project on Rhetorics of Inquiry offers an interdisciplinary certificate program intended to help students develop their skills of inquiry, writing, and teaching, both within their own disciplines and across the humanities, social sciences, and the learned professions. Successful completion of the program’s requirements is entered on the student’s transcript. See “Project on Rhetorics of Inquiry” in the Special Resources at Iowa section of the Catalog; for a full description of the certificate program, see “Rhetorics of Inquiry” in this section of the Catalog.

Sacred Music

The interdisciplinary certificate program in sacred music combines course work in music, religion, art history, and history. Successful completion of the certificate program is entered on the student’s transcript. For more information, contact the School of Music.

Transportation Studies

The Program in Transportation Studies is an interdisciplinary, nondegree program that coordinates course work leading to student certification in the areas of planning, analysis, and operation of transportation systems. Students participate in the program to complement work toward a graduate degree in civil and environmental engineering, geography, or urban and regional planning. When the graduate degree is awarded, an entry is made on the student’s transcript certifying completion of the Program in Transportation Studies. For more information, see “Transportation Studies” in this section of the Catalog.

Interuniversity Center for Film and Critical Studies in Paris

The University of Iowa is one of a consortium of 21 colleges and universities associated with the Council on International Educational Exchange (CIEE), which sponsors the Film Studies Program and the Contemporary Criticism and Culture Program. These are two unique academic opportunities offered at the Centre Universitaire Americain du Cinema et de la Critique a Paris.
The Film Studies Program is designed to explore film theory and analysis—not to train filmmakers or technicians. The curriculum provides courses and seminars in film theory, formal structures, history, and ideology. Participants study the relationships between film and other art forms, film culture, film and language, and film and psychoanalysis. Students discuss the evolution of the early cinema; the silent films of Griffith, Lang, Eisenstein, and Keaton; the classic Hollywood film; French cinema during and after the transition to sound; and European and American avant-garde cinemas. Participants study the works of Metz, Freud, Barthes, Lacan, Althusser, Foucault, and others to gain an understanding of contemporary French culture, mass media, and the visual arts.

The Contemporary Criticism and Culture Program focuses on recent developments in French political thought and social institutions, linguistics, social sciences, and literary theory. It draws on recent theoretical concepts in the fields of linguistics, psychoanalysis, anthropology, history, and philosophy to analyze verbal and audiovisual representations in literature, painting, photography, film, and television. The interdisciplinary nature of this program makes it relevant not only to French majors but also to students of other disciplines concerned with the problems of criticism and culture. It is of particular value to those who want to explore the applicability of modernist French theory to a variety of disciplines.

A recent addition to the program is a specialization in history characterized by the application to historical research of insights from other fields, such as linguistics, cultural geography, anthropology, sociology, and economics. Particularly distinctive in the French historical approach has been a preoccupation with the long-term evolution of populations and the social, economic, and cultural development of groups of ordinary people, seen in their urban or regional contexts. Students may concentrate in one of these programs entirely or develop an individual program combining elements from both study center components.

Participating students are registered in the University of Paris III- Censier and are eligible to take selected courses within the University of Paris as well as those sponsored directly by the center. The program is open to both undergraduate and graduate students from The University of Iowa. For more information, contact the Department of Communication Studies.

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. For more information, see “Research and Interdisciplinary Activities” in the Special Resources at Iowa section of the Catalog.

Financial Support

 Approximately half of the University’s graduate students receive some form of University-administered financial assistance. Eligibility requirements and application procedures are set forth in “Section VII. Graduate Appointments” in “Rules and Regulations of the Graduate College” in this section of the Catalog. The following are the primary sources of assistance.

**TEACHING AND RESEARCH ASSISTANTSHIPS**

Available in most departments; stipends typically range between $14,130 and $17,270 for half-time assistants; assistants also are eligible for tuition scholarships. Assistants (one-quarter time or more) are classified as residents for fee purposes.

**IOWA ARTS FELLOWSHIPS**

For first-year University of Iowa graduate students entering M.F.A. programs; typical stipends are $13,000 for the academic year, with all tuition paid, for as many as two years (the second year being contingent on demonstrated exceptional progress toward completion of the M.F.A.); no departmental service obligations.

**IOWA INCENTIVE FELLOWSHIPS**

One-year awards for doctoral students new to graduate study at The University of Iowa; 12-month stipend of $15,600, with all tuition paid; no departmental service obligations.

**GRADUATE OPPORTUNITY FELLOWSHIPS**

For first-year graduate students from underrepresented ethnic minority groups; one-year stipend of $12,000 plus tuition for the academic year.

**THE UNIVERSITY OF IOWA FELLOWSHIP PROGRAM**

For first-year graduate students entering doctoral programs; typical stipends are $18,000 per year on a year-round basis, with all tuition paid, for as many as four years; departmental participation assures that the recipient will be involved in teaching, research, and departmental affairs; in two years out of four and in all summers, recipients may pursue studies, research, or writing full time.

**SCHOLARSHIPS**

Scholarships provide up to full tuition and fees.

**GRADUATE COLLEGE FELLOWSHIPS**

Graduate College fellowships provide $13,000 for the academic year.

**OTHER SOURCES**

For other sources of financial support, see “Financial Aid” in the Learning at Iowa section of the Catalog or consult 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.

**Rules and Regulations of the Graduate College**

The following text is from the Manual of Rules and Regulations of the Graduate College. The most updated version of this manual is available on-line; see “Graduate College Publications” on the Graduate College web site.

**The Academic Program**

**Section I. Admission to the Graduate College**

**A. APPLICATION PROCEDURE**

All students seeking to register for the first time in the Graduate College of The University of Iowa must secure formal admission from the director of Admissions. Applicants may obtain the proper forms from the Office of Admissions. In addition to these forms, official transcripts, test scores, and other supporting material must be submitted by the designated deadline prior to the session in which admission is expected. Specific deadline dates will be established by the dean of the Graduate College and the director of Admissions and printed in the Catalog and elsewhere.

**B. GRADUATE RECORD EXAMINATION**

All applicants prior to consideration for admission should take the General (Aptitude) Test of the Graduate Record Examination (GRE) or, for applicants to graduate programs in business administration, the Graduate Management Admission Test (GMAT). Applicants for whom admission data are complete, with the exception of scores on the GRE or the GMAT, may, depending on departmental policy, be admitted if they meet all other requirements. The GRE, or the GMAT, must be taken before the end of the student’s first session of enrollment. The test is given at test centers established under the direction of Educational Testing Service, Princeton, New Jersey. The judgment of acceptable levels of performance on this test and its weight in the decision on admission of a student is left to the departments. Some departments in fields where GRE Subject (Advanced) Tests are available require these in addition to the General (Aptitude) Test. Inquiries about the General
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(Aptitude) Test may be directed to University Evaluation and Examination Service, and inquiries about the requirement of the Subject (Advanced) Test should be addressed to the executive of the department in which the applicant is interested.

C. ENGLISH FOR INTERNATIONAL STUDENTS
Prior to consideration for admission, international student applicants whose native language is other than English must take and pass TOEFL (Test of English as a Foreign Language), unless they have received a degree from an accredited college or university in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand. The examination is given at various times of the year and in many centers throughout the world. Inquiries should be addressed to the director, TOEFL, Educational Testing Service, Princeton, New Jersey 08541.

International students transferring from unfinished degree programs of other universities in the United States who have not taken this examination, or who have received a grade lower than the minimum established by the Graduate College dean, must take the TOEFL examination and receive a passing grade prior to consideration for admission.

The Graduate College will advise the departments of those students barely passing the TOEFL test. Such students will be required to sit for an English evaluation upon arrival in Iowa City. Individual departments will require these students to take and pass recommended course work in English usage at The University of Iowa designed especially for international students.

D. EARLY ADMISSION
A student who is within six semester hours of having satisfied all the requirements for the bachelor’s degree at The University of Iowa or any other accredited college may be given provisional admission.

E. CANDIDACY
Admission to the Graduate College is not the equivalent of acceptance as a candidate for an advanced degree, which must be earned through work successfully completed at The University of Iowa. (See "Section X. Master’s Degrees," "Section XI. Two-Year Degrees," and "Section XII. Doctor’s Degrees.")

F. DECLARATION OF MAJOR AND DEGREE
Every applicant for admission must indicate on the application form the department or program of major interest and the degree, certificate, or professional objective he or she intends to pursue. The only exceptions to this regulation are the limited number of applicants registered as "special students." (See definition of "special status" in next paragraph.) Changes in the major or degree status may be made in the course of a student’s graduate study with the approval of the department to which the transfer is proposed. To initiate such action, the student must file a change of major or degree status in the Office of Admissions.

G. ADMISSION REQUIREMENTS AND STATUS
Graduates of any college or university accredited by regional accrediting associations may be admitted to the Graduate College if their academic records meet the required standards. Upon admission, all students fall into one of the following three categories:

1. Regular—For students who have met the minimum requirements for admission and who have been accepted by a department, or interdepartmental degree program, for work leading to a graduate degree or certificate or professional improvement, the minimum grade-point average for admission as a regular student to all graduate programs is 3.00.

2. Conditional-Students who are interested in working toward a graduate degree or certificate but who are required by a department to demonstrate their ability to do satisfactory graduate work before being admitted to regular status. To be admitted on a conditional basis, the student must be recommended by a department, which will assume responsibility for advising him or her. The student on conditional status must achieve regular status within two sessions of registration in the Graduate College by attaining a grade-point average of at least 3.00 and acceptance by the major department, or be dismissed.

3. Special—Students with a valid bachelor’s degree and at least a 2.50 grade-point average who wish to register for a total of no more than two courses. These students, relatively few in number, must obtain special permission to register from the director of Admissions. Special graduate students are not eligible for a graduate degree.

H. ADMISSION OF FACULTY MEMBERS TO GRADUATE STUDY
Persons who hold faculty rank of assistant professor (including clinical assistant professor) or above at The University of Iowa may be admitted as special students. (See "Section G." above.) A person holding faculty rank as specified above may petition the Graduate College dean for permission to enter a departmental program for work leading to an advanced degree, certificate, or professional improvement except in the department of his or her appointment or a closely related department. Such petitions must have prior approval of the department of appointment, dean of the college of appointment, and the Graduate College as a whole. Information concerning departmental or program requirements may be obtained directly from the executive of the department concerned.

I. READMISSION
Students who are admitted to and enroll in the Graduate College, but who then fail to register for a period of 36 months or more, must apply for readmission. Their acceptance is dependent upon departmental approval for the session in which readmission is desired. Consideration of the application for readmission will be governed by the departmental and Graduate College admissions standards in effect at the time of reapplication.

Section II. REGISTRATION

A. STANDARD SCHEDULE
Students registered in the Graduate College may register for no more than 15 semester hours in all courses eligible for graduate credit (100-level and above). In a schedule of mixed graduate and undergraduate courses, two hours of undergraduate credit may be substituted for one semester hour of graduate credit, with registration limited to a total of 18 semester hours. This equivalency applies to the calculation of academic load only. Graduate credit is not given for courses numbered under 100. The maximum for the eight-week summer session is eight semester hours. Corresponding maximums for the three-week summer session are three or six semester hours, respectively.

The maximum semester-hour registration for work scheduled outside of the regular eight-week summer session will be arranged on a basis proportionate to that stated above with the approval of the Graduate College dean. Nine semester hours in the regular semester constitute full-time registration. (Fellows are required to carry at least nine semester hours during a semester as a condition of their appointments.) One-quarter-time and one-third-time appointees are permitted to register for the maximum 15 semester hours per semester and eight semester hours during the eight-week summer session.

B. COURSES NOT INCLUDED IN TOTAL REGISTRATION
In addition to a full schedule, a graduate student may register for courses printed in the Schedule of Courses as carrying zero semester hours of credit.

C. CHANGES IN ANNOUNCED CREDIT
Graduate students may not register for more credit in any course than that printed in the Schedule of Courses, but may register for less credit, or no credit, by permission of the instructor. The number of courses a graduate student may take for limited or no credit is subject to the consent of the adviser and the approval of the dean of the Graduate College.

D. REDUCED SCHEDULES FOR TEACHING AND RESEARCH ASSISTANTS AND OTHER APPOINTEES
1. One-half-time appointees may register for not more than 12 semester hours during a semester or six semester hours during the eight-week summer session.

2. Five-eighths-time appointees may register for not more than 10 semester hours during a semester or five semester hours during the eight-week summer session.
3. Two-thirds- and three-quarter-time appointees may register for not more than nine semester hours during a semester or five semester hours during the eight-week summer session.

4. Seven-eighths-time appointees may register for not more than six semester hours during a semester or three semester hours during the eight-week summer session.

5. Full-time appointees, including full-time instructors, may register for not more than Six semester hours during a semester or three semester hours during the eight-week summer session.

E. RETROACTIVE REGISTRATION

No form of retroactive registration is permitted.

F. REGISTRATION FOR PART OF A SESSION

A graduate student may register at any time during the semester or the eight-week summer session for not more than one semester hour of credit for each of the remaining weeks of classes (not including the examination period) in the term. The total registration may not exceed the 15 semester hours permitted for a semester and the eight semester hours permitted for the eight-week summer session. Registration after the last day of the third week of a semester or the third day of the second week of a summer session is permitted only in courses involving special projects, readings, individual study, thesis, or research, with the signed approval of the instructor concerned and the Graduate College dean. Proportional credit limitations and deadlines for the three-week and six-week summer sessions will be established on a prorated basis.

G. EXTRAMURAL REGISTRATION

After admission to a departmental program in the Graduate College, registration for work done off campus may be accepted for residence credit under the following circumstances:

1. Traveling Scholar Program of the Committee on Institutional Cooperation (see “Section III”).

2. Research at approved locations under the direction of members of the graduate faculty of The University of Iowa.

3. Fieldwork as part of a regularly scheduled course or research program.

4. Courses taught off campus by members of the graduate faculty (see “Section X.D.” and “Section XII.C.”) for minimum semester hours required on campus for the master’s and doctor’s degrees).

5. Residence graduate credit from another Iowa Regents’ university (see “Section V.B.”).

6. As many as nine semester hours of graduate work taken at the Quad-Cities Graduate Center from faculty other than faculty of the Iowa Regents’ universities, provided the work is acceptable to the student’s major department for the specified degree.

Extramural registration does not count toward residence credit in the following circumstances:

1. Course work transferred from another institution,

2. Correspondence courses.

H. EXTRAMURAL FEES AND PRIVILEGES

Extramural course work may be counted as residence credit only if the student has been admitted to a departmental program in the Graduate College (see “Section I.G.”) and pays established fees. (See “Section XII.K.” for special fees applicable to postcomprehensive registration, which should not be confused with extramural registration for residence credit.)

I. CORRESPONDENCE COURSES

Correspondence study credits do not count as residence credits. Not more than nine semester hours of graduate correspondence work can be applied toward an advanced degree. Such credit must be acceptable for the student’s plan of study and must be earned after the student has enrolled in the Graduate College. In some instances, graduate-level correspondence study credit earned after a student has received a bachelor’s degree but before enrolling in the Graduate College may later be counted toward an advanced degree with approval of the Graduate College dean upon recommendation of the major department. A graduate student may not register for correspondence courses without the approval of the executive of his or her major department.

J. SYSTEM OF COURSE NUMBERS

Courses primarily for graduate students are numbered 200 or above in each department. Courses open to and carrying credit for both graduate and undergraduate students are numbered from 100 to 199. Courses below 100 are not accepted for graduate credit. Graduate credit may not be earned for taking courses numbered below 100 by registering in such courses as readings, special projects, or independent study having course numbers of 100 or above.

K. AUDITING OF COURSES

Upon the recommendation of the instructor and the adviser, the dean of the Graduate College may grant permission to graduate students to audit courses for zero credit. Auditing is permitted only for a student who is currently registered.

L. DROPPING OF COURSES

All graduate students who drop courses after the deadline date established by the dean of the Graduate College for each session and published by the registrar shall receive the grade of F unless the entire registration is withdrawn. This regulation may be waived by the Graduate College dean only on the recommendation of the Student Health director or the Counseling Service. If a student withdraws registration after the deadline date, the student must obtain permission from the dean of the Graduate College before being permitted to reregister.

Section III. TRAVELING SCHOLAR PROGRAM

A. PURPOSE

The program, under the auspices of the Committee on Institutional Cooperation representing 14 universities in the Midwest, enables a doctoral student to take advantage of special resources available on another campus but not available on his or her own campus: special course offerings, research opportunities, unique laboratories, and library collections.

B. PROCEDURE

1. A CIC Traveling Scholar first must be recommended by his or her own graduate adviser, who will approach an appropriate faculty member at the possible host institution in regard to a visiting arrangement.

2. After agreement by the student’s adviser and the faculty member at the host institution, graduate deans at both institutions will be fully informed by the adviser and have the power to approve or disapprove.

3. A CIC Traveling Scholar will be registered at the home university, and fees will be collected and kept by that institution.

4. Credit for the work taken will be recorded at the home university.

5. Those desiring additional information should inquire at the office of the Graduate College.

C. CONDITIONS

CIC Traveling Scholars will normally be limited to two semesters or three quarters on another campus. Each university retains its full right to accept or reject any student who wishes to study under its auspices.

Section IV. Academic Standing, Probation, and Dismissal

A. PROBATIONARY ACTION

Students admitted to a graduate program are expected to maintain sufficient progress towards their degree requirements. Those who do not may be placed on academic probation. A student, except one on conditional status, shall be placed on probation if, after completing 8 semester hours of graduate work, the student’s cumulative grade-point average on graduate work done at The University of Iowa falls below 3.00. (See Section I.G.2) If, after completing at least 8 additional semester hours of graduate credit, the student’s grade-point average remains below 3.00, the student shall be denied permission to reregister. If after completing 8 or more semester hours of course work, the cumulative grade-point average is at least 3.00, or deficiencies in progress are removed, the student is returned to good standing.

B. RESTRICTION ON STUDENTS ON PROBATION

A student on probation shall not be permitted to take comprehensive or final examinations leading to any degree or certificate, nor may the student receive any graduate degree or certificate.

C. DEPARTMENTAL REGULATIONS AND DISSEMINATION OF INFORMATION

In addition to the above University-wide requirements, departments may establish further requirements which then determine the individual student’s standing with regard to probation and dismissal. To this end, each department or program shall compile a written list of standards and procedures for work in that area. These documents shall be on file in each departmental office and the office of the Graduate College dean. Copies are to be
available for students in the departmental office, and departments shall make all reasonable efforts to inform students. Subsequent changes in standards or procedures shall be communicated by the department to each student and the Graduate College dean. Whenever departments revise standards for a given program, the new regulations will not apply retroactively to the disadvantage of those already in the program. In addition to notifying students that they are subject to the rules of the Graduate College as set forth in the Manual of Rules and Regulations, any standards established by the department more stringent than the general Graduate College requirements shall be stated. Information shall be provided outlining required courses applicable to the various departmental programs of study, examination procedures and other formal evaluations, departmental policies with regard to awarding and renewing assistantships, time limits on programs of study, departmental registration policies, departmental grade-point requirements, requirements for changing from one degree program to another within the department- especially from the master’s to the doctor’s-departmental probation and dismissal policies and procedures (see “E” following), and other matters as are appropriate. The nature of the departmental advisory system shall be explained to incoming students.

**D. ACADEMIC PROGRESS, DEPARTMENTAL PROBATION, AND DISMISSAL PROCEDURES**

If a student is failing to meet departmental standards, the department shall warn the student of this fact in writing. The notification shall specify in what way(s) the student is failing to meet the standards. The student shall be provided a reasonable amount of time to meet the standards prior to departmental dismissal. If conditions such as conditional admission or probation are imposed, the department shall give, at the time of its imposition, written explanation of this status and its time limits.

A student who will not be permitted to register for failure to meet standards shall be notified of this fact in writing with reasons for the action provided. Such dismissal may follow failure to meet conditions of admission, conditions of probation, pre-announced departmental grade-point requirements or other standards, or failure of a regularly scheduled examination or formal evaluation. If a student judges the dismissal decision improper, the student has a right to review. Each department shall establish procedures for handling such reviews. The procedures are to be approved by the Graduate College dean and shall afford a fair and expedient review. A description of these procedures shall be included in the departmental regulations described above. (See “Section IV.D.”)

**E. GRADUATE COLLEGE REVIEW OF DEPARTMENTAL DISMISSAL**

Questions involving judgment of performance will not be reviewed beyond the department level. If, however, the student feels there has been unfairness or some procedural irregularity concerning dismissal, the student may pursue a grievance according to the Academic Grievance Procedure (AGP) established by the Graduate College. The AGP is available in the Graduate College. The student should consult with the Graduate College prior to initiating an academic grievance.

**Section V. Credits**

**A. TRANSFER OF GRADUATE CREDIT**

Graduate work at other institutions will be entered on the student’s permanent record by the registrar and a report of this action will be sent to the student and to his or her major department. Credit for these courses toward an advanced degree at Iowa must have the approval of the major department and the dean of the Graduate College. (See “Section X.E.” and “Section XII.F.”, Reduction of Old Credits.)

**B. RESIDENCE TRANSFER CREDIT**

After admission to a departmental program in the Graduate College, residence credit from another Iowa Regents’ university may be counted as residence credit at this institution, provided such work is acceptable to the student’s major department on the basis of the department’s determination of its applicability toward the degree. (See “Sections X.D.” and “XII.C” for minimum semester hours required on campus for the master’s and doctor’s degrees, and “Sections X.E. and XII.F.”, Reduction of Old Credits.)

**C. REDUCTION IN CREDIT**

For courses or seminars in independent study, thesis, and research, an instructor may report less credit than the number of semester hours for which a student is registered.

**D. GRADUATE CREDIT FOR VETERANS**

Credit may be granted for studies pursued in war and military situations under such regulations as may be formulated by the national educational agencies and under such adaptation of standing rules as the Graduate Council may authorize from time to time to meet group or individual situations. The value of such credit in satisfying requirements for a degree will be determined by the major department with the approval of the dean.

**E. WITHDRAWAL OF REGISTRATION AND PROPORTIONAL CREDIT FOR STUDENTS ENTERING MILITARY SERVICE**

1. Students who leave within the first six weeks of the semester receive no credit.
2. Students who leave within the period of seven to nine weeks receive one-half credit.
3. Students who leave within the period of 10 to 12 weeks receive two-thirds credit.
4. Grade reports for the one-half and two-thirds credit periods: (a) Instructors report grades only as satisfactory or unsatisfactory. (b) Credit is to be assigned on the basis of total registration minus thesis and seminar. (c) Courses are to be counted toward specific degree requirements only after the student returns and then only with the department’s approval.
5. Students who complete the twelfth week receive full credit.
6. Grade reports for the full-credit period: (a) Grades are to be reported only at the end of the semester. (b) Credit is to be reported in specific courses.
7. In each instance, the instructor reports the student’s credit, grade, and date of withdrawal. No credit is granted unless the student’s work is satisfactory at the time of leaving.
8. The amount of credit in thesis and research registration is to be reported to the registrar by individual instructors on the above basis except that less or zero credit may be assigned.

**Section VI. Marking System**

**A. MARKS CARRYING GRADUATE CREDIT**

These are A+, A, A-, B+, B, B-, C+, C-, and S-satisfactory.

**B. MARKS CARRYING NO GRADUATE CREDIT**

These are D-, D, D-, F, I-incomplete, W-withdrawn without discredit, R-registered, and U-unsatisfactory.

**C. AUDIT**

R is assigned when a student registered for zero credit attends as an auditor throughout the course; if the student fails to meet the instructor’s requirements for class attendance, W is assigned.

**D. INCOMPLETE**

The grade of I is to be used only when a student’s work during a session cannot be completed because of illness, accident, or other circumstances beyond the student’s control. In registrations for thesis, research, or independent study, the satisfactory/unsatisfactory grades may be applied. (See next paragraph, “E”.) Students who receive the mark of I must remove that mark within the first session of registration after the closing date of the session for which it is given, or else the grade becomes F, except that students with I’s from the spring semester are exempt from completing the course during the succeeding summer session. Specific deadlines for the submission of student work to the faculty and for the faculty’s report on I grades to the registrar will be set by the Graduate College dean for each session and printed in the academic calendar. Courses may not be repeated to remove incompletes; removal of an I is accomplished only through completion of the specific work for which the mark is given.

**E. THESIS, RESEARCH, READINGS, INDEPENDENT STUDY, AND SPECIAL PROJECTS**

Grades of S and U may be used for registrations in thesis, research, independent study, and special projects. S-satisfactory means that the student receives credit for the work; U-unsatisfactory means that he or she receives no credit. Neither S nor U is used in computing grade-point averages. At a later date, the instructor may change the S to a letter grade. In addition, departments may ask the Graduate College dean for permission to use grades of S and U as described above for courses which, because of their special or experimental nature, are judged to be more appropriate for such grading. In general, these requests may be granted for no more than one session and must be reviewed by the Graduate Council before
being granted for longer periods. The type of grading system to be used in the above cases should always be mutually understood by the instructor and student.

F. GRADES OF S AND U
S and U may be used for courses taken by a graduate student outside the major department or interdepartmental degree program provided that the instructor of the course and the student’s departmental adviser approve the registration. Arrangements for satisfactory/unsatisfactory grading in these courses are accomplished by filing a card with appropriate signatures in the Registrar’s Office at the time of registration, or no later than the last day of the third week of a semester or the third day of the second week of a summer session. No changes from letter grades to satisfactory/unsatisfactory grades or vice versa will be allowed after these dates.

It is not the policy of the Graduate College to abandon the traditional letter grades described in this section; however, in certain exceptional instances, departments having several areas of concentration involving widely differing types of effort may request the permission of the Graduate Council to allow students majoring in one area to register in courses in another area within the same department or program on a satisfactory/unsatisfactory basis. In these instances, satisfactory/unsatisfactory cards will be used as described in the preceding paragraph.

G. COMPUTED GRADE-POINT AVERAGE
This is based only upon graduate work graded A+ = 4.33, A = 4.00, A- = 3.67, B+ = 3.33, B=3.00, B-=2.67, C+ = 2.33, C = 2.00, C-= 1.67, D+ = 1.33, D= 1.00, D-=0.67, and F = 0. Although a grade of A+ has a value of 4.33 in computing a student’s grade-point average, the cumulative average is truncated so as not to exceed 4.00.

Section VII. Graduate Appointments

A. SCHOLARSHIPS
Scholarships are competitive and are awarded on merit.
1. Eligibility for graduate scholarships and fellowships will include: (a) registration in the Graduate College; (b) cumulative grade-point average of at least 3.00; (c) a GRE score or a GMAT score above a point to be designated by the Graduate College dean; (d) a satisfactory rate of progress in completing the program for the degree.
2. Preference will be given to candidates for the doctoral degree.
3. Recommendations for graduate scholarships may be made to the Graduate College by the appropriate department executive, director, or dean. A graduate scholarship may be awarded whether or not a student holds an assistantship. The amount of scholarship for the academic year may vary, but in no case exceed the comprehensive fee assessed. Scholarships will be credited to the student’s University account.

B. GRADUATE COLLEGE FELLOWSHIPS
Fellowships are awarded by the Graduate College upon recommendation by departments to students with outstanding academic records. Fellows must be registered as full-time students. The primary purpose of the awards is to permit an advanced student to complete his or her dissertation or creative project and take the degree. Other terms of the award will be established by the Graduate College dean in consultation with the Graduate Council.

C. FACULTY RESEARCH ASSISTANTSHIPS
Faculty research assistantships are awarded to qualified graduate students and serve two purposes: to provide research service to professional members of the academic staff and to provide apprentice experience for graduate students who are in training in research. Not more than 20 hours of service per week are required of a half-time assistant. Other part-time service is scaled in proportion, and a limited academic schedule is permitted (see “Section II.D”). Appointments ordinarily are made for the nine-month academic year, but appointments may be made for other periods of time by special arrangement. Stipends vary with the qualifications of the appointee and the amount of service rendered. Faculty research assistants appointed by the Graduate College pay their own fees. Graduate appointments beginning in August are usually made by the Graduate College dean upon recommendation of the various departments in March of each year, although applications may be considered at any time. Application should be made on the form provided by the Graduate College and should be accompanied by recommendations and/or a letter summarizing the student’s qualifications.

D. GRADUATE TEACHING ASSISTANTSHIPS
These assistantships serve two purposes: assistance in the instructional program of the University and the preparation of future college teachers. In order to achieve both aims, scholastically superior graduate students who show exceptional promise as teachers are selected for graduate teaching assistantships. All appointments are made by the dean of the appropriate college on recommendation of the department.

E. ELIGIBILITY FOR SCHOLARSHIPS, FELLOWSHIPS, AND RESEARCH ASSISTANTSHIPS
Scholars, fellows, and faculty research assistants on the Graduate College budget must be registered as regular students in good standing in order to hold such appointments. Appointments will be terminated when registration and/or student status is terminated. In no instance may a student be promised or tendered an appointment until after approval for admission to the Graduate College by the director of Admissions.

F. CREDIT
No academic credit is allowed for the teaching or research service for which the student receives payment as a graduate assistant.

G. LOANS
Graduate students requiring financial assistance may apply for loans at the Office of Student Financial Aid. See “Financial Aid” in the Learning at Iowa section of the Catalog.

H. OTHER FORMS OF SUPPORT
Many departments offer financial assistance in the form of traineeships, part-time employment on research programs, or part-time teaching. Inquiries should be addressed directly to the major department.

Section VIII. Advanced Programs Offered in the Graduate College
The major areas in which the Graduate College offers degree programs are listed under “Degree Programs” at the beginning of this section of the Catalog.

Section IX. General Requirements for Advanced Degrees

A. APPLICATION FOR DEGREE
The student must file an application for an anticipated degree with the registrar not later than 10 weeks after the start of the semester or one week after the start of the summer session in which the degree will be conferred. The student must have the application signed by his or her adviser. Failure to file the application by the deadline will result in postponement of graduation to a subsequent session.

B. ENROLLMENT IN FINAL SESSION
The student must be enrolled during the session in which the degree is to be conferred, except as noted in the following paragraph. Students who must register for the session in which the degree is to be conferred but are away from the University campus during that session may meet this requirement by registering for independent study, research, or thesis according to the practice in the various departments. Doctoral candidates who have completed all work except the final examination may register for the postcomprehensive registration described in “Section XII.K” if such registration is appropriate. Master’s candidates who have completed all work except the final examination may register for 000:001 Master’s Final Registration at a fee equivalent to the “postcomprehensive registration” if such registration is appropriate. Registration in a correspondence course will not satisfy this requirement.

Section X. Master’s Degrees

A. KINDS OF DEGREES
The University of Iowa offers programs leading to the Master of Arts (M.A.) degree, Master of Science (M.S.) degree, and several professional master’s degrees.
M.A. and M.S. degrees require mastery of methodologies and practices of research and scholarship of the discipline. A thesis describing original scholarship or research may be required. M.A./M.S. degrees may be designed either as preparation for entry into doctoral degree programs or to provide advanced study
and accomplishment that serves a variety of career and other purposes. Degrees are awarded in many fields of study, or majors, consistent with conventions of the discipline (e.g., M.A. in Art, English, Psychology; M.S. in Chemistry, Mathematics, Physiology). (For complete list, see Section VIII.) M.A. and M.S. degrees require a minimum of 30 semester hours, a final examination and, in some fields, a thesis.

Professional master’s degrees provide knowledge, perspectives, and skills required for professional practice. Some programs may include introduction to research or scholarship sufficient to allow application of current literature to practice. Professional master’s degrees generally are indicated by a three- or four-letter designation: examples include the Master of Business Administration (M.B.A.), Master of Social Work (M.S.W.), Master of Public Health (M.P.H.), Master of Physician Assistant Studies (M.P.A.), Master of Science in Nursing (M.S.N.), Master of Accountancy (M.Ac.). (For complete list, see Section VIII.)

Professional master’s degrees require a minimum of 30 semester hours. Some may require a final examination as well as a thesis, papers, projects, colloquia, internships, or other experimental-based activity typical of preparation for practice in the field. A student may prepare a proposal for an interdisciplinary course of study, including the plan of study defining course work, examination requirements, a research plan, and a committee of at least three faculty members, with either the department most directly concerned or the Graduate College designated as the sponsor. Final approval of such individual programs is granted by the Graduate College dean, who may add members to the student’s supervising committee from other closely related departmental faculties or from the Graduate Council. The degree will be awarded in interdisciplinary studies (master’s) stipulated in the approved graduate program and, parenthetically, the name of the sponsoring department or degree description.

B. PLAN OF STUDY

The applicant for a master’s degree must file a plan of study approved by the adviser and the departmental executive with the Graduate College within the session in which the degree is to be granted and by a date to be established by the Graduate College dean. The plan shall meet the requirements for the degree approved by the graduate faculty. (See also “Section IV.D. Departmental Regulations and Dissemination of Information.”)

C. MAJOR AND RELATED SUBJECTS

The plan of study should provide for reasonable concentration in the major field of interest and, subject to the approval of the major department, may include related subjects from other departments.

D. RESIDENCE REQUIREMENT

Of the minimum of 30 semester hours required for the degree, at least 24 semester hours must be completed under the auspices of The University of Iowa, after admission to a departmental program in the Graduate College. Various forms of extramural registration may qualify toward fulfillment of this 24-hour residence requirement (see “Section II.G. Extramural Registration”) in addition to regular on-campus registration. However, at least eight semester hours on campus are required, except for those departmental programs which ensure sufficient interaction between the students and the graduate faculty and have received approval from the Graduate Council and the dean of the Graduate College for reduction of this on-campus requirement.

E. REDUCTION OF OLD CREDITS

Credits for a master’s degree dating back more than 10 years from the session in which the degree is to be conferred are not counted toward fulfillment of degree requirements. This rule may be waived by the dean in cases affected by military service.

F. LIMIT ON PROFESSIONAL COURSES

Work taken by a student in the Colleges of Dentistry, Law, or Medicine while enrolled for a professional degree may be credited to a graduate program leading to a master’s degree if it is taken after the student has earned a bachelor’s degree or has completed work equivalent to that required for a bachelor’s degree at The University of Iowa. The work accepted from the professional college must be directly related to the student’s major field of study in the Graduate College and be approved as a part of the plan of study by the student’s adviser and the major department. Work completed while registered for a professional degree in law, medicine, or dentistry will be counted as part of the residence requirement for nondoctoral degrees in the Graduate College only when the student is registered in an appropriate joint degree program.

G. TWO MASTER’S DEGREES

The granting by this university of two master’s degrees simultaneously or in succession requires the satisfaction of all requirements for each degree separately, including two theses where a thesis is required for each, and two examinations, with a minimum combined total of 60 semester hours of graduate credit.

H. MASTER’S DEGREE WITH THESIS

Not more than nine semester hours of credit for thesis research and writing shall be counted in satisfying the 30-semester-hour minimum requirement. The thesis may be a scholarly study or an artistic production. One copy of the thesis, complete and in final typed form, must be presented to the Graduate College for a check of formal characteristics not later than four weeks before the graduation date on which the degree is to be conferred. (See the Graduate College Thesis Manual) After approval by the Graduate College and by the thesis committee, two copies of the thesis must be deposited with the Graduate College not later than 10 days before graduation. Failure to submit the first and final deposits of the thesis by the deadline date established by the Graduate College will result in the postponement of graduation to a future session. If the thesis is in some nonprint form (e.g., painting, statue, performance in music) the librarian will help the student and faculty adviser work out an appropriate method of preparing the work, if such help is needed. Once the accompanying manuscript is accepted, it is treated the same as any other thesis.

The thesis committee shall consist of at least three members of the graduate faculty and may or may not be identical to the final examination committee. (See “K. Examining Committee.”)

I. MASTER’S DEGREE WITHOUT THESIS

A master’s degree without thesis, consisting of at least 30 semester hours of graduate work, may be awarded upon the completion of a curriculum prescribed by a department and approved by the Graduate Council.

J. FINAL EXAMINATION

The requirements for master’s degrees may include a final examination which, at the discretion of the major department, may be written or oral or both. Such an examination will not duplicate, course examinations. It will be evaluated by the examining committee as satisfactory or unsatisfactory, with two unsatisfactory votes making the committee report unsatisfactory. The report of the final examination is due in the Graduate College not later than 48 hours after the examination.

If the department so recommends, a candidate who fails the examination may present himself or herself for reexamination, but not sooner than the next regularly scheduled examination period in the following session. The examination may be repeated only once.

A student must graduate within one calendar year after passing the final examination for a master’s degree; failure to meet this deadline will require reexamination of the student.

Upon recommendation of a department, the comprehensive examination for a doctoral degree may be substituted for the master’s examination.

Some master’s programs do not require a final exam. Students are responsible for checking the specific requirements of their individual degree programs.

K. EXAMINING COMMITTEE

The examining committee for the master’s degree consists of at least three members of the graduate faculty, appointed by the Graduate College dean upon recommendation of the major department or program, at least two of whom are from the major department. If the examination covers work in another department, one member of the committee must be from that department. Upon recommendation of the major department, the dean may appoint additional qualified persons (not necessarily members of the graduate faculty) to serve as voting members of the examining committee, and, at his or her discretion, the Graduate College dean may add a member to the committee.

Section Xi. Graduate Certificate Programs

Graduate certificate programs reflect specialization, either within a field or in an area of study, research, or training. Some graduate
cerificate programs may be open only to students seeking degrees in related fields; others may be offered as independent programs. Graduate certificate programs are designed to enhance skills that provide professional development and career advancement opportunities, to broaden career options, and for other purposes, both for traditional, full-time students and for those with full-time employment.

Graduate certificate programs usually require a minimum of 15 semester hours of specified course work and may, in addition, require papers, projects, or experimental learning components designed for specific cohorts. Certificate programs generally require two to three semesters to complete.

Examples include the graduate certificates in aging studies, American Indian and native studies, health informatics, advanced nurse practitioner. Requirements for each graduate certificate are included in The University of Iowa General Catalog.

Section XII. Doctor’s Degrees

A. CHARACTER OF DEGREE

The Graduate College awards two doctorates, the Doctor of Philosophy and the Doctor of Musical Arts. The doctorate is the highest degree awarded by the university. The Doctor of Philosophy degree indicates marked excellence in research or other creative work, and superior comprehension in the discipline. The Doctor of Musical Arts degree indicates marked excellence in performance and pedagogy.

B. PREREQUISITES

The candidate must present evidence of having completed a satisfactory amount of undergraduate work in the subject proposed for investigation or, in the case of deficiency, must register for prerequisite courses.

C. RESIDENCE REQUIREMENT

The doctorate is granted primarily on the basis of work performed rather than on the accumulation of semester hours of credit; however, the candidate is expected to have completed at least three years of residence in a graduate college. At least part of this residence must be spent in full-time involvement in one’s discipline, at this university, beyond the first 24 semester hours of graduate work; this requirement can be met either by: (1) enrollment as a full-time student (nine semester hours minimum) in each of two semesters; or (2) enrollment for a minimum of six semester hours in each of three semesters during which the student holds at least a one-third-time assistantship certified by the department as contributing to the student’s doctoral program. (For purposes of record and assessment of fees, student registration should reflect accurately the amount and kind of work undertaken in the Graduate College. All doctoral programs, including acceptable transfer credit, will contain a minimum of 72 semester hours of graduate work.)

D. PLAN OF STUDY

The development of a plan of study at the doctoral level is the responsibility of the student working together with his or her adviser. A formal plan of study must accompany the departmental request to the Graduate College for permission to conduct the comprehensive examination. The plan will provide a listing of all graduate courses taken that apply toward the degree and a listing of courses in progress or to be completed after the comprehensive examination.

E. INTERDISCIPLINARY STUDIES PROGRAMS

A student may prepare a proposal for an interdisciplinary course of study, including the plan of study defining course work, examination requirements, research plan, and a committee of at least five faculty members with either the department most directly concerned or the Graduate College, designated as the sponsor. Final approval of such individual programs is granted by the Graduate College dean, who may add members to the student’s supervising committee from other closely related departmental faculties or from the Graduate Council. The degree will be awarded in interdisciplinary studies (doctorate) stipulated in the approved graduate program and, parenthetically, the name of the sponsoring department or degree description.

F. REDUCTION OF OLD CREDITS

Courses taken 10 or more years prior to the comprehensive examination will be evaluated by the major department in order to determine the amount of credit that shall be allowed for such work. Evaluation of such old credits will be reported to the Graduate College by the departmental executive at the time of submission of the plan of study.

G. LIMIT ON PROFESSIONAL COURSES

Work taken by a student in the Colleges of Dentistry, Law, or Medicine while enrolled for a professional degree may be credited to a graduate program leading to a doctoral degree if it is taken after the student has earned a bachelor’s degree and has completed work equivalent to that required for a bachelor’s degree at The University of Iowa. The work accepted from the professional colleges must be directly related to the student’s major field of study in the Graduate College, and the plan of study must be approved by the student’s adviser and the major department. Work completed while registered for a professional degree in law, medicine, or dentistry will not be counted as part of the one academic year which must be spent in residence as a doctoral student on the campus of this university.

H. JOINT PROGRAM FOR MASTER’S AND DOCTORAL DEGREES

Those students who expect to continue their training through the doctoral degree may file a joint program for the master’s and doctor’s degrees. The master’s examination may be combined with the comprehensive examination for the doctorate for these candidates. The examining committee will file separate reports of its actions on the final examination for the master’s degree and for the comprehensive examination. Upon recommendation of the department and approval of the Graduate College dean, students who are well qualified by previous training may submit a plan of study that leads directly to the doctoral degree without earning the master’s degree as an intervening part.

I. REQUIREMENT IN FOREIGN LANGUAGES

There is no general Graduate College requirement in foreign languages. Those departments that do require competence in one or more foreign languages establish standards as to the extent and level of competence, as well as methods of testing. Specific requirements will be found in the departmental statements of standards and procedures (see “Section IV.D.”). Specifications of departmental requirements in foreign languages are filed in the Graduate College office and may be changed upon the initiative of the departments.

J. COMPREHENSIVE EXAMINATION

The candidate must pass a comprehensive examination, consisting of written or oral parts or both at the discretion of the major department. Admission to the comprehensive examination is granted upon the recommendation of the major department, the filing of the plan of study, and the approval of the dean of the Graduate College. A student must be registered in the Graduate College at the time of the comprehensive examination, which must be passed not later than the session prior to the session of graduation. This examination, administered only on campus, is intended to be an inclusive evaluation of the candidate’s mastery of the major and related fields of study, including the tools of research in which competence has been certified.

The comprehensive examination is not a deferred qualifying examination. It is intended to evaluate the candidate’s mastery of the subject at or near the end of his or her formal preparation and prior to the completion of the dissertation. The comprehensive examination and the final examination, which is concerned chiefly with defense of the thesis and related subjects, are the two principal examinations for the doctoral degree.

The comprehensive examination will be evaluated by a convened meeting of the committee and reported as satisfactory, satisfactory with reservations, or unsatisfactory to the Graduate College office within 14 days after the completion of the examination. Two “unsatisfactory” votes will make the committee report unsatisfactory.

In the event of a report with two or more votes of “satisfactory with reservations,” the exact stipulations of the committee should be recorded with the report form. The statement must specify the time allowed for satisfying the stipulations and must be specific in defining the area if further examination in a particular area is required, or in describing any additional courses or other procedures that are required. The candidate will not be admitted to the final oral examination until such stipulations have been satisfied. The executive of the major department should promptly send a written report to the
Graduate College giving the date of removal of “reservations.”

In case of a report of unsatisfactory on a comprehensive examination, the committee may grant the candidate permission to present himself or herself for reexamination not sooner than four months after the first examination. The examination may be repeated only once, at the option of the department.

K. POSTCOMPREHENSIVE REGISTRATION

The student is required to register each semester after passing the comprehensive examination until the degree is awarded. If a student fails to register, the student may not be readmitted to candidacy until the student has submitted an application that has been approved by the student’s adviser, the departmental executive, and the Graduate College dean.

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. The student should register for the courses, research, and thesis necessary to complete the plan of study.

When the registrations required for the plan of study have been completed, the student may meet the continuing registration requirement by registering for 000:000 Ph.D.

Postcomprehensive Registration and paying a special minimum fee for any semester in which the department (i.e., department chair or director of graduate studies) and the student’s adviser determine that the student is neither making significant use of University facilities (except library privileges) nor partaking of consultation with the faculty. It is understood that no registration for a summer session is required when the student makes no use of University resources, unless the student is taking a degree at the end of that session or unless enrollment is required by the department.

L. DISSERTATION FOR THE DOCTORAL DEGREE

One copy of the dissertation, complete and in final form, must be presented at the office of the Graduate College before the final examination, and not later than four weeks before the graduation date on which the degree is to be conferred.

Two copies of the approved dissertation must be deposited at the office at least 10 days prior to the graduation date. The final deposit can be no later than the end of the semester (summers excluded) following the session in which the final examination is passed; failure to meet this deadline will require reexamination of the student. Failure to submit the first and final deposits of the thesis by the deadline date established by the Graduate College will result in the postponement of graduation to a future session.

Regulations regarding preparation of the dissertation copy shall be promulgated by the dean of the Graduate College. Dissertations will be microfilmed and thus made available on a permanent basis. An abstract of the dissertation, not to exceed 350 words of text, is to be deposited with the dissertation. The abstract must be approved and signed by the dissertation adviser. The abstract is published in the journal of Dissertation Abstracts International. One copy of the dissertation is bound and indexed at the University’s Main Library.

If the dissertation is in some nonprint form (e.g., painting, statue, performance in music) the librarian will help the student and faculty adviser work out an appropriate method of preparing the work, if such help is needed. Once the accompanying manuscript is accepted, it is treated the same as any other thesis.

Written dissertations shall be made available to all members of the examining committee not later than two weeks before the date of the examination.

M. DISSERTATION FEE

A nonrefundable dissertation fee is charged each candidate to cover the cost of processing the dissertation and abstract.

N. FINAL EXAMINATION

The work for the degree culminates in a final oral examination administered on campus. This examination should include: a critical inquiry into the purposes, methods, and results of the investigation-not a mere recapitulation of the procedures followed-and intensive questioning on areas of knowledge constituting the immediate context of the investigation.

The final examination may not be held until the next session after the student passes the comprehensive examination until the thesis is accepted for first deposit by the Graduate College; however, a student must pass the final examination no later than five years after passing the comprehensive examination. Failure to meet this deadline will result in a reexamination of the student to determine his or her qualifications for taking the final examination. The procedures to be followed are the same as those for the comprehensive examination. (See “XIIJ. Comprehensive Examination.”)

Final examinations for the doctorate are open to the public. Members of the faculty of the Graduate College are especially invited to attend and, subject to the approval of the chair, to participate in the examination.

The report of the final examination is due in the Graduate College office not later than 48 hours after the examination. The final examination will be evaluated as satisfactory or unsatisfactory. Two unsatisfactory votes will make the committee report unsatisfactory. In case of a report of unsatisfactory in the final examination, the candidate may not present himself or herself for reexamination until the next session. The examination may be repeated only once, at the option of the major department.

0. EXAMINING COMMITTEES

The comprehensive and final examinations are conducted by committees of no fewer than five members of the graduate faculty appointed by the Graduate College dean upon recommendation of the major department, except that departments may request the dean’s permission to replace one of the five members of the graduate faculty by a recognized scholar of professorial rank from another academic institution. A member of the graduate faculty from outside the major department is required in those cases where a related field outside the major department is included in the comprehensive examination. For the final examination, one member of the committee must be a member of the graduate faculty from outside the major department.

Upon recommendation of the major department, the Graduate College dean may appoint additional qualified persons (not necessarily members of the graduate faculty) to serve as voting members of the examining committees. A voting member may be added at the discretion of the Graduate College dean.

Section XIII. Exceptions

Petitions to waive these regulations may be made for appropriate and justifiable reasons on behalf of any graduate student through the departmental executive to the dean and the Graduate Council.

Nondepartmental Courses

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>000:000</td>
<td>Ph.D. Postcomprehensive Registration</td>
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<tr>
<td>000:001</td>
<td>Master’s Final Registration</td>
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<td>CIC Scholar</td>
<td>arr.</td>
</tr>
<tr>
<td>000:997</td>
<td>Graduate/Professional Transfer</td>
<td>arr.</td>
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<td>000:999</td>
<td>Resident/Fellow/Post-Doctor</td>
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<td>650:006</td>
<td>Summer Research Opportunity Program</td>
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<tr>
<td>650:011</td>
<td>CIC Summer Research Opportunities Program</td>
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<tr>
<td>650:270</td>
<td>Responsible Conduct in Research</td>
<td>1 s.h.</td>
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<tr>
<td>650:300</td>
<td>Writing for Learned Journals</td>
<td>1-4 s.h.</td>
</tr>
<tr>
<td>650:313</td>
<td>Digital Rhetoric: Electronic Textology and Scholarly Research</td>
<td>2-4 s.h.</td>
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</tbody>
</table>

Help for graduate students in bringing written work to publishable form; analysis of target journal’s rhetoric; submission, response to criticism. Same as 160:300.

Persuasive and ethical implications of meta-information (e.g., hypertext) in electronic data; rhetoric of digital research within and between disciplines; methodological perspectives of participants’ disciplines. Same as 160:313.
APPLIED MATHEMATICAL AND COMPUTATIONAL SCIENCES

Chair: Herbert W. Hethcote (Mathematics)
Affiliated faculty: Kurt Anstreicher (Management Sciences), Marc P. Armstrong (Geography), Kendall E. Atkinson (Mathematics), Dennis L. Bricker (Industrial Engineering), Gregory R. Carmichael (Chemical and Biochemical Engineering), Jin-Shyan Chen (Mechanical Engineering), Kyung K. Choi (Mechanical Engineering), James F. Cremer (Computer Science), Soura Dasgupta (Electrical and Computer Engineering), Donald D. Dorfman (Psychology), John Geweke (Economics/Statistics and Actuarial Science), Weinan Han (Mathematics), Edward J. Haug (Mechanical Engineering/Civil and Environmental Engineering), Herbert W. Hethcote (Mathematics), Rajan Kannan (Management Sciences), Douglas W. Jones (Computer Science), Alan R. Kay (Biological Sciences), Joseph K. Kearney (Computer Science), William H. Klink (Physics), Kenneth Kortanek (Management Sciences), Russell V. Lenth (Statistics and Actuarial Science), Tong Li (Mathematics), Yi Li (Mathematics), Jeffrey S. Marshall (Mechanical Engineering), George Neumann (Economics), Gregg C. Eden (Psychology), Vindra C. Patel (Mechanical Engineering), R. Rajagopal (Geography/Civil and Environmental Engineering), Teodor Rus (Computer Science), Gerard Raslin (Algoritmo), Alberto M. Segre (Management Sciences), Elias Shiu (Statistics and Actuarial Science), Jonathan Simon (Mathematics), Gerhard O. Strohmer (Mathematics), Taehoon T.-H. (Mathematics), George O. Woodward (Statistics and Actuarial Science), Chung-Fang Wu (Biological Sciences), Yinyu Ye (Management Sciences)

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.

COMPREHENSIVE EXAMINATIONS

Ph.D. comprehensive examinations cover three areas: theoretical foundations in mathematics, methods of application, and 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 and Financial Support

Fellowships and research and teaching assistantships are available to qualified applicants. Fellowship support is available during the summers. Applications for fall semester admission and for financial support should be received by February 1. Information about admission requirements, financial support, graduate student, computing facilities, employment opportunities, recent graduates, and the faculty is available on The University of Iowa’s World Wide Web site. For application forms and more information about the academic program, contact the chair of the Program in Applied Mathematical and Computational Sciences.

Courses

22A:397 Seminar: Applied Mathematical and Computational Sciences (arr.)
Current research by faculty, students, guests. Consent of instructor required.

22A:399 Reading and Research (arr.)
May be repeated. Consent of adviser required.
The Biosciences Program gives graduate students the freedom to explore research in any of 10 University of Iowa biosciences research departments and programs: the Departments of Anatomy and Cell Biology, Biochemistry, Biological Sciences, Microbiology, Pharmacology, and Physiology and Biophysics, and the Programs in Genetics, Immunology, Molecular Biology, and Neuroscience. The program leads to a Ph.D. degree in one of the biosciences disciplines.

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 the Ph.D. degree.

Semester hour requirements for the doctorate vary by program, but all Ph.D. degrees at Iowa require at least 72 semester hours of graduate study. Detailed information on graduate study at The University of Iowa is provided in the Rules and Regulations of the Graduate College, in the Graduate College introductory section of the Catalog.

Curriculum

During their first year in the program, students perform three 10-week research rotations in Biosciences Program departments and programs of their choice. They also take a principles course (156:201), a seminar course (156:265), and one or more electives.

As they begin their study, students are advised on selection of courses and research rotations by the Biosciences Graduate Studies Committee, which is composed of an individual representative from each of the participating biosciences departments and programs. Before the first semester begins, the committee member most closely related to the student’s academic and research interests is assigned to advise the student.

At the end of the first 10-week rotation, each student is advised by an individualized committee, which consults with them regarding grades, subsequent rotations, and their choice of a department or program and a lab for thesis research. Students make a short oral presentation to their advisory committee and other students at the end of each rotation.

In addition to laboratory rotations, all biosciences students take 156:201 Principles in Molecular and Cell Biology, which provides a foundation for understanding basic principles of molecular and cell biology relevant to all biosciences disciplines and teaches students how to evaluate literature critically.

The Biosciences Seminar (156:265) dovetails with seminars offered by the Biosciences Program’s departments and programs. At the beginning of each semester, biosciences students meet to choose approximately 12 seminars that they will attend. Discussions precede each seminar. During the fall semester, discussions follow a roundtable format. During the spring semester, students present papers in a journal club setting.

Overall student progress is monitored by the full Biosciences Graduate Studies Committee, which at the end of the spring semester provides a recommendation on whether or not the student should continue in the Ph.D. program. The committee considers factors such as cumulative grade-point average and performance in rotations.

During spring semester, biosciences students confer with prospective mentors about their thesis proposals and whether openings are available in the mentors’ laboratories. Before the semester ends, students submit their choices of graduate programs and faculty mentors to the Biosciences Graduate Studies Committee, which coordinates each student’s transfer to his or her chosen program. From that point on, the department or program advises the student and evaluates his or her performance. 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 are advanced to Ph.D. candidacy.

REQUIRED COURSES

All Biosciences Program students must complete the following course work. Students earn at least 12 semester hours each semester.

Fall Semester

156:201 Principles in Molecular and Cell Biology 4 s.h.
156:265 Biosciences Seminar 1 s.h.
156:302 Biosciences Research (10-week research rotations) arr.
1 elective

Spring Semester

156:265 Biosciences Seminar 1 s.h.
156:302 Biosciences Research (10-week research rotations) arr.
2 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. Applicants should have an undergraduate grade-point average of at least 3.00 (on a 4.00 scale). Applicants must submit their scores on the Graduate Record Examination; a combined verbal, quantitative, and analytical score of 1000 is preferred. International applicants whose first language is not English must score higher than 600 on the TOEFL exam. 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.
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 basic science and clinical departments of the College of Medicine are clustered on the west campus of the University, primarily in the Bowen Science Building, Eckstein Medical Research Facility, Medical Laboratories, and General Hospital. Nearby are the Hardin Library for Health Sciences and the Veterans Affairs Medical Center.

The Departments of Anatomy and Cell Biology, Biochemistry, Microbiology, Pharmacology, and Physiology and Biophysics are housed in the Bowen Science Building. Laboratories of clinical departments are located primarily in the Medical Laboratories and Medical Research Center. The Eckstein Medical Research Facility 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 Alzheimer’s Disease Center, Cancer Center, Cardiovascular Center, Clinical Research Center, Cooperative Human Linkage Center, Craniofacial Anomalies Research Center, Diabetes-Endocrinology Research Center, Digestive Diseases Core Center, Iowa Child Health Research Center, Iowa Cystic Fibrosis Center, Iowa Specialized Center for Pulmonary Research, Lipid Research Center, Mental Health Clinical Research Center, Schizophrenia Research Center, Center for Gene Therapy, and Specialized Centers for Congenital Heart Disease and Hypertension and for Occupational and Immunological Lung Disease.

In addition to the University’s extensive facilities for research support, the Colleges of Medicine and Liberal Arts operate a variety of research support facilities. Tissue culture, autoclaving, purified water, darkroom counters, and a variety of general-use equipment and services are available on a shared basis.

Courses
156:201 Principles in Molecular and Cell Biology 4 s.h. Introduction to critical reasoning as applied to fundamental principles of molecular and cell biology; recent scientific literature. May be repeated.

156:265 Biosciences Seminar 1 s.h. Focus on a journal article relevant to a weekly biosciences seminar series. May be repeated. Consent of instructor required.

156:302 Biosciences Research 1 s.h. Research experience in the lab of a Biosciences Program faculty member. May be repeated.

GENETICS
Chair: Robert Deschenes (Biochemistry)
Affiliated faculty: Debashish Bhattacharya (Biological Sciences), Kevin Campbell (Physiology and Biophysics), Thomas Casavant (Electrical and Computer Engineering), Chi-Lien Cheng (Biological Sciences), Raymond Crowe (Psychiatry), Beverly Davidson (Internal Medicine), John Donelson (Biochemistry), Daniel Ebert (Biological Sciences), Jan Fassler (Biological Sciences), Michael Feiss (Microbiology), Joseph Frankel (Biological Sciences), Pamela Geyer (Biochemistry), Gary Gussin (Biological Sciences), Erin Irish (Biological Sciences), Wayne Johnson (Physiology and Biophysics), Bradley Jones (Microbiology), Jim Jung-Ching Lin (Biological Sciences), Robert Malone (Biological Sciences), Paul McClary (Pediatrics), John Menninger (Biological Sciences), Roger Milkman (Biological Sciences), W. Scott More-Rowley (Physiology and Biophysics), Jeff Murray (Pediatrics), Rodney Nagoshi (Biological Sciences), Shivrand Patil (Pediatrics), Henry Paulson (Neurology), Robert Piper (Physiology and Biophysics), Michael Rebagliati (Anatomy and Cell Biology), Andrew Russo (Physiology and Biophysics), Brian Schotte (Pediatrics), Val Sheffield (Pediatrics), Ming-Chie Shih (Biological Sciences), Curt Sigmund (Internal Medicine), Diane Slusarski (Biological Sciences), Richard Smith (Otolaryngology-Head and Neck Surgery), Bento Soares (Pediatrics), George Stauffer (Microbiology), Mark Stinski (Microbiology), C. Martin Stoltzfus (Microbiology), Edwin Stone (Ophthalmology and Visual Sciences), Veronica Vieland (Biostatistics), Lori Wallrauch (Biochemistry), Lois Weisman (Biochemistry), Marcia Williams (Pediatrics), Chan-Fang Wu (Biological Sciences)

Graduate degree: Ph.D. in Genetics
Web site: http://www.uiowa.edu/genetics

Doctor of Philosophy
The interdepartmental Ph.D. program in genetics 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, ranging from molecular to human genetics. Within this context, course requirements are flexible enough to permit students to tailor their formal course work to their individual needs.

All students enrolled in the program are required to take the following courses.

127:150 Genetic Analysis of Biological Systems 3 s.h.
127:200 Special Topics in Genetics (seminar course) 1 s.h.
156:201 Principles in Molecular and Cell Biology 4 s.h.
002:171 Molecular Genetics or 142:210 Molecular Biology I 4 s.h.
One of these: 002:131 Evolution 4 s.h.
002:168 Genes and Development 3 s.h.
127:191 Human Molecular Genetics 3 s.h.
650:270 Responsible Conduct in Research 1 s.h.

Course work in molecular and microbial genetics, cell and development genetics, or human genetics 8 s.h.
Seminar courses approved by the program 5 s.h.

Even more important than formal course work is the opportunity to do significant research in genetics. Students are encouraged to begin their own research as quickly as possible. 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, 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.

Medical Scientist Training Program
Students may combine study toward an M.D. and a Ph.D. in genetics. Information about this program is available from the director of the Medical Scientist Training Program in the College of Medicine.

Dental Scientist Training Program
Students with a D.D.S. degree may be candidates for the dental science program. Information is available through 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.

Admission to the program is based on assessment of applicants’ undergraduate academic record, performance on the Graduate Record Examination (GRE) Aptitude Test, and letters of recommendation. Admission requirements are not rigid. Most students currently working toward the Ph.D. in genetics at The University of Iowa have undergraduate grade-point averages higher than 3.50, and their GRE Aptitude Test scores (verbal and quantitative) exceed 1250. Students with lower grade-point averages or GRE scores may be admitted, depending on other indications of academic potential.

Students generally begin graduate work during the fall semester.
Financial Support
All genetics graduate students receive a financial stipend of $17,312 for the academic year 2000-2001, plus tuition. Nearly all financial aid for the coming academic year is committed by April 1.

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
The following genetics courses are open to graduate students. Not all courses are offered every year.

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<td>002:131</td>
<td>Evolution</td>
<td>4 s.h.</td>
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<tr>
<td>002:162</td>
<td>Population Genetics and Molecular Evolution</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>002:164</td>
<td>Topics in Plant Molecular Biology</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>002:165</td>
<td>Genes and Development</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>002:172</td>
<td>Topics in Molecular Genetics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>002:176</td>
<td>Topics in Eukaryotic Molecular Biology</td>
<td>2 s.h.</td>
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<tr>
<td>002:205</td>
<td>Graduate Lectures in Genetics</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>002:234</td>
<td>Seminar in Writing in the Natural Sciences</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>033:153</td>
<td>Hard Cases: Science, Policy, and Values-Implications of the Human Genome Project</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:250</td>
<td>Topics: Bacterial Molecular Pathogenesis</td>
<td>2 s.h.</td>
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<tr>
<td>061:268</td>
<td>Biology and Pathogenesis of Viruses</td>
<td>2 s.h.</td>
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<tr>
<td>070:110</td>
<td>Medical Genetics</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>072:245</td>
<td>Developmental Neurobiology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>091:277</td>
<td>Genetics and the Law</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>099:237</td>
<td>Topics in Biochemistry</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>142:210</td>
<td>Molecular Biology I (prokaryotic)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>142:215</td>
<td>Molecular Biology II (eukaryotic)</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>142:220</td>
<td>Cell Biology II</td>
<td>3 s.h.</td>
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<tr>
<td>171:263</td>
<td>Statistical Genetics</td>
<td>3 s.h.</td>
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<td>171:266</td>
<td>Advanced Topics in Genetic Data Analysis</td>
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<td>Responsible Conduct in Research</td>
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<td>148:202</td>
<td>Immunology II</td>
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<td>148:211</td>
<td>Immunology II Seminar (required each year for four years)</td>
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<td>148:221</td>
<td>Advanced Topics in Immunology</td>
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IMMUNOLOGY

Director: Gail Bishop (Microbiology)
Affiliated faculty: Michael Apicella (Microbiology), Robert Ashman (Internal Medicine), Zahair Ballas (Internal Medicine), Daniel Berg (Internal Medicine), Gail Bishop (Microbiology), John Butler (Microbiology), John Cowdery (Internal Medicine), Morris Dailey (Pathology), Elizabeth Field (Internal Medicine), Charles Grose (Pediatrics), John Harty (Microbiology), Gary Hunnlnghake (Internal Medicine), John Kemp (Pathology), C. Michael Knudson (Pathology), Arthur Krieg (Internal Medicine), David Kusner (Internal Medicine), David Lubaroff (Urology), Charles Lutz (Pathology), Richard Lynch (Pathology), Craig Morita (Internal Medicine), Stanley Naasef (Internal Medicine), Stanley Perlman (Pediatrics), Frederick Quelle (Pharmacology) Timothy Ratliff (Urology), Larry Schlesinger (Internal Medicine), Thomas Walmschmidt (Pathology), John Weiler (Internal Medicine), George Weiner (Internal Medicine), Joel Weinstock (Internal Medicine), Jerrold Weiss (Internal Medicine), Mary Wilson (Internal Medicine)
Graduate degree: Ph.D. in Immunology
Web site: http://www.uioowa.edu/~immuno

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. The didactic component of the training comprises a sequence of core courses in immunology and related disciplines. Students are involved directly in laboratory research from their first semester through their original thesis projects leading to the Ph.D.

Doctor of Philosophy

The program is quite 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 records 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 methodologic aspects of immunology. There is ample opportunity for study in a variety of fields that interface with immunology.

The following courses are required of all students.

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Admission
Information regarding the program and application procedures is available from the program office.

Financial Support
All students in the Immunology Program receive stipends and tuition support. This support comes from a variety of sources. Available aid includes training grants from the National Institutes of Health and University of Iowa fellowships and graduate research assistantships.

Facilities
Training is conducted in laboratories and teaching facilities of the Departments of Internal Medicine, Pathology, Microbiology, Pediatrics, and Urology. Faculty laboratories and central research core facilities provide students with access to state-of-the-art research equipment.

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Library and Information Science

Director: Padmini Srinivasan
Professor emeritus: Esther Bierbaum, Velva Jeanne Osborn
Associate professors: Jean Donham, David Eichmann, Padmini Srinivasan
Associate professors emeriti: Louane L. Newsome, Carl Orgen
Assistant professors: James Elmborg, Christine Pihl
Adjunct assistant professor: William Welburn
Lecturer: Ethel Bloesch
Graduate degree: M.A. in Library and Information Science
Web site http://www.uiowa.edu/~libsci

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, multietnic, 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, 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.

Master of Arts

The master's program has held continuous accreditation from the American Library Association since 1971.

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.

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 conservator.

Curriculum

The master's degree in library and information science requires 36 semester hours of graduate credit with a grade-point average of at least 3.00, and the successful completion of a written and oral comprehensive examination. The 36 semester hours include 13 earned in required core courses and 23 earned in electives, distributed among four curricular clusters. A thesis option is available for students who wish more research experience.

The curriculum is designed around four cluster areas: foundations/applications, conceptual structures/systems, resources/services, and policy/planning. Students may choose an area of concentration, but they are required to take courses in each cluster.

FUNDATIONS/APPLICATIONS
Minimum requirement is 5 semester hours.

Core Courses

021:101 Foundations of Library and Information Science 2 s.h.
021:202 Research Methods 3 s.h.

Electives

021:282 Practicum in Libraries and Information Centers 2-3 s.h.
021:284 School Library Media Practicum 3 s.h.
021:286 Research Practicum 1-3 s.h.
021:288 Workshop: Library and Information Science 1-3 s.h.
021:290 Capstone 1 s.h.
021:292 Independent Study 1-3 s.h.
021:299 Thesis 6 s.h.

CONCEPTUAL STRUCTURES/SYSTEMS
Minimum requirement is 7 semester hours.

Core Courses

021:120 Design of Automated Systems 3 s.h.
021:122 Organization of Information Resources I 3 s.h.

Electives

021:123 User Education: Multimedia 3 s.h.
021:124 Database Systems 3 s.h.
021:134 Instructional Video Production 3 s.h.
021:220 Java Programming 3 s.h.
021:222 Organization of Information Resources II 3 s.h.
021:224 Electronic Publishing 2 s.h.
021:226 Digital Libraries 2 s.h.
021:228 Hypertext Systems 2 s.h.
021:230 Text Retrieval 3 s.h.
021:232 Computer Networks 3 s.h.
021:234 Distributed Information Systems 2 s.h.
021:239 Topics 1-3 s.h.

RESOURCES/SERVICES
Minimum requirement is 5 semester hours.

Electives

021:141 Reference and Information Services 2 s.h.
021:142 Web Search Engines 1 s.h.
021:143 Resources for Children 3 s.h.
021:144 Resources for Young Adults 3 s.h.
021:240 Collection Development 2 s.h.
021:242 Online Information Systems 2 s.h.
021:244 Government Information Resources 3 s.h.
021:246 Programming for Youth Services 1 s.h.
021:248 Information Literacy 1 s.h.
021:250 Resources for Adults 2 s.h.
021:254 Analysis of Scholarly Domains 2 s.h.
021:256 History of the Book 3 s.h.
021:259 Topics 1-3 s.h.

POLICY/PLANNING
Minimum requirement is 5 semester hours.

Core Courses

021:260 Strategic Management 2 s.h.
021:262 School Library Media Administration 2 s.h.

Electives

021:261 Personnel Management 1 s.h.
021:264 Program Evaluation 1 s.h.
021:266 Budget and Finance Issues 2 s.h.
021:267 Marketing: Cost Effectiveness 1 s.h.
021:268 Marketing: Promotion 1 s.h.
021:270 Public Libraries 2 s.h.
021:271 College and University Libraries 2 s.h.
021:272 Special Libraries 2 s.h.
021:273 Informatics and Law 3 s.h.
021:274 Health Care Classifications and Knowledge Building 3 s.h.
021:275 Informatics Tools for Health Care Decision Support 3 s.h.
021:276 Facilities 1 s.h.
021:277 International Information Networks 1 s.h.
021:278 Information Policy 2 s.h.
021:279 Topics 1-3 s.h.

Transfer Credit
Up to 9 semester hours of graduate credit in library and information science or related areas may be accepted in transfer from another institution, subject to the approval of the student’s adviser and the director of the school. Approval is given on a course-by-course basis and is determined by evaluating the course’s content, currency, and applicability to the student’s program.

Completion Time
Students typically complete the program in a year and a half. The maximum load for graduate students is 15 semester hours during regular semesters and 8 semester hours during summer sessions, but most full-time students carry fewer semester hours than the maximum allowable load. It also is possible to complete the program on a part-time basis.

Specializations
Students earn 23 semester hours in elective courses selected with the guidance of their adviser. A student’s program is often 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 teaching, research, and public service missions of the parent institution. 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, possession of a second master’s or other advanced degree is desirable. The school offers a state-approved program for librarian/learning resource specialist in an area vocational school or community college.

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 LIBRARY MEDIA CENTERS
The school library media center makes available to students and teachers a wide range of library and instructional materials in a variety of formats. The work of the library media specialist includes providing instruction to students in accessing, evaluating, and using information, collaborating with teachers on the use of resources in instruction, providing leadership in the use of instructional and information technologies, offering reading guidance, providing reference service, and managing the library media center. The University of Iowa offers a state-approved program leading to endorsement as school media specialist K-12. In order to fulfill state requirements for this endorsement, students must hold or be eligible for a teaching license and complete a designated sequence of courses, which leads both to certification and to the M.A. degree.

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 automated systems design.

Joint Degree Programs
The school has established formal programs with the Tippie College of Business and the College of Law. The primary goal of these joint degree programs is the integration of the two areas of study.

Students enrolled in a joint program work closely with an adviser in the School of Library and Information Science to ensure the benefits of integration. For instance, a student seeking a career in a law or business library may require a different sequence of courses from one studying the legal basis of librarianship or the management of the library as a complex organization.

To enroll in a joint program, students must be admitted to the School of Library and Information Science and to the Graduate College or the College of Law. Up to 9 semester hours in business or law may be applied toward the M.A. in library and information science, and up to 9 semester hours in library and information science may be applied toward the M.B.A. or 12 semester hours to the J.D.

In addition to these formal joint programs, arrangements can be made for joint programs between departments on an ad hoc basis. A minimum of 60 semester hours of graduate work is required for a joint degree.

Facilities and 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. Facilities are provided for the varied instructional and research activities of the school.

Technology Laboratory
The school houses a state-of-the-art technology laboratory with current Pentium and Macintosh computers. They are networked to the campus backbone and provide access to a rich variety of relevant software. This laboratory is used primarily by students for course assignments and to gain experience with specialized software. In addition, the classrooms are equipped with networked machines that allow faculty members to use teaching technologies in their courses. Finally, a DEC Alpha server is used to deliver and maintain a common software environment. Students have access to Dialog, LEXIS, NEXIS, OCLC databases, Westlaw, and a wide variety of library automation products.

Research Laboratory
The facilities of the school’s research laboratory are used by faculty members and students to investigate current problems, such as distributed information retrieval, cross-language information retrieval, and information filtering. They are available for student-based research investigations.

University Libraries
All of the resources of the University Libraries are available to students and faculty of the school. The system contains more than 3 million volumes in the Main Library and 11 departmental libraries.

The online catalog and information system contains records for more than 75 percent of the collection as well as databases containing journal indexes and the records of holdings of major research libraries. Many information resources are also available in CD-ROM format.
Students also have full access to the Information Arcade, which facilitates integration of new learning and multimedia technologies with learning and research. Here students find a variety of electronic resources for learning advanced information skills and for gaining access to information in various formats and through various networks, including the Internet. The Arcade also houses an electronic classroom.

The third floor of the Main Library houses the government publications, map, and special collections rooms, 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 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 in West Branch.

The Iowa City Public Library, located only four blocks from the Main Library, was one of the first public libraries in the nation to convert to a totally computerized catalog. Its service philosophy and contemporary management practices provide students with an innovative public library model. The Iowa City Community School District’s media program has been recognized nationally for its excellence in information skills curriculum and for leadership in technology.

**Other Resources**

Lindquist Center, located across the street from the Main Library, houses the Learning Resources Center of the College of Education and the Academic Computing Center. The resource center consists of the Video Lab, Computer Resource Lab, Audiovisual Production Lab, and Curriculum Resources Lab. The Curriculum Resources Lab contains an extensive collection of book and nonbook instructional materials for children in preschool through grade 12. It is especially valuable for students interested in school or public library work.

The Academic Computing Center 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.

**Student Activities**

All students in the program are automatically members of LISSTO, the Library and Information Science Student Organization, which also serves as the student chapter of the American Library Association. In addition, there are student chapters of the American Society for Information Science (ASIS) and Special Libraries Association (SLA). These student-run organizations actively sponsor various activities such as speaker series, workshops, brown bag lunches, and picnics. The associations provide students with significant opportunities for professional and extracurricular growth. Students also are encouraged to join other state and national professional organizations.

**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 have achieved a grade-point average of at least 3.75, demonstrated professional promise, and been recommended by the faculty.

**Placement**

The school provides active placement assistance to its graduates through printed and electronic announcements, seminars on Internet job searching, resume writing and interviewing, and personal counseling. The University’s Educational Placement Office issues a regular listing of job openings and provides a credential file service.

According to the annual placement survey in Library/journal, Iowa’s placement rate consistently ranks among the highest for ALA-accredited programs. Iowa graduates find positions in all types of libraries. The placement distribution for three recent years was: public libraries, 34 percent; academic libraries, 31 percent; school libraries, 18 percent; and special libraries, 17 percent. Iowa graduates currently work in libraries in 46 states and 9 foreign countries. Strong personal and academic qualifications, job flexibility, and geographic mobility are important factors in obtaining a position.

**Admission**

Applicants for admission to the M.A. program are expected to have an undergraduate grade-point average of at least 3.00 on a 4.00 scale and a combined GRE General Test score (verbal, quantitative, and analytical) of 1570 or higher. These criteria serve as guidelines to the admissions committee, which also considers the applicant’s letters of recommendation, statement of purpose, interview, and other appropriate criteria. Each entering class is selected on a competitive basis.

International students whose first or official language is not English are required to achieve a score of 560 or higher on the Test of English as a Foreign Language (TOEFL).

Decisions of the admissions committee are announced two to three weeks after each deadline. Late applications are considered if places are still available. Financial aid, however, is often not available for late applicants. Admitted students are immediately assigned a faculty adviser for program planning.

**Financial Support**

The School of Library and Information Science awards partial-tuition scholarships and one-quarter-time graduate assistantships. To be considered for scholarship or assistantships, applicants must have an undergraduate grade-point average of at least 3.00 and a combined score (verbal, quantitative, and analytical) of 1700 on the GRE General Test. Prospective students are urged to apply for these awards before March 1. For information on student loans, work-study eligibility, or other financial assistance, contact the Office of Student Financial Aid. Information on national scholarships is available from the school or on its web site. Part-time employment usually is available in the University Libraries and other campus units.

**Courses**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tr>
<td>021:000</td>
<td>Cooperative Education Internship</td>
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<tr>
<td>021:090</td>
<td>Introduction to Library Information Handling</td>
<td>3 s.h.</td>
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<td>021:101</td>
<td>Organization of Information Resources I</td>
<td>3 s.h.</td>
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<td>021:122</td>
<td>Organization of Information Resources II</td>
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<td>021:134</td>
<td>Instructional Video Production</td>
<td>3 s.h.</td>
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<td>021:141</td>
<td>Reference and Information Services</td>
<td>2 s.h.</td>
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<td>021:142</td>
<td>Web Search Engines</td>
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021:143 Resources for Children 3 s.h.
Evaluation and selection of print and electronic resources appropriate for preschool and preadolescent children; developmental stages of children as they relate to resources.

021:144 Resources for Young Adults 3 s.h.
Evaluation and selection of print and electronic resources appropriate for adolescents; reference tools for young adult services; library programming for young adults.

021:202 Research Methods 3 s.h.
Concepts and methods for research in library and information science; emphasis on design of qualitative and quantitative research; research collection; techniques appropriate to information professions; examination and evaluation of research in the professional literature.

021:220 Java Programming 3 s.h.
Introduction to programming using Java; algorithms, data manipulation and structures; object-orientation; monolithic and distributed applications; client/server software development.

021:222 Organization of Information Resources II 3 s.h.
Special problems in description of materials; authority work; file structures; serials, other nonmonographic materials; Library of Congress, other classifications; subject retrieval; reclassification, other administrative issues; international bibliographic criteria; online cataloging experience. Prerequisite: 021:228 Hypertext Systems.

021:224 Electronic Publishing 2 s.h.

021:226 Digital Libraries 2 s.h.

021:228 Hypertext Systems 2 s.h.
Theory, design, and implementation of hypertext-based information systems; access mechanisms, including navigation, browsing, search; issues in representation of information, user interfaces; case studies of representative systems, including the World Wide Web. Prerequisite: 021:101.

021:230 Text Retrieval 3 s.h.
Theories for automatic text representation and retrieval using text databases; evaluation methodologies; alternative query models-Boolean, extended Boolean, probabilistic, vector fuzzy, rough set models; vocabulary normalization; web search engines, metadata. Prerequisite: 021:120. Same as 06K:233.

021:232 Computer Networks 3 s.h.
Fundamental concepts in telecommunications and networking; survey of network technologies and services, with emphasis on understanding digital data communications and their role in business organizations. Prerequisites: 06K:220 and 22C:106. Same as 06K:250.

021:234 Distributed Information Systems 2 s.h.
Issues in distributed, networked, heterogeneous, and distributed information environments (intranets, web); hypertext, XML, CGI, and scripting languages; algorithms for coping with information overload and scalability indexing, crawlers, search engines, information filtering, information agents and brokers. Corequisites: 06K:230 or 06K:250. Same as 063:234.

021:239 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). Prerequisite: 021:120.

021:240 Collection Development 2 s.h.
Collection development and management, acquisitions in libraries and information centers; principles, policies, procedures specific to various settings and applicable to print and electronic resources for internal collection, external access information.

021:242 Online Information Systems 2 s.h.
State-of-the-art online information systems, free-based and fee-based; theories and behavioral models in information seeking, services, management.

021:244 Government Information Resources 3 s.h.
Emphasis on federal documents as an information resource; state, local, and non-governmental material; special concerns of organizing and administering document collections.

021:246 Programming for Youth Services 1 s.h.
Design of library automation programming for children; policy issues in children’s services; technology applications appropriate to youth services.

021:248 Information Literacy 1 s.h.
Models of the information search process; design of information literacy curriculum teaching strategies based on models; emphasis on theory and research on behaviors and skills of information seekers. Corequisite: 021:101.

021:250 Resources for Adults 2 s.h.
Evaluation and selection of popular and high-quality print, nonprint, and electronic resources for adults, including genre fiction and nonfiction works for the generalist; guidance in conducting the reader’s advisory interview and developing self-help and assisted search strategies for browsers.

021:254 Analysis of Scholarly Domains 2 s.h.
Information transfer in academic disciplines; scientific method, other means of knowledge construction, resulting literatures; reference tools using support; strategies for evaluating audiences; emphasis on humanities, social sciences, or sciences. Prerequisite: 201:141.

021:256 History of the Book 3 s.h.
Technological, social, cultural dimensions of the printed book through major texts in the field. Same as 108:205, 008:203.

021:259 Topics: Resources/Services 1-3 s.h.
Current topics in types of information resources and services.

021:260 Strategic Management 2 s.h.
Principles of strategic planning, management, leadership, user-centered library and information center services, designing internal management information systems for decision making, creating a climate conducive to change.

021:261 Personnel Management 1 s.h.
Principles of employee motivation and development, organizational structure, and strategic personnel practices, including recruiting, interviewing, hiring, training, performance evaluation.

021:262 School Library Media Administration 2 s.h.
Design of library media programs; development of philosophy, analysis of functions, program/personnel evaluation; emphasis on curriculum and teaching roles of library media specialists.

021:264 Program Evaluation 1 s.h.
Purposes of program evaluation, including improvement, accreditation, fundraising, community relations, and public relations. Corequisite: 021:202.

021:266 Budget and Finance Issues 2 s.h.

021:267 Marketing: Cost Effectiveness 1 s.h.
Factors affecting quality, quantity, and match of services and collections and consideration of cost effectiveness issues.

021:268 Marketing: Promotion 2 s.h.
Research and application of graphic design principles to promote integrated use of services and collections by current and potential customers.

021:270 Public Libraries 2 s.h.
Public libraries’ history, effectiveness, governance, outreach programs, introduction and effective use of technology, career development patterns. Corequisite: 021:260.

021:271 College and University Libraries 2 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. Corequisites: 021:260 or 021:262.

021:272 Special Libraries 2 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. Corequisite: 021:260 or 021:262.

021:273 Informatics and Law 3 s.h.
Legal information and services; policy and planning issues.

021:274 Health Care Classifications and Knowledge Building 3 s.h.
Strategies for using health and health care language effective classifications that support evidence-based practice, knowledge development, clinical decision making. Graduating standing or consent of instructor required. Same as 096:285.

021:275 Informatics Tools for Health Care Decision Support 3 s.h.
Technological tools that support health care administration, management, and decision making. Graduate standing or consent of instructor required. Same as 068:225, 050:283, 056:287, 096:285, 174:226.

021:276 Facilities 1 s.h.
Principles used to evaluate the mission of a library and information center and to translate the needs of users, staff, and parent organization into a building program; research on wayfinding, environmental design.

021:277 International Information Networks 1 s.h.

021:278 Information Policy 2 s.h.
Development of policy based on ethical and legal issues in library and information professions; intellectual freedom, intellectual property, privacy, equity.

021:279 Topics: Policy/Planning 1-3 s.h.
Current topics in national and international policies, their impact on planning. Prerequisite: 021:260.

021:282 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. Prerequisite: 15 semester hours in library and information science.

021:284 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. Prerequisite: 021:262.

021:286 Research Practicum 1-3 s.h.
Student research conducted in conjunction with a faculty member’s research. Consent of instructor, adviser, and director required. Prerequisite: 021:202.

021:288 Workshop: Library and Information Science 3 s.h.
Short-term intensive study of selected topic or problem.

021:290 Capstone 1 s.h.
Selected issues such as information policy, role of public libraries in raising information literacy; complements 021:101. Prerequisite: 12 semester hours in library and information science.

021:292 Independent Study 1-3 s.h.
Formal contract between student and faculty member. Consent of instructor and formal proposal required.

021:299 Thesis 6 s.h.

MOLeCULAR BIOLOGY

Director: Curt D. Sigmund (Internal Medicine)
Affiliated faculty: Michael Apicella (Microbiology), Arthur Arnone (Biochemistry), Nikolai Artemyev (Physiology and Biophysics), Mario Ascoli (Pharmacology), Gail Bishop (Microbiology), Kevin Campbell (Physiology and Biophysics), Chi-Lien Cheng (Biological Sciences), Steven Clegg (Microbiology), Michael Cohen (Pathology), Beverly Davidson (Internal Medicine), Robert Deschenes (Biochemistry), Frederick Domann (Radiology), John E. Donelson (Biochemistry), John Engelhardt (Anatomy and Cell Biology), Sarah England (Physiology and Biophysics), Jan Faessler (Biological Sciences), Michael Feiss (Microbiology), Alice Fulton (Biochemistry), Minnetta Gardinier (Pharmacology), Pamela Geyer (Biochemistry), Steven Green (Biological Sciences), E. Peter Greenberg (Microbiology), Gary Gussin (Biological Sciences), Gregory S. Hageman (Ophthalmology and Visual Sciences), Rebecca Hartley (Anatomy and Cell Biology), Donald Heistad (Internal Medicine), Mary Hendrix (Anatomy and Cell Biology), Joseph Hill (Internal Medicine), Wayne A. Johnson (Physiology and Biophysics), Bradley Jordan (Microbiology), John Koland (Pharmacology), C. Michael Knudson (Pathology), Steven Lentz (Internal Medicine), Jim Jung-Ching Lin (Biological Sciences), Charles T. Lutz (Pathology), Linda McCartor (Microbiology), John R. Menninger (Biological Sciences), Scott Moye-Rowley (Physiology)
Doctor of Philosophy

The Molecular 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 areas related to gene expression and regulation. The principal didactic component of the program is a sequence of core courses in prokaryotic and eukaryotic molecular biology. Students engage in laboratory research immediately upon enrollment and progress rapidly to original thesis projects that lead to the Ph.D. in molecular biology.

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 courses during the first year of graduate study.

The curriculum consists of a sequence of required and elective courses that provide didactic training in molecular biology and ensure a comprehensive exposure to the concepts and experimental methodologies of this field. Because of the diversity of biological research problems that can be pursued by employing molecular biological approaches, the program provides a variety of options for specialization in particular areas of interest.

The following courses are required of all students.

099:241 Biophysical Chemistry I 3 s.h.
142:215 Molecular Biology II 3 s.h.
142:220 Seminar in Molecular Biology 1 s.h.
142:305 Molecular Biology Research (required of all students throughout the first and second years) 4 s.h.
156:201 Principles in Molecular and Cell Biology 4 s.h.
650:270 Responsible Conduct in Research 1 s.h.

In addition, all students are required to complete at least 10 semester hours in four or more approved elective courses.

After successful completion of the comprehensive examination, usually at the end of the second year of graduate study, students advance to candidacy for the Ph.D. degree, where they devote full-time effort to completing their dissertation and writing the Ph.D. dissertation. Upon successful completion of all requirements, including the dissertation and its oral defense, in accordance with rules and regulations of the Graduate College, students are awarded the Ph.D. degree in molecular biology.

Admission

Individuals seeking application materials and information about graduate training in molecular biology should contact the Molecular Biology Program.

Financial Support

Graduate students in the Molecular Biology Program receive stipends and tuition support from institutional and extramural sources, including training grants from the National Institutes of Health as well as University of Iowa fellowship funds and graduate research assistantships.

Facilities

Training is conducted primarily in laboratories and teaching facilities of the Departments of Anatomy and Cell Biology, Biochemistry, Biological Sciences, Internal Medicine, Microbiology, Pathology, Pediatrics, Pharmacology, and Physiology and Biophysics. Faculty laboratories and central research facilities available to students provide access to the most up-to-date research equipment.

Courses

142:210 Molecular Biology I 4 s.h. Mechanism and regulation of RNA, DNA, protein biosynthesis in prokaryotes and eukaryotes; emphasis on experimental methods for biochemical, genetic, recombinant DNA analysis of these processes. Prerequisites: 002:128 and 099:130 or equivalent. Same as 061:210
142:215 Molecular Biology II 3 s.h. Mechanism and regulation of RNA, DNA, protein biosynthesis in eukaryotes; experimental methods for analysis of these processes. Prerequisite: 156:201
142:220 Cell Biology I 3 s.h. Integration of concepts of cell biology, original research data concerning structure, chemistry, function of cellular organelles, their assembly; emphasis on relation of cellular structure, function from macromolecular to organelle-cellular levels of organization; plasma membrane, endoplasmic reticulum, cytoskeleton, centriole and centrosome; Golgi apparatus, lysosome, mitochondria, nucleus. Prerequisites: introductory biology courses, an additional course in biology/cell biology, and 099:130 or equivalent. Same as 072:220
142:225 Cell Biology II 3 s.h. Concepts, development; in physiology and regulation of eukaryotic cell processes; emphasis on biochemical, physiological aspects of cellular functions, including membrane processes; cell-cell recognition, adhesion, communication, cell-cell interactions, intercellular signaling mechanisms, regulation of cell division. Prerequisite: 142:220. Same as 072:225
142:290 Seminar in Molecular Biology 1 s.h. Research findings in molecular biology. May be repeated up to a total of 4 s.h. Graduate standing in molecular biology or consent of instructor required.
142:301 Directed Study in Molecular Biology arr. Consent of instructor required.
142:305 Molecular Biology Research arr. Graduate standing in molecular biology and consent of instructor required.
142:405 Thesis arr. Open only to advanced degree candidates in molecular biology.

NEUROSCIENCE

Chair: Michael Miller (Psychiatry)
Affiliated faculty: Paul J. Abbas (Speech Pathology and Audiology), Francois Abouard (Internal Medicine), Harold Adams (Neurology), Ralph Adolfs (Neurology), Steven Anderson (Neurology), Nancy C. Andreasen (Psychiatry), Mark Arnold (Chemistry), Gary Baumbach (Pathology), Antoine Bechara (Neurology), Randhir K. Bhatnagar (Pharmacology), Klaus Bielefeldt (Internal Medicine), Mark Blumburg (Psychology), Daniel Bonhaus (Pediatrics), Timothy Brennan (Anesthesiology), Kevin P. Campbell (Physiology and Biophysics), Mark Chaplaue (Internal Medicine), Kelly J. Cole (Exercise Science), Joe D. Couther (Anatomy and Cell Biology), Michael E. Dailey (Biological Sciences), Antonio Damasio (Neurology), Hanno Damasio (Neurology), Warren Darling (Exercise Science), Beverly Davidson (Internal Medicine), Robin Davison (Anatomy and Cell Biology), Jeffrey L. Desberg (Biological Sciences), Mary A. Ditson (Pharmacology), Daniel Eberl (Biological Sciences), Sarah England (Physiology and Biophysics), Frank Faraci (Internal Medicine), Robert Felder (Internal Medicine), Robert E. Fellows (Physiology and Biophysics), Kenneth Follett (Neurosurgery), John Freeman (Psychology), Bruce J. Gantz (Otolaryngology-Head and Neck Surgery), Minnetta Gardinier (Pharmacology), Gerald F. Gehrt (Pharmacology), Carl V. Gisolfi (Exercise Science-Physiology and Biophysics), Thomas Grabowski Jr. (Neurology), Steven Green (Biological Sciences), Donald D. Heistad (Internal Medicine), Toshinori Hoshi (Physiology and Biophysics), Matthew Howard III (Neurosurgery), Richard H. Hurtig (Speech and Audiology), Jean A. Yew (Anatomy and Cell Biology), Alan Kim Johnson (Psychology), Wayne Johnson (Physiology and Biophysics), Alan Kay (Biological Sciences), Heli-Kristi Kaltus-Ilinsky (Anatomy and Cell Biology), Gloria Lee (Internal Medicine), Ramon Lin (Neurology), Steven Luck (Psychology), Michael Miller (Psychiatry), Steven Moore (Pathology), M. Sue O’Dorisio (Pediatrics), Nicholas J. Pantazis (Anatomy and Cell Biology), Jane Paulsen (Psychiatry), Henry Robinson (Psychiatry), Stanley Perlman (Pediatrics), Robert Philbert (Psychiatry), William J. Rhead (Pediatrics), Mathew Rizzo (Neurology), Robert G. Robinson (Psychiatry), Scott Robinson (Psychology), Kathleen Rockland (Neurology), Jay Rubinstein (Otolaryngology-Head and Neck Surgery), Andrew Rassier (Physiology and Biophysics), Philip G. Schmid (Internal Medicine), E. Irwin Shihara (Physiology and Biophysics), Kathleen Sluka (Physical Therapy), Eugene Spuziani (Biological Sciences), Barbara A. Stay (Biological Sciences), William Talman (Neurology), Daniel Tanel (Neurology), Christopher Turner (Speech Pathology and Audiology), Gary W. Van Hoesen (Anatomy and Cell Biology), Ruth Wachtel (Anesthesiology), Michael Wall (Neurology), Edward A. Wasserman (Psychology), Rafaj Waziri (Psychiatry) Michael Welsh (Internal Medicine), Terence H. Williams (Anatomy and Cell Biology), Chun-Fang Wu (Biological Sciences)
Graduate degree: Ph.D. in Neuroscience
Web site: http://www.uiowa.edu/~interdis

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 behavior.
Doctor of Philosophy

Because of its interdisciplinary nature and the diverse backgrounds of entering students, the program provides considerable flexibility in curriculum structure. The plan of study for each student is developed to provide background courses and electives appropriate to individual training objectives.

The program’s curriculum is based on two primary considerations: to provide a sequence of required courses that ensure graduate students a broad and comprehensive exposure to the conceptual and experimental foundations of modern neuroscience; and to provide a flexible program of elective courses and advanced training that, while taking into account the multidisciplinary nature of neuroscience, permits in-depth study within any of its five subdivisions: molecular neuroscience, cellular neuroscience, developmental neuroscience, neural systems, and behavioral neuroscience. The curriculum operates in tandem with research rotations and credits in the full training experience.

BACKGROUND

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

These eight required courses form the core of the neuroscience graduate curriculum.

132:180 Fundamental Neuroscience 4 s.h.
132:181 Neurophysiology 3 s.h.
132:244 Medical Neuroscience 4 s.h.
132:241 Behavioral and Cognitive Neuroscience 3 s.h.
132:246 Developmental Neurobiology 2 s.h.
132:335 Topics in Systems Neuroscience 2 s.h.

In addition, students register for the following two courses each semester.

132:265 Neuroscience Seminar 0-1 s.h.
132:305 Neuroscience Research arr.

ELECTIVES

All Neuroscience Program students are required to take three or more advanced elective courses, for a total of at least 6 semester hours. These are selected from an approved list of courses offered by the Departments of Anatomy and Cell Biology, Biological Sciences, Pharmacology, Physiology and Biophysics, Psychology, and other departments of the Graduate Colleges of the Health Sciences. Elective courses should be selected from at least two of the five subdivisions of the neuroscience program. Students should select courses from the subdivision that represents their area of specialization and at least one course from a related subdivision.

Admission

Information about predoctoral and postdoctoral training opportunities in the neurosciences is available from the Neuroscience Program office.

Financial Support

Neuroscience graduate students are eligible for stipends and tuition support, including training grants from the National Institutes of Health and the National Institute of Mental Health, and University fellowships and graduate research assistantships.

Facilities

Training is conducted primarily in the laboratories and teaching facilities of the graduate Departments of Anatomy and Cell Biology, Biological Sciences, Pharmacology, Physiology and Biophysics, Psychology, and Speech Pathology and Audiology, and the clinical Departments of Internal Medicine, Neurology, and Psychiatry. Students use faculty laboratories and central research facilities for ultrastructural analysis; histochecmistry and immunocytochemistry; electrophysiology; fluorescence-activated cell sorting; cellular and subcellular biochemistry; cell, tissue, and organ culture; operant and classical conditioning; molecular biology; and behavioral genetics.

Courses

132:180 Fundamental Neuroscience 4 s.h.
132:181 Neurophysiology 3 s.h.
132:244 Medical Neuroscience 4 s.h.
132:241 Behavioral and Cognitive Neuroscience 3 s.h.
132:246 Developmental Neurobiology 2 s.h.
132:335 Topics in Systems Neuroscience 2 s.h.

In addition, students register for the following two courses each semester.

132:265 Neuroscience Seminar 0-1 s.h.
132:305 Neuroscience Research arr.

QUALITY MANAGEMENT AND PRODUCTIVITY

Chair: Russell V. Lenth (Statistics and Actuarial Science)
Affiliated faculty: Dennis L. Bricker (Industrial Engineering), Jonathan D. Cryer (Statistics and Actuarial Science), Robert V. Hogg (Statistics and Actuarial Science), Raj Jagannathan (Management Sciences), Philip C. Jones (Management Sciences), Johannes Ledolter (Management Sciences/Statistics and Actuarial Science), Timothy J. Lowe (Management Sciences)
Graduate degree: M.S. in Quality Management and Productivity
Web site: http://www.stat.uiowa.edu/OMP

Quality has been defined as the totality of features and characteristics of a product that bear on its ability to satisfy a given need. Quality concepts have been found to be equally applicable to services and processes as well as to products. Good quality has been shown to be good business, because it improves profitability and competitiveness.

Students in the quality management and productivity program learn how to apply techniques in management, engineering, and statistics and study to improve quality in manufacturing, government, health care, and other endeavors. They have both the technical skills to be good problem solvers and the management and interpersonal skills to work effectively with other problem solvers. Many graduates of the program now hold leadership positions in manufacturing or service companies.

Master of Science

To earn an M.S. in quality management and productivity, students must complete at least 36 semester hours of graduate course work, including a core set of courses in statistics and quality and a coherent selection of courses in engineering, business, or other quality-related fields.

Students must maintain a grade-point average of 3.00 or higher in the courses included in the program of study.
Admission

The following courses are required.

- 22S:162 Applied Generalized Regression 3 s.h.
- 136:135 Continuous Quality Improvement 3 s.h.
- 136:200 Seminar: Quality Management and Productivity (at least two semesters) 2 s.h.
- 136:210 Managing for Total Quality 3 s.h.

At least two of these (with adviser’s approval):

- 22S:156 Applied Time Series Analysis 3 s.h.
- 063:278 Forecasting 3 s.h.
- 063:284 Operations Strategy 3 s.h.
- 06K:277 Management Sciences Topics 3 s.h.
- 056:171 Operations Research 3 s.h.
- 056:153 Engineering Administration I 3 s.h.
- 056:253 Engineering Administration II 3 s.h.

Other engineering, business, or quality-related course(s) approved by the adviser

Students usually earn the remainder of the 36 required semester hours by writing a thesis (136:299, for up to 6 semester hours) and taking an extra semester of 136:200 or an elective. A comprehensive examination administered by the thesis committee precedes writing of the thesis, and a thesis defense follows.

A non-thesis program is possible. The student and his or her adviser agree on a program of additional courses, and a more extensive comprehensive examination is required.

Students are encouraged to work on internships with industry, business, or government. The adviser helps identify such opportunities, and internship experience is recorded on the transcript through registration for 136:000 Cooperative Education Internship. Often, the internship experience motivates the topic of the thesis work.

Admission

The program seeks outstanding students with backgrounds in business, engineering, mathematics, or statistics. Applicants must have good communication skills and a solid mathematical background consisting of at least two semesters of calculus plus linear algebra.

Applicants are not considered for admission to the program until they have submitted an official application to the University. Final admission requires official transcripts from each undergraduate and graduate institution attended, three letters of recommendation and official GRE or GMAT scores. Students whose native language is not English must submit an official TOEFL score. Applicants whose undergraduate grade-point average is at least 3.20 and who have a GRE or GMAT quantitative score at or above the 75th percentile have the best chance of being admitted.

Financial Support

Limited financial support is available through scholarships and other grants from the program. Support from research or teaching assistantships may be available through one of the departments involved in the program. For information about graduate assistantships, contact the program’s admissions director.

Courses

- 136:000 Cooperative Education Internship 0 s.h.
- 136:135 Continuous Quality Improvement 3 s.h.
- 136:210 Managing for Total Quality 3 s.h.
- 136:200 Seminar: Quality Management and Productivity 1 s.h.

Other engineering, business, or quality-related course(s) approved by the adviser

The project on Rhetorics of Inquiry (POROI) is an interdisciplinary research and study program focusing on improving academic inquiry, argumentation, and writing by understanding the persuasive bases of scholarly work. The program began informally in 1980 when faculty from several disciplines began discussing their work in progress. In addition to the Rhetoric Seminar, a group of POROI faculty and associates.

Introduction Course

- 160:200 Introduction to Rhetorics of Inquiry 2-4 s.h.

Intermediate Seminars

- 160:300 Writing for Learned Journals 1-4 s.h.
- 160:313 Digital Rhetoric: Electronic Textnology in Scholarly Research 2-4 s.h.
- 160:505 Seminar in Comparative Disciplinary Rhetorics 2-4 s.h.

Capstone Workshop

- 160:400 Writing Dissertations 3-4 s.h.

ORAL PRESENTATION OF PAPER

The program is completed when candidates present a polished paper for discussion in the Rhetoric Seminar, a group of POROI faculty and associates.

Admission

To enter the certificate program, applicants must have earned a cumulative grade-point average of at least 3.50 on all previous graduate course work. University of Iowa applicants must be admitted to a UI doctoral program. Doctoral students visiting from other institutions may be granted admission upon special consideration by the Graduate College and the certificate program’s curriculum committee.

Before admission, applicants draw up a plan of study that outlines their goals as agreed upon with their doctoral adviser and the certificate program director. The plan becomes the basis for identifying appropriate intermediate seminars.

Admission is approved by the certificate program director. Admitted students participate in POROI activities, use the POROI study room and library, and seek out POROI students and faculty.
faculty as critical audiences for their work. Classroom work is complemented by workshops, lectures, and conferences University-wide.

For more information, visit the POROI web site, contact the program’s director, and see “Project on Rhetorics of Inquiry” in the Special Resources section of the Catalog.

**Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>160:200</td>
<td>Introduction to Rhetorics of Inquiry</td>
<td>2-4</td>
</tr>
<tr>
<td>160:300</td>
<td>Writing for Learned Journals</td>
<td>1.4</td>
</tr>
<tr>
<td>160:313</td>
<td>Digital Rhetoric: Electronic Textontology in Scholarly Research</td>
<td>2-4</td>
</tr>
<tr>
<td>160:400</td>
<td>Writing Dissertations</td>
<td>3-4</td>
</tr>
<tr>
<td>160:505</td>
<td>Seminar in Comparative Disciplinary Rhetorics</td>
<td>2.4</td>
</tr>
</tbody>
</table>

**SECOND LANGUAGE ACQUISITION**

Director: L. Kathy Heilenman (French and Italian/Curriculum and Instruction)
Affiliated faculty: Stephen M. Alessi (Psychological and Quantitative Foundations), Micheline Chalhoub-Deville (Curriculum and Instruction), William D. Davies (Linguistics), Michael E. Everson (Curriculum and Instruction), Elena Gavraseva (Linguistics), Yukico Abe Hatasa (Asian Languages and Literature), L. Kathy Heilenman (French and Italian/Curriculum and Instruction), Chuanren Ke (Asian Languages and Literature), Paula Kemphinsky (Spanish and Portuguese), Judith E. Likli-Gaparro (Spanish and Portuguese), Mercedes Ntiro-Murcia (Spanish and Portuguese), Sue K. Otto (Spanish and Portuguese), James P. Pasack (German), Leslie Schrier (Curriculum and Instruction/Spanish and Portuguese), Carol SERVINO (Rhetoric), Roumeyas Slabakova (Linguistics), Irene M. Wherritt (Spanish and Portuguese)
Graduate degree: Ph.D. in Second Language Acquisition

Second language acquisition (SLA) is a multidisciplinary field whose goal is to understand the processes that underlie the learning of a non-native language. Second language acquisition draws from a variety of academic disciplines, among them linguistics, psychology, psycholinguistics, sociology, sociolinguistics, discourse analysis, conversation analysis, and education.

**Doctor of Philosophy**

Like the field itself, the Ph.D. degree in second language acquisition is interdisciplinary. Students interested in pursuing the Ph.D. must hold an M.A. in an appropriate field (e.g., linguistics, foreign language education, English as a second language), or they must have equivalent academic experience.

Doctoral students may specialize in one of three areas: linguistics, language program direction, or technology. Students may pursue their interdisciplinary interests in courses offered by the Departments of Asian Languages and Literature, French and Italian, German, Linguistics, Rhetoric, Spanish and Portuguese, and Speech Pathology and Audiology, and the Divisions of Curriculum and Instruction, and Psychological and Quantitative Foundations.

**Requirements**

The program requires 72 semester hours, including a maximum of 33 semester hours earned in work toward the master’s degree. The program is divided into foundation courses (13 courses, or 39 semester hours); specialization courses (5 courses, or 15 semester hours), and dissertation work (18 semester hours).

**FOUNDATION COURSES**

All of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>164:201</td>
<td>Second Language Acquisition Research and Theory I</td>
<td>3</td>
</tr>
<tr>
<td>164:202</td>
<td>Second Language Acquisition Research and Theory II</td>
<td>3</td>
</tr>
<tr>
<td>164:211</td>
<td>Multimedia and Second Language Acquisition</td>
<td>3</td>
</tr>
</tbody>
</table>

Two of these:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>164:221</td>
<td>Topics in Second Language Acquisition: Speaking</td>
<td>3</td>
</tr>
<tr>
<td>164:223</td>
<td>Topics in Second Language Acquisition: Listening</td>
<td>3</td>
</tr>
<tr>
<td>164:225</td>
<td>Topics in Second Language Acquisition: Reading</td>
<td>3</td>
</tr>
<tr>
<td>or</td>
<td>164:226 Reading in the Non-Roman Scripts</td>
<td>3</td>
</tr>
<tr>
<td>164:227</td>
<td>Topics in Second Language Acquisition: Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

To complete the foundation requirement, students select one course from each of the following eight areas, in consultation with their adviser. With the adviser’s approval, courses not listed here may be used to fulfill the requirement.

**Curriculum**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>07E:300</td>
<td>Design and Organization of Curriculum</td>
<td>3</td>
</tr>
<tr>
<td>07E:186</td>
<td>Curriculum Foundations</td>
<td>2-3</td>
</tr>
<tr>
<td>07E:197</td>
<td>Principles of Course Design for Second Language Instruction</td>
<td>3</td>
</tr>
</tbody>
</table>

**Quantitative Research Tools**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>07P:143</td>
<td>Introduction to Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>07P:220</td>
<td>Educational Research Methodology</td>
<td>3</td>
</tr>
<tr>
<td>07P:243</td>
<td>Intermediate Statistical Methods</td>
<td>3</td>
</tr>
<tr>
<td>07P:244</td>
<td>Correlation and Regression</td>
<td>4</td>
</tr>
<tr>
<td>07P:246</td>
<td>Design of Experiments</td>
<td>4</td>
</tr>
</tbody>
</table>

**Qualitative Research Tools**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>07D:373</td>
<td>Qualitative Research Design and Methods</td>
<td>3</td>
</tr>
<tr>
<td>164:205</td>
<td>Analysis of L1 and L2 Data</td>
<td>3</td>
</tr>
</tbody>
</table>

**Testing, Evaluation, Measurement**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>07P:150</td>
<td>Introduction to Educational Measurement</td>
<td>3-4</td>
</tr>
<tr>
<td>07P:165</td>
<td>Introduction to Program Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>07P:255</td>
<td>Construction and Use of Evaluation Instruments</td>
<td>3</td>
</tr>
<tr>
<td>07P:257</td>
<td>Educational Measurement and Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>07P:258</td>
<td>Theory and Technique in Educational Measurement</td>
<td>3</td>
</tr>
<tr>
<td>07P:265</td>
<td>Program Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>07S:200</td>
<td>Fundamentals of Second Language Assessment</td>
<td>3</td>
</tr>
</tbody>
</table>

**Methodology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>009:234</td>
<td>Principles of Teaching and Learning Foreign Languages</td>
<td>3</td>
</tr>
<tr>
<td>030:200</td>
<td>Foreign Language Teaching Methods</td>
<td>3</td>
</tr>
<tr>
<td>039:202</td>
<td>Teaching Chinese as a Foreign Language: Issues and Research</td>
<td>3</td>
</tr>
<tr>
<td>039:203</td>
<td>Teaching Chinese as a Foreign Language: Curriculum, Methodology, and Assessment</td>
<td>3</td>
</tr>
<tr>
<td>039:202</td>
<td>Japanese as a Foreign Language: Practical Applications</td>
<td>3</td>
</tr>
<tr>
<td>103:145</td>
<td>Methods of Teaching English as a Second Language</td>
<td>3</td>
</tr>
</tbody>
</table>

**Phonetics, Phonology**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>035:209</td>
<td>Spanish Phonology</td>
<td>3</td>
</tr>
<tr>
<td>035:110</td>
<td>Articulatory and Acoustic Phonetics</td>
<td>3</td>
</tr>
<tr>
<td>035:112</td>
<td>Phonological Analysis</td>
<td>3</td>
</tr>
<tr>
<td>035:203</td>
<td>Introduction to Phonology</td>
<td>3</td>
</tr>
<tr>
<td>035:204</td>
<td>Phonological Theory</td>
<td>3</td>
</tr>
<tr>
<td>035:214</td>
<td>Advanced Phonological Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

**Morphology, Syntax**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>013:256</td>
<td>Modern German Syntax</td>
<td>3</td>
</tr>
<tr>
<td>035:171</td>
<td>Spanish Syntax</td>
<td>3</td>
</tr>
<tr>
<td>035:207</td>
<td>Topics in Comparative Romance Linguistics</td>
<td>3</td>
</tr>
<tr>
<td>035:210</td>
<td>Advanced Spanish Syntax</td>
<td>3</td>
</tr>
<tr>
<td>041:203</td>
<td>Russian Morphology</td>
<td>3</td>
</tr>
<tr>
<td>041:205</td>
<td>Russian Syntax</td>
<td>3</td>
</tr>
<tr>
<td>103:111</td>
<td>Syntactic Analysis</td>
<td>3</td>
</tr>
<tr>
<td>103:201</td>
<td>Introduction to Syntax</td>
<td>3</td>
</tr>
<tr>
<td>103:202</td>
<td>Syntactic Theory</td>
<td>3</td>
</tr>
<tr>
<td>103:212</td>
<td>Advanced Syntactic Theory</td>
<td>3</td>
</tr>
</tbody>
</table>

**Linguistics**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>103:141</td>
<td>The Structure of English</td>
<td>3</td>
</tr>
<tr>
<td>103:147</td>
<td>Research Methods</td>
<td>3</td>
</tr>
<tr>
<td>103:150</td>
<td>Language and Gender</td>
<td>3</td>
</tr>
<tr>
<td>103:153</td>
<td>Sociolinguistics</td>
<td>3</td>
</tr>
<tr>
<td>103:155</td>
<td>Morphology</td>
<td>3</td>
</tr>
<tr>
<td>103:156</td>
<td>Linguistic Theory and Language Acquisition</td>
<td>3</td>
</tr>
<tr>
<td>103:163</td>
<td>Philosophy of Language</td>
<td>3</td>
</tr>
<tr>
<td>103:170</td>
<td>Language and Culture</td>
<td>3</td>
</tr>
<tr>
<td>103:171</td>
<td>Anthropological Linguistics</td>
<td>3</td>
</tr>
</tbody>
</table>
Linguistics Specialization

Requirements for the linguistics specialization are as follows.
One of the following three-course sequences (Group 1 or Group 2):

Group 1:
- 103:203 Introduction to Phonology 3 s.h.
- 103:204 Phonological Theory 3 s.h.
- 103:214 Advanced Phonological Theory 3 s.h.

Group 2:
- 103:201 Introduction to Syntax 3 s.h.
- 103:202 Syntactic Theory 3 s.h.
- 103:212 Advanced Syntactic Theory 3 s.h.

One of these:
- 035:211 Language Acquisition Theories 3 s.h.
- 103:173 Applied Linguistics 3 s.h.

Another course on linguistic theory and second language acquisition

One of these:
- 031:113 (103:115) Language Processing 3 s.h.
- 031:117 (103:172) Psychology of Prenatal Development 3 s.h.
- 031:218 Cognitive Development 3 s.h.
- 031:219 Psychology of Language 3 s.h.

Another course on parsing/psycholinguistic mechanisms

Language Program Direction Specialization

Students who choose the language program direction specialization take five of the following courses (chosen from those not taken to satisfy the foundation requirements).

07S:180 Issues in Foreign Language Education 3 s.h.
07S:183 Second Language Classroom Learning 3 s.h.
07S:197 Principles of Course Design for Second Language Instruction 3 s.h.
07S:202 Second Language Program Management 3 s.h.
010:345 Research on Writing 3 s.h.
035:205 Topics in Graduate Foreign Language Pedagogy 3 s.h.
039:258 Theoretical Foundation of Japanese 3 s.h.
164:205 Analysis of L1 and L2 Data 3 s.h.
164:221 Topics in Second Language Acquisition: Speaking 3 s.h.
164:223 Topics in Second Language Acquisition: Listening 3 s.h.
164:225 Topics in Second Language Acquisition: Reading 3 s.h.

164:226 Reading in the Non-Roman Scripts 3 s.h.
164:227 Topics in Second Language Acquisition: Writing 3 s.h.
164:230 Internship arr.

Technology Specialization

Requirements for the technology specialization are as follows.

164:212 Practicum in CALL Software Development 1-4 s.h.

Students choose a minimum of 5 semester hours of specialization-related elective courses from the following (others may be approved by the student's adviser).

07W:100 Video studio production 1 s.h.
07W:101 Digital Graphics 1 s.h.
07W:102 Digital Photo 1 s.h.
07W:103 Digital Audio 1 s.h.
07W:104 Digital Video 1 s.h.
07W:105 Global Networks for Instruction 1 s.h.
07W:106 Authoring Computerized Instruction 1 s.h.
07W:134 Instructional Video Production 3 s.h.
07W:220 Advanced Instructional Design 3 s.h.
07W:245 Instructional Computer Simulations 3 s.h.
07W:293 Independent Study arr.

THESIS REQUIREMENT
All candidates must complete a thesis (164:303 Ph.D. Thesis), for which they may earn up to 18 semester hours.

OPTIONAL COURSE WORK
Students may include the following optional course work in their degree programs.

164:300 Special Topics in Second Language Acquisition arr.
THIRD WORLD DEVELOPMENT SUPPORT

Director: Douglas Midgett
Affiliated faculty: Joel Barkan (Political Science), Daniel Berkowitz (Journalism and Mass Communication), Michaeline Crichtlow (African American World Studies), James Giblin (History/African American World Studies), Jan Albert Grattana (Art and Art History), Rex Honey (Geography), Scott McNabb (Planning, Policy, and Leadership Studies), Michael McNulty (Geography), Douglas Midget (Anthropology), Ted Mutersbaugh (Geography/Civil and Environmental Engineering), Salome Raheim (Social Work), Rebecca Roberts (Geography), Joel Stillman (Women’s Studies), Kenneth Starck (Journalism and Mass Communication)

Graduate degree: M.A. in Third World Development Support
Web site: http://www.uiowa.edu/-intl/links/pds/pdshome.htm

Third World Development Support offers students an education in the broad issues of Third World development, with emphasis on support services that social sciences offer to the development process. The program promotes interdisciplinary scholarship, research, and applied professionalism related to development problem solving.

The program’s faculty represents departments across the University, including African American world studies, anthropology, art and art history, civil and environmental engineering, geography, history, journalism and mass communication, political science, women’s studies, and planning, policy, and leadership studies. Many faculty members are involved in training efforts in the United States and abroad, and many are consultants to international agencies on development program design and evaluation.

Students from diverse backgrounds and professional experiences enroll in the program. Many foreign students who have graduated from the program have returned to jobs in their home countries, some to inaugurate development support communication programs in their national universities or in the institutional frameworks of their countries’ governments. Other students have taken positions with organizations such as UNICEF, FAO, WHO, the World Bank, the Peace Corps, and the Academy for Educational Development.

Master of Arts

Third World Development Support offers a graduate degree in conjunction with International Programs and the Graduate College. Students may pursue a Master of Arts degree through a program of study designed especially for individuals who plan to pursue or are already pursuing careers in forming and implementing development strategies.

Students may choose from two tracks. The academic track, known as development support studies, is a research-based option intended for students who plan to pursue doctoral studies at The University of Iowa or another institution. The academic track requires a thesis.

The professional track is practice based. It is intended for students who seek a terminal M.A. and plan to pursue careers in which they will apply social scientific knowledge to development problem solving. Students who choose the professional track may opt for an emphasis in development support communication or in development support social work. The professional track requires completion of a final project and a written comprehensive examination.

REQUIRED CORE

The following courses on development theories, policies, and strategies are required for both tracks.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>044:275</td>
<td>Development Policy and Planning in the Third World</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>150:202</td>
<td>Contemporary Issues in Development</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>150:210</td>
<td>Third World Research Methodology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Development Support Studies (DSS)

Academic track students take 32 semester hours of courses, divided as follows.

Core courses (see “Required Core”) 11 s.h.
Conceptual courses chosen from “DSS Conceptual Courses” (students may take courses in one topic area to approximate a disciplinary major or may take courses from several areas) 9 s.h.
Electives (at least 3 s.h. chosen from “DSC Professional Courses” or “DSSW Professional Courses”) 6 s.h.
150:250 Master’s Research (thesis and oral defense, up to 6 s.h.) 6 s.h.

DSS CONCEPTUAL COURSES

Environment and Development 3 s.h.
044:104 Environment and Development 3 s.h.
044:125 Environmental Impact Analysis 4 s.h.
131:148 Population, Environment, and Development 3 s.h.
International Economic Development 3 s.h.
06E:125 International Economics 3 s.h.
06E:129 Economic Growth and Development 3 s.h.
113:145 Economic Anthropology of the Third World 3 s.h.
Political Economy and Public Policy 3 s.h.
030:150 Politics of Emerging Market Economies 3 s.h.
030:350 Political Economy and Public Policy in Developing Countries 3-4 s.h.
044:197 Special Topics (ethics and development) 3 s.h.
091:286 International Organizations 3 s.h.
Problems in Social Work 3 s.h.
042:285 Travel/Study Seminar (no poverty in Mexico) arr.

Regional Development 3 s.h.
16W:121 African History since 1880 3 s.h.
030:148 The Politics of Southern Africa 3 s.h.
113:131 Latin American Economy and Society 3 s.h.
141:146 African Development 3 s.h.
Social and Educational Policy 3 s.h.
07F:104 Education in the Third World 2-3 s.h.
16W:138 History of International Health 3 s.h.
044:274 Seminar: Social Change 3 s.h.
113:151 Sociology of the Third World 3 s.h.
Spatial and Geographic Perspectives 3 s.h.
044:163 Geography of the Newly Industrializing Countries 3 s.h.
044:194 Geographic Perspectives on Development 3 s.h.
102:217 Spatial Analysis in Planning 3 s.h.
Labor and Urban/Industrial Development 3 s.h.
044:135 Urban Geography 3 s.h.
044:263 Agrarian Transitions in the Third World 3 s.h.
113:122 Artisans and Global Culture 3 s.h.
Women in Development 3 s.h.
102:146 Women and the City 3 s.h.
113:175 Gender and Development Studies 3 s.h.
131:215 Women’s Issues: A Transnational View 3 s.h.

Development Support Communication (DSC)

DSC students merge knowledge and skills from the social sciences with expertise in communication theory and practice. They acquire an analytical basis for identifying problems, designing practical development projects, and planning effective implementation strategies. This emphasis requires 32 semester hours of courses, as follows.

Core courses (see “Required Core”) 11 s.h.
Professional courses chosen from “DSC Professional Courses” (students may take courses in one topic area or from several areas) 9 s.h.
Conceptual courses (3 s.h. from “DSC Conceptual Courses” and 3 s.h. from “DSS Conceptual Courses”) 6 s.h.
150:250 Master’s Research (project, comprehensive exam, and oral defense, up to 6 s.h.) 6 s.h.

The DSC program culminates in the design of a project that demonstrates skill in identifying and analyzing problems involving communication strategies and in using media products to solve them.
<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
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</thead>
<tbody>
<tr>
<td>36D:095</td>
<td>Radio Production I</td>
<td>3</td>
</tr>
<tr>
<td>36D:096</td>
<td>Television Production I</td>
<td>3</td>
</tr>
<tr>
<td>36D:097</td>
<td>Film Production: Material of 16mm Film</td>
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</tr>
<tr>
<td>36D:098</td>
<td>Video Production: Nonfiction</td>
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<td>07W:120</td>
<td>Introduction to Instructional Design</td>
<td>3</td>
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<td>047:150</td>
<td>Internetworks in International Development</td>
<td>3</td>
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<tr>
<td>06M:151</td>
<td>International Marketing</td>
<td>3</td>
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<tr>
<td>01L:105</td>
<td>Advanced Photography</td>
<td>3</td>
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<tr>
<td>01D:249</td>
<td>Advanced Problems in Design</td>
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<td>01D:250</td>
<td>Internetworks in International Development</td>
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<tr>
<td>01D:240</td>
<td>Media Workshop</td>
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<td>Advanced Problems in Design</td>
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<td>Visual Communication</td>
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<td>019:206</td>
<td>Comparative Communication System</td>
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<td>019:241</td>
<td>Publication Design Workshop</td>
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<td>Photojournalism Workshop</td>
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<td>131:149</td>
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<td>Women’s Issues: A Transnational View</td>
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<td>042:285</td>
<td>Travel/Study Seminar</td>
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<td>042:140</td>
<td>Human Behavior in the Social Environment</td>
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<td>Social Welfare Policy and Practice</td>
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<tr>
<td>042:252</td>
<td>Family Policy: Domestic and International</td>
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<td>042:262</td>
<td>Social Policy and Integrated Practice: Domestic and International</td>
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<td>16W:138</td>
<td>History of International Health</td>
<td>3</td>
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<tr>
<td>16W:121</td>
<td>African History since 1880</td>
<td>3</td>
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<tr>
<td>044:161</td>
<td>African Development</td>
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<tr>
<td>044:163</td>
<td>Geography of the Newly Industrializing Countries</td>
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<tr>
<td>044:194</td>
<td>Geographic Perspectives on Development</td>
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<tr>
<td>044:197</td>
<td>Special Topics (ethics and development)</td>
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<td>044:263</td>
<td>Agrarian Transitions in the Third World</td>
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<td>Seminar: Social Change</td>
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<td>Development Policy and Planning in the Third World</td>
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<tr>
<td>019:230</td>
<td>Specialized Reporting and Writing: International Affairs</td>
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<td>Development Policy and Planning in the Third World</td>
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<td>019:280</td>
<td>Master’s Tutorial</td>
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**DSC CONCEPTUAL COURSES**

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<td>Applied Anthropology</td>
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<td>042:262</td>
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**DSSW PROFESSIONAL COURSES**

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<td>152:150</td>
<td>Global Health Seminar</td>
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**Associated Courses**

**AFRICAN STUDIES**

<table>
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<tr>
<td>141:146</td>
<td>African Development</td>
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**ANTHROPOLOGY**

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<tr>
<td>113:122</td>
<td>Artisans and Global Culture</td>
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</tr>
<tr>
<td>113:131</td>
<td>Latin American Economy and Society</td>
<td>3</td>
</tr>
<tr>
<td>113:136</td>
<td>Applied Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>113:145</td>
<td>Economic Anthropology of the Third World</td>
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<tr>
<td>113:151</td>
<td>Sociology of the Third World</td>
<td>3</td>
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<tr>
<td>113:175</td>
<td>Gender and Development Studies</td>
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<tr>
<td>113:275</td>
<td>Development Policy and Planning in the Third World</td>
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**COMMUNICATION STUDIES**

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<tr>
<td>36D:095</td>
<td>Radio Production I</td>
<td>3</td>
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<td>36D:096</td>
<td>Television Production I</td>
<td>3</td>
</tr>
<tr>
<td>36D:097</td>
<td>Film Production: Material of 16mm Film</td>
<td>3</td>
</tr>
<tr>
<td>36D:098</td>
<td>Video Production: Nonfiction</td>
<td>3</td>
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<tr>
<td>07F:104</td>
<td>Education in the Third World</td>
<td>3</td>
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<tr>
<td>07F:275</td>
<td>Development Policy and Planning in the Third World</td>
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<tr>
<td>07W:120</td>
<td>Introduction to Instructional Design</td>
<td>3</td>
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<tr>
<td>044:104</td>
<td>Environment and Development</td>
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<td>044:125</td>
<td>Environmental Impact Analysis</td>
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<td>044:135</td>
<td>Urban Geography</td>
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<tr>
<td>044:161</td>
<td>African Development</td>
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<td>044:163</td>
<td>Geography of the Newly Industrializing Countries</td>
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<td>044:194</td>
<td>Geographic Perspectives on Development</td>
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<td>Seminar: Social Change</td>
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</tr>
<tr>
<td>044:275</td>
<td>Development Policy and Planning in the Third World</td>
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**GLOBAL HEALTH STUDIES**

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<tr>
<td>152:150</td>
<td>Global Health Seminar</td>
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**GLOBAL STUDIES**

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<th>Course Title</th>
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<tbody>
<tr>
<td>047:150</td>
<td>Internetworks in International Development</td>
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**HISTORY**

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<tr>
<td>16W:121</td>
<td>African History since 1880</td>
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<tr>
<td>16W:138</td>
<td>History of International Health</td>
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**JOURNALISM AND MASS COMMUNICATION**

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<td>Comparative Communication Systems</td>
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**SPECIALIZED REPORTING AND WRITING**

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<td>Specialized Reporting and Writing: International Affairs</td>
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<td>Publication Design Workshop</td>
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<td>019:242</td>
<td>Photojournalism Workshop</td>
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<tr>
<td>019:255</td>
<td>Problems in International Communication</td>
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<tr>
<td>019:280</td>
<td>Master’s Tutorial</td>
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</tr>
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</table>
TRANSPORTATION STUDIES

Director: David J. Forkenbrock
Affiliated faculty: Marc P. Armstrong (Geography), M. Asghar Bhatti (Civil and Environmental Engineering), Kelly J. Clifton (Urban and Regional Planning), David I. Forkenbrock (Urban and Regional Planning/Civil and Environmental Engineering), John W. Fuller (Urban and Regional Planning/Economics), Paul F. Hanley (Urban and Regional Planning), Hosin David Lee (Civil and Environmental Engineering), John D. Lee (Industrial Engineering), Wilfrid A. Nixon (Civil and Environmental Engineering), Gerard Rushton (Geography/Health Management and Policy), Thomas Schnell (Industrial Engineering), and J. W. Stoner (Civil and Environmental Engineering/Urban and Regional Planning)

Graduate nondegree program: certificate in Transportation Studies
Web site: http://www.uiowa.edu/-ppc

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.

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.

Certificate

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, two academic units at The University of Iowa participate in an interdisciplinary transportation program. The Department of Civil and Environmental Engineering and the Graduate Program in Urban and Regional Planning offer a graduate certificate program that enables students in these academic units to obtain an additional credential along with their graduate degrees.

The Department of Geography also supports the transportation certificate program by offering courses in geographic information systems (GIS), location theory, and other related areas.

The Transportation Certificate Program is coordinated by the Public Policy Center in conjunction with the Graduate College.

Completion of the requirements for a certificate is documented on the student’s transcript. The certificate is awarded in conjunction with the established degree requirements of the individual academic units, as described in this section of the Catalog.

Students who enroll in a course of study leading to transcript certification also may wish to participate in faculty-led research in transportation, which may explore such topics as system planning, traffic operations and engineering, spatial data systems and analysis, simulation applications, and policy issues.

Certificate with Graduate Degrees in Civil and Environmental Engineering

The Department of Civil and Environmental Engineering offers degrees in transportation at both the Master of Science and Doctor of Philosophy levels. The MS, may be earned either with a thesis (a 30-semester-hour program that includes up to 6 semester hours of credit for thesis research) or without thesis (requiring a minimum of 30 semester hours of credit) or without thesis (requiring a minimum of 30 semester hours of credit). Nonthesis students usually are required to complete a research paper based on independent study and to defend the paper in an oral examination.

Students who wish to complete the MS. in a single academic year must complete 15 semester hours during both the fall and spring semesters.

The Ph.D. degree involves a minimum of 72 semester hours beyond the B.S. degree, with up to 18 semester hours earned for dissertation research. A minimum of one year of campus residency is required. For detailed information on the residency requirement, see section XII.C of “Rules and Regulations of the Graduate College,” in this section of the Catalog.

Individuals with degrees in transportation-related disciplines as well as in civil engineering are encouraged to apply to the transportation studies certificate program. Depending on the student’s background, additional course work in statistics, computer programming, simulation, mathematics, and operations research may be required. However, the credit earned in these courses may not be applicable to the degree program.

The following courses are required.

Five courses in transportation:
053:162 Design of Transportation Systems 3 s.h.
053:165 Transportation Safety 3 s.h.
053:262 Transportation Demand Analysis 3 s.h.
102:267 Transportation Policy Analysis 2 s.h.

Two general core courses:
053:111 Numerical Calculations 3 s.h.
053:113 Mathematical Methods in Engineering 3 s.h.

A typical master’s certificate program in civil and environmental engineering includes the following courses.

First Semester
053:111 Numerical Calculations 3 s.h.
053:113 Mathematical Methods in Engineering 3 s.h.
053:262 Transportation Demand Analysis 3 s.h.
102:269 Transportation Program Seminar 1 s.h.
Second Semester
053:162 Design of Transportation Systems 3 s.h.
053:163 Simulation Application to Transportation 3 s.h.
053:165 Transportation Safety 3 s.h.
Technical elective 3 s.h.

Third Semester
102:267 Transportation Policy Analysis 2 s.h.
Technical electives 6 s.h.

Technical electives are advanced courses in engineering operations research, information technology computer-aided design, urban and regional planning, business, or economics. Specific course requirements are sufficiently flexible to conform to a student’s graduation schedule and area of specialization.

Technical electives include the following:
053:133 Finite Element I 3 s.h.
053:163 Simulation Application to Transportation 3 s.h.
053:164 Winter Highway Maintenance 3 s.h.
053:267 Transportation Network Analysis 3 s.h.
102:266 Transportation and Land Use Planning 3 s.h.

Applications should be made through the Graduate College and the Department of Civil and Environmental Engineering.

Certificate with Graduate Degrees in Urban and Regional Planning

The Graduate Program in Urban and Regional Planning offers Master of Arts and Master of Science degrees with a transportation concentration. During the first year, students complete an integrated core curriculum consisting of courses in planning economics and public finance, analytic methods, planning theory, and law. Beginning in the second semester, students take courses in an area of concentration, such as transportation, where core concepts are applied to a selected specialization. The planning curriculum is intended to provide students with the capability to examine policy in transportation, devise workable options, evaluate these optional courses in action, and work toward the implementation of policy solutions.

Planning students complete a total of 50 semester hours; 20 semester hours are accounted for by the core, the area of concentration constitutes a minimum of 9 semester hours, and electives are taken to complete the remaining hours. Students who select the thesis option may register for up to 6 semester hours of thesis credit and 8 semester hours of readings. Students may apply 3 semester hours of readings to the area of concentration requirement and substitute the thesis for the portfolio.

A typical transportation major program in urban and regional planning includes the following courses.

First Semester
102:200 Analytic Methods in Planning I 3 s.h.
102:202 Land Use Planning: Law and Practice 3 s.h.
102:203 History and Theories of Planning 3 s.h.
102:205 Economics for Policy Analysis I 3 s.h.
102:208 Program Seminar in Planning Practice 1 s.h.

Second Semester
102:201 Analytic Methods in Planning II 2 s.h.
102:206 Economics for Policy Analysis II 1 s.h.
102:212 Regional and Urban Economics 2-3 s.h.
102:260 Transportation Policy and Planning 2 s.h.
Planning elective 4-5 s.h.

Third Semester
102:209 Field Problems in Planning I 1 s.h.
102:262 Transportation Demand Analysis 3 s.h.
102:265 Transportation Regulation and Finance 3 s.h.
102:267 Transportation Policy Analysis 3 s.h.
102:269 Transportation Program Seminar 1 s.h.

Fourth Semester
102:210 Field Problems in Planning II 3 s.h.

Three of these:
053:267 Transportation Network Analysis 3 s.h.
102:263 Simulation Application to Transportation 3 s.h.
102:264 Transportation Planning Process 3 s.h.
102:266 Transportation and Land Use Planning 3 s.h.
102:268 Neighborhood Transportation Planning 3 s.h.
Planning elective 3 s.h.

Students select optional transportation courses according to their individual interests. Elective courses typically include the following:
102:218 Environmental Processes and Institutions 2-3 s.h.
102:222 Development Finance 3 s.h.
102:234 Project Impact Analysis 3 s.h.
102:295 Economic Development Policy 3 s.h.

Applications should be made through the Graduate College and the Graduate Program in Urban and Regional Planning.

-URBAN AND REGIONAL PLANNING

Chair: Heather I. MacDonald
Professors: Peter S. Fisher, David J. Forkenbrock, John W. Fuller
Professor emeritus: James L. Harris
Associate professors: Heather I. MacDonald, Alan H. Peters, James W. Stoner, James A. Thurgarton
Assistant professors: Jerry A. Anthony, Paul F. Hanley
Instructor: Kelly J. Clifton
Adjunct lecturers: Douglas Boothroyd, David Osterberg, David Schon
Graduate degrees: M.A., M.S. in Urban and Regional Planning
Web site: http://www.uiowa.edu/-urp

Urban and regional planning is a dynamic and exciting field encompassing 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 transport planner, zoning administrator, environmental analyst with a natural resources agency, economic development planner, regional solid waste management coordinator, state public health planner, neighborhood planner, state legislative analyst, and transportation consultant.

The University of Iowa planning program is a two-year master’s program fully accredited by the Planning Accreditation Board. The program 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 program. Usually up to 50 full-time 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 program 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 several countries around the world.

Master’s Degrees

The planning curriculum is a two-year program that leads to a master of science or a master of arts in Urban and Regional Planning. It consists of 50 semester hours, including 20 semester hours of core courses, 9 semester hours of courses in an area of concentration, and 21 semester hours of electives. Students may
All students, including those in joint degree programs, must complete a minimum of 35 semester hours of planning courses (prefix 102). A grade of B- or higher must be earned for completion of an approved internship with a planning agency during summer or the academic year. All students, including those in joint degree programs, must complete a minimum of 35 semester hours of planning courses (prefix 102). Up to 15 hours of course work from other departments can be counted toward the planning degree. All core and area of concentration courses must be completed with a grade of B- or higher, and students must attain an overall graduate grade-point average of at least 3.00.

The 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.

**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 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. In total, the core accounts for 20 semester hours (13 in the first fall semester, 3 in the spring semester, and 4 in the second year).

Courses in the first semester are drawn primarily from traditional disciplines, particularly economics and statistics, together with an introduction to the theories and practice of planning and to land use 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. Core curriculum courses and required semester hours are noted in the typical class schedule that follows.

Students may request a waiver of selected core courses on the basis of previous course work.

**Electives and area of concentration courses**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internship</td>
<td>2</td>
</tr>
<tr>
<td>Fourth Semester</td>
<td></td>
</tr>
<tr>
<td>102:210 Field Problems in Planning II</td>
<td>3</td>
</tr>
</tbody>
</table>

**AREA OF CONCENTRATION**

Beginning in the second semester of the program, students develop an area of concentration by applying the concepts and skills developed in the core to a specific field of planning. Currently, there are four areas of concentration supported by faculty and course offerings in the planning program: transportation planning, housing and community development, economic development, and environmental planning.

Students complete at least 9 semester hours of courses in their area of concentration. Courses offered by other University departments may supplement those offered by the planning program.

Students may combine two areas of concentration. Examples of combined areas are environmental and economic development planning, and transportation and community development planning. Students also may design other areas of concentration, subject to faculty approval. For example, students can specialize in health services planning with appropriate course work in the Departments of Health Management and Policy or Occupational and Environmental Health, or in human services planning with courses in the School of Social Work.

**PORTFOLIO**

Students must complete a portfolio of papers that are approved by the final exam committee.

**Options**

**THESIS**

A thesis is not required, although students may petition to write one. Students may register for up to 6 semester hours of thesis credit. In addition, they may take up to 8 semester hours of readings to develop a thesis topic and prepare a literature review. Students may apply 3 semester hours of readings to the area of concentration requirement and substitute the thesis for the portfolio.

**INTERNSHIP**

Students are encouraged to complete an internship in a planning agency or related organization. To earn 2 semester hours 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 the summer and into the fall semester of the second year. It carries 4 semester hours of credit and substitutes for the required field problems courses, 102:209-210, and the internship.

**Joint Programs**

**LAW**

The Urban and Regional Planning Program and the College of Law cooperate in administering a program that satisfies the degree requirements leading to an M.A. in planning and a J.D. in law. The program usually requires four years to complete, a reduction of one academic year from the total requirements of the two programs taken separately. It may be completed in less time if the student chooses the accelerated law program. Separate admission to each academic unit is required.

Law is the most popular of the joint degree programs. Students in the planning and law program typically seek employment as attorneys, especially in law firms that specialize in land use or environmental law; as city managers; as city planners or planning administrators; or in advocacy organizations.

**Preventive Medicine and Environmental Health**

Students interested in environmental health may elect to pursue a joint master’s degree offered by the Urban and Regional Planning Program and the College of Public Health. This option results in an M.A. in planning and an M.S. in preventive medicine and environmental health.

The joint program requires 65 semester hours of credit, including 35 semester hours earned in urban and regional planning and 30 semester hours earned in environmental health. The program can be completed in 5 semesters. Separate admission to each academic unit is required.

Graduates of the program typically find employment in the public health field, with state health and human services departments, or as health or environmental planners.

**Health Management and Policy**

Students interested in health planning may wish to enroll in a joint master’s degree program offered by the Urban and Regional Planning Program and the department of Health Management and Policy in the College of Public Health. This three-year program leads to an M.A. in planning and an M.H.A. (Master of Health Administration). Completing the joint program takes one year less than separate completion of the two programs. Separate admission to each academic unit is required.

The health management and policy degree enables students to strengthen their credentials as health planners or expand their job options to include administrative positions in the health field as well as health planning jobs. Graduates of the joint degree program typically find employment in hospitals, state departments of health, and other private, nonprofit, or public health agencies.
Economics

Planning students who wish to strengthen their skills in economic analysis may enroll in a joint program offered by urban and regional planning and the Department of Economics. The combination of economics and applied policy analysis and planning is valuable for students who want to work in jobs such as state economic development planner, consultant, analyst with a regulatory commission, or fiscal analyst for a state legislature or revenue department.

The program usually can be completed in five semesters. Students earn an M.A. or M.S. in planning and an M.A. in economics.

Social Work

For those interested in a career in social service delivery or human services planning, a joint program is offered by urban and regional planning and the School of Social Work, leading to an M.A. in planning and an M.S.W. in social work. It is possible to complete the program in three years, although some students may require an additional semester. Separate admission to each academic unit is required. Graduates of this joint program find careers as human service planners for local planning agencies, nonprofit social service agencies, and state governments.

Transportation

The Transportation Studies Program is administered through the University’s Public Policy Center. A transportation certificate is awarded to students who satisfactorily complete a prescribed set of courses in transportation. These courses are taught in urban and regional planning, engineering, and economics. The certificate program allows planning students with a concentration in transportation to extend their training and obtain an additional credential. For more information, see “Transportation Studies” in this section of the Catalog.

Admission

Admission to the Urban and Regional Planning Program is open to students from any undergraduate major or area of concentration.

Admission is based on Graduate Record Examination (GRE) General Test scores (verbal, quantitative, and analytical), letters of recommendation, previous academic performance, and a written statement of purpose. International students also are required to submit official TOEFL scores.

Applicants should submit the application form, GRE General Test scores TOEFL score (for international students), recommendation letters, previous academic records, and transcripts early in the year for fall admission, although applications are still accepted until July 15 (April 15 for international students). Materials should be received by December 1 for spring admission. Fall admission is strongly preferred. Students applying for financial aid should submit their materials by February 1.

Financial Support

Students in the Urban and Regional Planning Program receive financial support from the program primarily in the form of teaching or research assistantships and 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.

Graduates of this joint program find careers as urban and regional planners, traffic analysts for a state legislature or revenue department, analyst with a regulatory commission, or fiscal analyst with a state legislature or revenue department.

Courses

102:101 Introduction to Planning and Policy Development 3 s.h.
Growth of cities in the United States; planning as a means of resolving social problems that arise from urbanization; introduction to techniques of planning and development of public policies in fields such as housing, transportation, community and economic development, and environmental quality.

102:123 Introduction to Environmental Policy and Planning 3 s.h.
Fundamental issues in environmental planning; past, present, and expected futures of particular ecosystems; desirability of those futures and feasibility of altering them.

102:133 Introduction to Economics of Transportation 3 s.h.
Overview of transportation markets-intensity, rural, urban; transportation modes-road, highway, air, water, pipeline, transit; issues in finance, policy, planning, management, physical distribution, and environmental, economic, and safety regulation. Same as OE6:145, 044:133

102:146 Women and the City 1,3 s.h.
Implications of changing family structure and gender roles for the urban environment and for planning and urban policy; restructuring housing and neighborhoods for women; economic development and employment; the feminization of poverty; transportation, accessibility, safety for women; women in the global economy. Same as 131:146.

102:180 The New Urbanism 3 s.h.
New urbanist concepts; how cities have incorporated new urbanist design in their planning efforts; implications for transportation, housing, quality of life.

102:185 Introduction to Urban Design and Development 3 s.h.
Ideas about the form of cities; how cities are designed and developed, forces that shape them; models of urban design.

102:200 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.

102:201 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.

102:202 Land Use Planning: Law and Practice 3 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.

102:203 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.

102:205 Economics for Policy Analysis I 1-3 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 evaluations externalities.

102:206 Economics for Policy Analysis II 1 s.h.
Analysis of the structure and growth of urban areas, with emphasis on location of industry and services. Prerequisite: 102:205 or consent of instructor.

102:208 Program Seminar in Planning Practice 1 s.h.
Planning process, roles of planners, professional ethics and standards. May be repeated.

102:209 Field Problems in Planning I 1 s.h.
Experience working on a two-semester project involving a current planning issue, usually for a client. Open only to graduate students in urban and regional planning.

102:210 Field Problems in Planning II 3 s.h.
Continuation of 102:209, which is prerequisite. Open only to graduate students in urban and regional planning.

102:213 Written and Graphic Communication skills 3 s.h.
Verbal and graphic skills in communicating information effectively; hands-on experience preparing and presenting urban planning analyses. Open only to master’s degree students in urban and regional planning.

102:214 Land Use Policy and Planning 3 s.h.
Performance zoning, site development concepts, downtown and neighborhood development and revitalization, historic preservation, growth management planning.

102:215 Applied GIS for Planners 2 s.h.
Spatial matrices, routing, network flows, partitioning and clustering, facility location models; three-dimensional GIS analysis, statistical analysis in spatial context. Consent of instructor required.

102:216 Conflict, Negotiation, and Planning 3 s.h.
Conflict within communities; planners’ responses to it; networking, negotiating, mediating, coalition building, consensus building; case studies, role playing. Prerequisite: 102:203 or consent of instructor.

102:217 Spatial Analysis in Planning 2-3 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.

102:218 Environmental Processes and Institutions 1-4 s.h.
Principles and processes of natural environmental systems, environmental consequences of human actions, institutional efforts to reduce adverse environmental effects, future trends in environmental institutions and planning.

102:219 Practicum 5 s.h.
Qualified full-time internship of at least five months with a planning-related organization. Open only to graduate students in urban and regional planning.

102:221 Poverty, Planning and Public Policy 3 s.h.
Who and where the poor are in the U.S.; consequences of poverty; competing explanations of poverty; historical survey and critique of anti-poverty policies at the local and city levels; role of urban development policies. Prerequisites: 102:206, 102:205, and 102:207, or consent of instructor.

102:222 Development Finance 1-3 s.h.
Financial markets, capital market failure, pro-forma financial statements, public participation in business financing; public infrastructure financing policy, capital budgeting techniques, case studies in capital facilities planning and rate pricing. Prerequisite: 102:205 or consent of instructor.

102:230 Land Use Administration 1 s.h.
Process of administering zoning and other land use regulations at the local government level; personnel, management, enforcement issues.
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102:234 Project Impact Analysis 3 s.h.
Analysis and evaluation of economic and fiscal impacts of public and private development policies or projects; social, environmental, and traffic impacts; techniques for analysis, evaluation, case studies, projects.

102:242 Urban Environmental Planning and Politics 3 s.h.
Understanding, improving the practice of urban environmental planning; techniques and politics of planning drinking water supply, sewage treatment, natural areas conservation.

102:246 Environmental Policy 3 s.h.
Environmental policy formation and politics; comparative international perspective on the United States' experience. Prerequisites: 102:210 and consent of instructor.

102:260 Transportation Policy and Planning 2 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.

102:262 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 053:262.

102:263 Simulation Application to Transportation 3 s.h.
Same as 053:163.

102:264 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.

102:265 Transportation Regulation and Finance 3 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 044:265.

102:266 Transportation and Land Use Planning 3 s.h.
Transportation theories and models; land use relationships; political, legal, institutional frameworks; neighborhood traffic controls; land use impacts on transit and alternative transportation modes.

102:267 Transportation Policy Analysis 2-3 s.h.
Applied methods for analyzing practical problems in transportation planning and policy; facility investment analysis, pricing public services, social equity and redistributive effects, impacts of alternative financing approaches.

102:269 Transportation Program Seminar 1 s.h.
Transportation finance, safety and economic regulation, planning processes, management, government policy issues at the federal, state, and local levels. May be repeated.

102:271 Housing Policy and Finance 3 s.h.
Federal housing programs, low income housing tax credits, housing discrimination, federal housing finance system.

102:273 Affordable Housing Development 1.3 s.h.
Community-based housing efforts in state, local, non-profit sectors; innovative models and case studies of housing development process.

102:275 Development Policy and Planning in the Third World 3 s.h.
Cross-cultural and interdisciplinary analysis of problems associated with urbanization and development Third World countries. Same as 07F:275, 094:275, 042:275, 044:275, 113:275.

102:290 Regional and Urban Economics 2-3 s.h.
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: 102:205 and 102:206, or consent of instructor.

102:295 Economic Development Policy 3 s.h.
Analysis of policies and programs at the national, regional, state, and local levels that address problems of economic growth, development, decline. Prerequisite: 102:206 or consent of instructor.

102:300 Special Topics in Planning 1-3 s.h.

102:305 Readings arr.

102:306 Readings in Housing Finance 1 s.h.

102:315 Independent Study in Planning 1-6 s.h.
Research and analysis of a special planning problem; opportunity for student to apply knowledge in area of specialization.


102:335 Internship 2 s.h.
Work in a planning or related agency or nonprofit organization. Consent of instructor required.
College of Law

Dean: N. William Hines Jr.
Associate deans: Eric G. Andersen, Arthur E. Bonfield, Linda A. McGuire
Executive librarian: Mary Ann Nelson

Clinical professors: Patricia Acton, John S. Allen, Lois K. Cox, Reta Noblet-Feld, Leonard Sandler, Barbara A. Schwartz, John Whiston
Associate professors: Barry D. Matsumoto, Todd Pettys, Hillary A. Sale, Mark Sidel
Degrees: J.D., LLM.
Web site: http://www.uiowa.edu/~lawcoll
The University of Iowa College of Law, founded in 1865, is the oldest law school in continuous operation west of the Mississippi River. More than 670 students and a full-time faculty of 50 are engaged at the college in a cooperative study of law, legal institutions, professional ethics, the role of law in public policy matters, and the intersection of law and other disciplines.

The college’s student/faculty ratio of 13-to-1 is one of the best in American legal education. Eight members of the law faculty hold Ph.D. degrees in law-related disciplines.

Through traditional Socratic classes, research seminars, closely supervised writing exercises, ambitious professional skills training programs, and clinical experiences, the college seeks to produce public-spirited leaders who will be rigorous thinkers, trusted advisers, forceful advocates, creative policy makers, and innovative scholars.

The college conducts its programs in the Boyd Law Building, a 200,000-square-foot facility that opened in 1986. Its spacious library, three courtrooms, clinic suite, building-wide audiovisual system, and extensive computer technologies are recognized as outstanding features in an educational facility specially designed for modern legal training.

The college is home to one of the nation’s premier law libraries. The Law Library has the second largest collection of legal volumes and volume equivalents among all public law schools. Its staff numbers 30 library professionals and it provides comfortable seating for 700 patrons, with 440 private study carrels. The library boasts a fully computerized information retrieval system. Westlaw and Lexis are available at numerous terminals for training and research activities, and the Online Access System for Information Sources (OASIS) provides instant information about all cataloged materials.

The college celebrates diversity. Its faculty includes six full-time professors from minority backgrounds, including African American, Asian American, and Hispanic American. In 1967 the college undertook one of the nation's first and most aggressive affirmative action programs aimed at attracting a more racially and ethnically diverse student body. Its success in this continuing effort has resulted in a minority student population that routinely makes up around 20 percent of the law college’s current student body (the state of Iowa’s minority population is around 4 percent).

The college offers a challenging curriculum that is carefully balanced between substantive courses, perspective offerings, examination of ethical values and professionalism, and skills-training, including a highly active in-house legal clinic. Iowa’s writing program—one of the strongest among law schools nationwide—is an integral part of all students’ academic experience. During both semesters of their first year, students take one small section class taught by a full-time professor who focuses individually on the development of each student’s analytical, research, writing, and advocacy skills.

The college also requires five additional writing units at the upper level, a requirement that must be fulfilled with at least two credits of faculty-supervised written work. The remaining three may be satisfied through a range of options, including writing for one of the school’s four law journals, participating in the clinical program, completing exercises in appellate advocacy, or enrolling in specific seminars or independent study projects.

The Writing Resource Center supports and builds upon classroom writing instruction and assists students with a broad range of writing tasks (see “Center” in this section of the Catalog). The center and the writing program as a whole exemplify the personalized attention and dedication to individual learning for which the college is renowned in legal circles.

The college is proud of its four student-run scholarly journals. The Iowa Law Review has served as a scholarly legal journal since 1915, analyzing developments in the law and recommending new paths for the law to follow. It frequently is ranked among the top 20 legal periodicals in the country, based on the frequency with which it is cited. The Journal of Corporation Law is the nation’s oldest student-run legal periodical specializing in corporate law. It provides the legal and academic communities with high-quality articles on corporate issues and business law. Transnational Law and Contemporary Problems, which began publication in 1991, addresses legal issues confronting the global community. It has earned an excellent reputation based on its symposia on issues such as world food policy and global environmental regulation.

A fourth journal, the Journal of Gender, Race, and Justice, hosts a symposium at the college each fall, attracting nationally renowned legal scholars and practitioners who discuss topics such as criminal justice, education, and critical race feminism. The journal publishes the papers presented at the symposium.

The college admits a limited number of students each year “to pursue studies in inter” in Transnational Law and Contemporary Problems, and the degree Master of Laws (LL.M.). The college offers two study-abroad programs and coordinates a consortium of seven American law schools that jointly operate a one-semester program in London each spring. The college also offers a month of intensive course work in a summer program at Arcachon, France.

Over the years, the college has enjoyed great success in preparing women and men to be professional and civic leaders. In this century Iowa graduates have served as U.S. senators and representatives, state governors, and presidents of the American Bar Association, of major universities, and of the country’s largest corporations. Iowa also has been a leader in preparing American law teachers. Currently three of Iowa’s five U.S. district judges and five of the Iowa Supreme Court’s nine justices are U1 College of Law graduates. The college is resolved to continue its traditional role of training future lawyers for positions of professional and community leadership in the 21st century.

**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 full time. 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 semester hours per semester. Students who believe they may be unable to attend full time should contact the dean’s office before registering for classes.

**Entrance Dates**

The college offers two starting dates to entering students: mid-May (at the beginning of the college’s summer session) or late August (at the beginning of the college’s fall semester). Approximately 180 students enroll each fall. They attend courses full time during fall and spring semesters and may attend summer school at any point during their academic careers. Fall entrants starting classes in August 2000 will expect to graduate in May 2003.

The May entering class may number up to 45. Students entering in May complete nearly a full semester of work in the first 11-week summer session. If they remain in the accelerated track, they will complete law school in two-and-a-half academic years. Students who begin in the accelerated track are not required to continue, but may switch to the regular three-year sequence of study.

The juris doctor degree requires 90 semester hours, including required and elective courses. All entering students are expected to take all courses designated as first-year courses and may not register for different courses or fewer semester hours without permission of the associate dean. No student may take more than 18 semester hours per semester or 13 semester hours in the summer session without permission of the associate dean.

**Summer Session**

The summer session consists of two periods of five and one-half weeks, during which six to eight upperclass and three to four first-year courses usually are offered. Nonaccelerated students may attend either or both periods. Accelerated students attend the entire 11-week session.

**Admission to the Iowa Bar**

A rule adopted by the Iowa Supreme Court requires all law students who intend to apply for admission to the Iowa Bar to register that intention with the court by November 1 of the year they begin law school. Details are available...
One of the distinctive benefits of legal education at The University of Iowa is the first-year small-section program, which integrates training in basic lawyer’s skills into substantive courses taught by regular, full-time faculty. The program’s purposes include careful development of each student’s skills in legal analysis, argumentation, research, and writing. In the fall semester (summer session for May entrants), the entering class is divided into sections of approximately 30 students. In the spring (fall for May entrants), each section includes approximately 20 students. The subject matter of the small-section courses varies from year to year but has included that of virtually every course in the first-year curriculum.

In the small-section course, students are given a series of challenging assignments, each with a different educational objective. Faculty members provide extensive critiques of student performance and discuss the assigned exercises both in class and in individual conferences. First-year students receive one additional semester hour for their first-semester small section and two additional semester hours for their second-semester small section. A mandatory curve is applied to the grade distribution in all first-year courses.

**Upperclass Curriculum**

In the second and third years, students are exposed to a broad array of substantive areas of the law, with focus on fact gathering, interviewing, counseling, drafting, transaction planning, negotiation, and litigation. They also concentrate course work or writing and research opportunities in particular areas of interest.

Very few common requirements exist in the second and third years. All students must take 091:210 Appellate Advocacy I in the second year, and before graduating all must take 091:232 Constitutional Law II and a course in professional responsibility.

**Writing Requirement**

All students must earn five writing credits in order to graduate. They earn one of the credits with satisfactory completion of 091:210 Appellate Advocacy I. Two of the remaining four writing credits must be earned under direct faculty supervision, in independent research and legal clinic work. The remaining two may be earned through a combination of courses and activities that carry writing credit, including seminar papers, small-section drafting courses, independent research papers, 091:406-407 Clinical Law Programs-Internship/Externship, 091:402 Moot Court Board, advanced appellate advocacy activities, and journals, including the Iowa Law Review, Journal of Corporation Law, Journal of Gender, Race, and Justice, and Transnational Law and Contemporary Problems.

**Specialization**

Students may pursue their interest in a particular subject area by selecting appropriate course work and independent research projects. For example, in the corporate business area, students may take as many as 26 semester hours of course work: 091:241-242 Corporations I and II (6 semester hours), 091:216 Business Planning (4 semester hours), 091:217 Corporate Finance (3 semester hours), 091:348/353 Securities Regulations I/II (6 semester hours), 091:243 Federal Income Tax II (3 semester hours), 091:239 Corporate Governance and Control (1 semester hour), and 091:253 Employment Discrimination (2-3 semester hours).

**Independent Research and Seminars**

Students may register for 1-3 semester hours of independent research, splitting the hours between semesters as they choose. In selecting topics for independent research or seminars, students should keep in mind that papers they write may be eligible for entry in one of several competitions. No more than 6 semester hours of independent research can be counted toward the J.D.

Most seminars may be taken for up to 5 semester hours, including writing units. The usual format is 2 semester hours of credit for the class portion (usually taken in the fall), and up to 3 semester hours for the writing portion of the seminar (usually done in the spring).

**Clinical Programs, Internships, Clerkships**

Students who have completed the equivalent of three semesters, which may include a full summer session, toward their J.D. degrees (usually in excess of 37 semester hours) are eligible to apply their theoretical knowledge to real cases under the supervision of faculty members and other attorneys through participation in the College of Law’s clinical law programs.

Some students are placed in law offices in Iowa City or the surrounding area, where they act as staff attorneys, assisting in all phases of the legal process. Typical placements include Student Legal Services, Legal Services Corporation (Iowa City and Cedar Rapids), HELP Legal Services (Davenport), the City Attorney’s Office (Iowa City), the federal public defender (Cedar Rapids), and federal judges, including the U.S. Bankruptcy Court (Cedar Rapids). A clinical semester also is available, in which students spend an entire semester in the Iowa Attorney General’s Office or the U.S. Attorney’s Office in Des Moines.

Other students participate in in-house programs, in which they may represent financially distressed farmers in bankruptcy proceedings, inmates at Iowa correctional institutions involved in habeas corpus and civil cases, clients in the AIDS project, immigrants involved in Immigration and Naturalization Service proceedings, and other clients in a wide range of civil and criminal cases.

Students may earn a total of up to 15 semester hours in the Clinical Law Programs, although those taking courses in other colleges of the University may receive no more than 20 semester hours of credit for those courses plus clinic activities.

The College of Law also is involved in programs that do not carry 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. It also helps place students in a variety of unpaid clerkships and internships that provide insight into the workings of the legal system.
Joint Law and Graduate Degree Programs

The college has developed programs with a number of University graduate programs through the Graduate College, under which students pursue degrees simultaneously in both colleges. Joint degree candidates may count up to 12 semester hours earned for the graduate degree toward the 90 required for the J.D., providing the courses are relevant to both degrees and the 12 semester hours are earned after admission to the joint degree program and after matriculation at the College of Law. Graduate departments establish their own requirements for the joint degree program, including the number of semester hours taken for the J.D. that may be counted toward the graduate degree.

Joint graduate degree programs have been initiated with the Tippie College of Business and the College of Public Health; the Schools of Journalism and Mass Communication, Library and Information Science, Music, and Social Work; the Departments of Accounting, American Studies, Anthropology, Computer Science, English, History, Health Management and Policy, Management and Organizations, Philosophy, Political Science, Religion, Sociology, Spanish and Portuguese, and Urban and Regional Planning; and the Divisions of Counseling, Rehabilitation, and Student Development, and Planning, Policy, and Leadership Studies.

Many departments have joint program advisers. For more information, consult the associate dean of the College of Law and the individual graduate departments.

LL.M. in International and Comparative Law

In keeping with its educational mission of encouraging both broad social awareness and technical professional competence, the College of Law offers a strong program of study in the rapidly expanding fields of international, comparative, and foreign law. It does so essentially for three reasons. First, virtually any lawyer in this era of accelerating global interdependence may be confronted by problems that require knowledge and understanding of international law and foreign legal systems. Second, as professionals and community leaders, lawyers often are called upon to influence, directly or indirectly, the theory and conduct of U.S. foreign policy. And third, by affording unique insight into the nature of law and legal process, the study of international and comparative law helps establish theoretical foundations vital to superior lawyering skills.

American and international students with a J.D. are eligible to work toward the Master of Laws (LL.M.) in International and Comparative Law. Candidates from the United States must have earned a baccalaureate degree from an approved college and must have graduated with high rank from a law school that is a member of the Association of American Law Schools or that is approved by the American Bar Association. Foreign applicants must have graduated with high rank from a law school or law faculty that maintains equivalent standards. Foreign applicants who hold degrees from institutions other than English-language universities must score at least 570 on the paper-based version of the Test of English as a Foreign Language (TOEFL).

LL.M. candidates are encouraged to use the college’s resources to shape an individualized program of study. Each student works with a faculty adviser to coordinate course selection. University of Iowa law students who seek the LL.M. must complete 114 semester hours over four years (including semester hours for the J.D. degree); 24 of the 114 must be in international and comparative law, and 4 of the 24 must be taken after successful completion of the minimum requirements for the preliminary J.D. degree.

Curricular Programs

As many as 6 of the 90 semester hours required for the J.D. may be earned through participation in the college’s rich cocurricular program offerings.

Client Counseling

In the client counseling program, students interview and counsel clients and witnesses. They gain experience in recognizing and resolving legal, nonlegal, and ethical issues arising in the context of those activities. Client Counseling 1 (091:410), offered to 42 upper-class students, consists of three sections. The first provides a theoretical basis and an introduction to the skills necessary for good interviewing and counseling; the second offers an opportunity to practice these skills in a supportive setting. In the third segment, students participate in simulated experiences to conduct two client interviews, a deposition, and a final counseling session, in which they advise their clients of legal alternatives.

The intraschool client counseling competition is held in the spring to determine the two-person team that will represent The University of Iowa College of Law in the regional client counseling competition.

Moot Court

The appellate advocacy program familiarizes students with writing appellate briefs, acquaints them with citation form, develops research skills, and strengthens persuasive ability in oral argument at the appellate level. Students in 091:210 Appellate Advocacy I (a second-year requirement) and 091:211 Appellate Advocacy II (an elective) receive the case record and testimony from a lower court trial. They identify and research the issues, write an appellate brief, and argue the case before a panel of four judges.

The Van Oosterhout Memorial Moot Court Competition, a competitive version of Appellate Advocacy II, involves students who have demonstrated superior ability in writing and arguing their Appellate Advocacy I problem. The competition culminates with the final round argued before a panel of judges. The appellate advocacy program is administered by the Moot Court Board, which consists of 20 student editors and a council of six executive members.

Trial Advocacy

Trial Advocacy (091:370) is a student-run, faculty-supervised program in which students develop and refine skills to prepare and try civil and criminal cases. 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 co-counsel before a visiting judge and a jury of laypersons.

The Stephenson Competition, a competitive version of the full trials completing the trial advocacy course, was added to the program in 1984. The 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 week-long 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 American Bar Association national mock trial competition.

In recent years, a second competitive trial team has been added. Eight teams participate in a competition sponsored by the Association of Trial Lawyers of America, focusing on working with expert witnesses.

Journals

IOWA LAW REVIEW

The Iowa Law Review is a nationally respected publication. Its articles, written by students and professors, present a wide variety of perspectives and analyses of recent developments in law. Students who meet the writing and secondary hour requirements or who are selected to write for the Contemporary Studies Project are eligible for a position on the Review editorial board, one of the highest honors that can be accorded a law student. They receive additional writing and academic credits and a monetary stipend.

TRANSCONTINENTAL LAW AND CONTEMPORARY PROBLEMS

Transnational Law and Contemporary Problems is produced twice a year by Iowa law students. Each issue of this international law journal presents a symposium addressing a contemporary issue of international concern; recent issues have treated such diverse topics as regional trade agreements, global warming, and international arms control. Contributors include experts from around the globe in a variety of disciplines, including law, economics,
anthropology, sociology, and ecology. The journal also publishes articles written by Iowa law students and sponsors an internationally advertised student writing contest each year.

Law students who have completed at least two semesters may earn up to 2 semester hours of credit by writing for Transnational Law and Contemporary Problems. 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 and a monetary stipend.

**JOURNAL OF CORPORATION LAW**

The *Journal of Corporation Law* is a student-operated periodical that publishes articles relevant to modern business enterprise. The journal’s scope includes antitrust, labor law, securities, taxation, employment discrimination, insurance, products liability, and regulated industries, as well as traditional corporate topics. Selected articles submitted from practitioners and academicians are published in each of four annual issues. Several student articles also are published in each issue.

All students who have completed two semesters of class work are eligible to write for the journal. Those students who meet the writing and secondary hour requirements are eligible for selection to the journal’s editorial board. Students who serve on the editorial board receive additional academic and writing credit and a monetary stipend.

**JOURNAL OF GENDER, RACE, AND JUSTICE**

The *Journal of Gender, Race, and Justice*, the newest law journal at the college, pushes at the boundaries of traditional legal scholarship and theory in its focus on social justice issues. Each fall the journal hosts a live symposium, bringing nationally renowned legal scholars and practitioners to the college to discuss topics such as criminal justice, sports, gender, and identity; and education. The journal publishes the papers presented at the symposium. Each issue also includes articles written by Iowa law students.

All students completing two semesters are eligible to write for the journal. Students who meet the writing and secondary hour requirements are eligible for a position on the editorial board.

**Study Abroad**

A consortium of seven American law schools, coordinated through The University of Iowa College of Law, offers an annual study-abroad program in which students attend a spring semester at Florida State University’s London study center. There they study American and English law with faculty from the American schools and the University of London. Students participating in the program register for 660:824 London Law Consortium.

The College of Law also offers up to 6 semester hours of credit for intensive course work at Arcachon, France, in conjunction with the University of Bordeaux. Courses are offered for four weeks in May and June and are taught in English by professors from Iowa and Bordeaux. Application deadline is March 1. Students participating in the program register for 660:823 Program in Comparative Law in Bordeaux, France.

The International Law Society and the law college’s Career Services Office provide information on other study-abroad programs.

**Academic Honors**

**Graduation with Distinction**

Students who entered the College of Law in August 1998 or later may receive their J.D. degrees with honors, in recognition of superior scholarship, as follows. (Averages are figured on final grade-point average.)

- With highest distinction-cumulative grade-point average of 85 or higher
- With high distinction-top 12.5 percent of the graduating class
- With distinction-top 37.5 percent of the graduating class

**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 senior class. Initiates are selected by the faculty after graduation.

**Prizes and Awards**

Each year, in conjunction with graduation, the faculty recognizes outstanding contributions by third-year students.

The Michelle R. Bennett Client Representation Award recognizes outstanding service in the clinical law programs.

The Donald P. Lay Faculty Recognition Award is presented to the student who has made an especially distinctive contribution to the College of Law as an educational and community enterprise.

The Faculty Scholarship Award is presented to the student who has made an especially distinctive contribution to the development of written legal scholarship.

Hancher-Falmkine Medallions are awarded each year by the University to outstanding graduates; honorees are chosen from nominations made by University departments and colleges.

The Philip G. Hubbard Human Rights Award is awarded 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 Antonia D.J. Miller Award recognizes outstanding contributions by a student to the advancement of human rights in the law school community.

The Iowa Academy of Trial Lawyers Award is based on academic record, general contribution to the life of the law school, and special achievement in trial.

The International Academy of Trial Lawyers Award is presented to the student who has distinguished him- or herself, particularly in appellate advocacy skills.

The Iowa State Bar Association Prize recognizes scholarly achievement and general contribution to the life of the college.

The John F. Murray Prize recognizes outstanding scholarly achievement.

The National Association of Women Lawyers Award is made to an outstanding third-year law student in consultation with the Organization for Women Law Students and Staff.

The Robert S. Hunt Legal History Award is presented to a student who has made an outstanding contribution in the area of legal history.

The Erich D. Mathias Award for International Social Justice is presented to a student who has demonstrated a commitment to international social, economic, and cultural justice.

The Iowa College of Law Appellate Advocacy Award is presented to a student with outstanding achievement in appellate advocacy.

The Judge John F. Dillon Prize is awarded in recognition of outstanding scholarship in legal history or jurisprudence.

Various publishers of law-related materials, including West Publishing Company, Bureau of National-Affairs, Inc., and The Lawyers’ Cooperative Publishing Company, award certificates, books, or periodicals to students each year in recognition of academic achievement.

**Special Resources**

**Iowa Law Library**

The centerpiece of the Boyd Law Building is The University of Iowa Law Library, which occupies space on four floors and is one of the major repositories of legal materials in the United States.

Iowa’s collection currently is ranked seventh in the number of volumes and volume equivalents and second in the number of titles among all U.S. law school libraries. It contains 934,000 volumes and volume equivalents and covers a full range of Anglo-American, foreign, international, and comparative law. The library contains in-depth collections on law of the United States and of every state and territory. Its collection of early English legal source materials and its holdings of state documents are extensive. Since 1968 the library has been a selective Federal Documents Depository. An open-stack policy makes the collection accessible to all patrons, and a full staff of professional librarians serves students, faculty members, and other users.

The WESTLAW/Dialogue and LEXIS/NEXIS computerized information retrieval systems are...
available for training and research activities. WilsonDisk, a computerized CD-ROM and on-line data retrieval system, and other indexes are available on workstations open to the public.

The entire collection of the law library is on the OASIS (Online Access System for Information Sources) database, including the collection of U.S. government documents. The OASIS system also features an automated circulation system for checking materials out of the library.

The library uses both OCLC, the Online Computer Library Center, and RLG (Research Libraries Group) for on-line cataloging, catalog card production, and interlibrary loans. OCLC’s database contains the collections of most of the public and state libraries throughout the United States. RLG’s database includes the major research collections in the country.

Law students have access to a Local Area Network (LAN) that includes 41 pentium personal computers through which students can access e-mail, West law, Lexis, word processing, and the Internet. The library also provides HP laser printers and photocopy machines with Copicard mechanisms for public use.

**Writing Resource Center**

The Writing Resource Center is dedicated to the College of Law’s aim of strengthening law students’ command of the writing skills that are central to the study and practice of law. The first writing center in the country established specifically for a law school community, the Writing Resource Center serves as an extension of the classroom and supplements the college’s small-section writing program.

The writing center’s staff helps law students with a broad range of writing, including class assignments, seminar papers, law journal articles, and symposium presentations. Assistance also is provided on preparing resume, application letters, and writing samples.

In addition to helping students with general writing skills, the center’s staff trains editors in editing skills, offers strategies for overcoming writer’s block and adapting material for various audiences, and provides guidance on a variety of grammatical, stylistic, and rhetorical matters.

The Writing Resource Center is staffed by writers, including second- and third-year law students, lawyers, and a director whose Ph.D. degree is in the area of teaching writing.

**Academic Achievement Program**

The Academic Achievement Program (AAP) helps students achieve their potential as they go from successful undergraduate careers to the unique challenges of law study. Although AAP focuses on helping first-year students, its programs are open to all.

AAP presents a variety of programs, including a first-semester lecture series for new students, with sessions on time management for law study; developing effective study groups; outlining, reviewing, and taking essay exams; and answering multiple choice examinations. A pre-exam series, “Pacing for a Marathon,” focuses on time management during the pre-exam and exam period, special exam skills workshops, and stress management.

Spring semester programming builds on skill acquisition for special challenges of the second semester, including reviewing exams and planning ahead, taking on complex writing projects, time management, organizing study materials, and exam preparation.

In addition to offering group programs, AAP provides individual help with study skills. When personal issues affect a student’s concentration or studying, the program can provide some direct help and can refer students to University and community support resources.

**Career Services Office**

The College of Law Career Services Office provides career planning and job search assistance to law students. Each year the office sponsors a comprehensive series of programs on career options and job search skills. It also maintains a library of resources and provides individual advising by professional staff. Job search assistance also is available to alumni.

The special rigor that characterizes Iowa’s distinctive brand of legal education attracts a wide variety and growing number of recruiters to campus each year. During a typical academic year, more than 200 employers send representatives to Iowa City to conduct job interviews, and many more firms use the college’s Career Services Office to search for prospective employees through written inquiries and off-campus interviews.

Iowa graduates traditionally have had excellent success in finding employment; usually, more than 95 percent are employed within a few months of graduation. The career services staff is happy to talk with prospective students regarding the college’s programs and the success of its graduates.

**Financing a Legal Education**

The College of Law administers its substantial financial aid program to advance the goals of its selective admissions policy. Grants, scholarships, work-study funds, and loans are awarded on the basis of need or merit to provide access to legal education for the talented and diverse students admitted to the college. A number of part-time employment opportunities also are available to upper-level students.

Inquiries regarding financial aid should be directed either to the University’s Office of Student Financial Aid or to the College of Law’s Office of Admissions and Financial Aid.

All information is subject to change without notice.

**Application for Financial Aid**

Eligibility for financial aid is based on need established by completion of the Free Application for Federal Student Aid (FAFSA) and the required supporting documents. The FAFSA may be completed on the World Wide Web at www.fafsa.ed.gov after January 1 each year and should be completed as soon as possible thereafter, since some financial aid is subject to the availability of funds.

Although financial aid 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 are informed of their eligibility for financial aid on the award notification letter. Students may reapply for aid every year.

Applicants are urged to investigate other sources of aid. Public libraries, private and civic organizations, and the World Wide Web are excellent sources for information about financial aid resources.

**Scholarships and Fellowships**

**Merit Scholarships and Fellowships**

All students admitted to the College of Law are considered for Merit Scholarships and Merit Fellowships based on their academic achievement. A separate application is not required. Recipients are notified by letter. Potential aid renewal for the second and third year for some Merit Scholarships and Fellowships requires continuing class rank in the top 25 percent. Awards may range from $500 to full resident tuition with a research assistantship component in upper-level years.

**Need-Based Scholarships**

All admitted students who file a Free Application for Federal Student Aid (FAFSA) and required supporting documents are considered automatically for need-based scholarships. Recipients are notified by award letter. Awards may range from $300 to full resident tuition.

**Iowa Law School Foundation Scholarships**

The University of Iowa Law School Foundation Scholarships include scholarships based on need, or merit, or a combination of need and merit. These scholarships are available to a limited number of students who meet the criteria established by the scholarship donors. All admitted students are considered for the merit-based scholarships, and all admitted students who file the FAFSA and required supporting documents are considered automatically for the need-based scholarships. A separate application is not required. Recipients are notified by letter. Awards may range from $200 to full resident tuition.
Law Opportunity Fellowship

The College of Law is committed to affording opportunity for a legal career to persons historically underrepresented in the legal profession. The Law Opportunity Fellowship Program was established by the University to provide access to law school for students from groups and backgrounds historically underrepresented within the academic community. Among criteria considered in awarding the fellowships are educationally and/or socioeconomically disadvantaged backgrounds, existing educational debt load, leadership potential, academic merit, and importance of the fellowship award to the student’s financial ability to attend law school.

The Law Opportunity Fellowship provides full resident tuition for three years and the opportunity to hold a research assistant position for the second and third years. All admitted students who file the FAFSA and required supporting documents are considered for the Law Opportunity Fellowship. A separate application is not required. Recipients are notified by letter.

Employment

The College of Law discourages student employment during the first year of law school, due to the intensive course schedule. In no event may a full-time student work more than 20 hours per week.

Research Assistant Positions

Research assistant positions are available with many faculty members for second- and third-year students. Students classified as nonresidents who hold quarter-time research assistantships (10 hours per week) automatically qualify for resident tuition status during the semester(s) in which they serve as research assistants.

UI Part-Time Employment

The University offers a variety of part-time employment positions for students. Students do not need to apply for financial aid in order to work in these positions. Information about part-time employment is available from the University’s Office of Student Financial Aid.

College Work-Study

Federal College Work-Study is a need-based employment opportunity for a limited number of students in their second and/or third year at the law college. College Work-Study may reduce the student’s William D. Ford Federal Direct Loan eligibility. Students must demonstrate financial eligibility for work-study through the FAFSA and its required documents.

Community Employment

A limited number of jobs are available throughout the local legal community, and there are many opportunities for nonlegal employment in the area. Students should contact employers directly.

loans

All admitted students who file the FAFSA and required supporting documents are considered for the University of Iowa law Foundation Loan, the Federal Perkins Loan, and the William D. Ford Federal Direct Loans.

Iowa Law School Foundation loan, Federal Perkins loan

These are low-interest loans 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 loans

The William D. Ford Federal Direct Subsidized Loan is a low-interest loan based on financial need. Interest does not accrue and payments are not required until the student is no longer enrolled at least half-time in school. Interest on the Federal Direct Unsubsidized Ford Loan accrues while the student is in school; however, both principal and interest payments may be deferred while the student is in school.

The interest rate for the Federal Direct Subsidized Ford Loan is variable and is adjusted annually.

law Access and Partnership loans

The Law Access Loan, the Iowa Partnership Law Loan, and the Law Achiever Loan are private loan programs for students whose cost of attending law school has not been met through other sources of financial aid. A separate application is required, and a credit check is a required part of the process to determine eligibility.

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.

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 and preparing students to serve as leaders in their professional and civic communities. Preference is given to applicants who are residents of Iowa (approximately 70 percent of each entering class is drawn from Iowa residents).

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 enter law school. With the assistance of faculty advisers, each student should develop an undergraduate program that explores and develops that student’s particular intellectual interests.

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 greater understanding of human institutions and values; 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.

Selection of Applicants

The college uses multiple criteria in evaluating applicants for admission. Approximately 50 percent of the entering class is admitted under a “presumptive admit” process, in which the faculty admissions committee sets a score for resident applicants and another score for nonresident applicants. Each applicant is evaluated against the appropriate score on the basis of his or her cumulative grade-point average (weighted 47 percent) and LSAT score (weighted 53 percent). Before admission offers are made, each applicant’s file is reviewed.

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, to develop skills as a leader, to enrich the learning environment of his or her fellow students, and to 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 roughly half of 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 in their personal statement, through letters of recommendation, or by other documentation included with their application.

**Entrance Dates**

Applicants may apply for either May or August admission. Applications for both entrance dates are accepted beginning September 1 of the year prior to admission, with an application deadline of March 1 in the year of admission. Applications submitted after March 1 are considered only if they include a cover letter explaining why the deadline was missed.

Each application must include a fee of $30 (U.S.) or $50 (foreign) unless the applicant’s baccalaureate degree was or will be conferred by The University of Iowa. This fee is nonrefundable. Students from disadvantaged backgrounds who cannot afford the fee should apply for a waiver.

The May and August entrance dates have separate applicant pools. Admission to the summer program does not guarantee admission to the fall program, and vice versa.

For information about obtaining application materials, visit the college’s web site or contact the Admissions Office, c/o College of Law, The University of Iowa, Iowa City, IA 52242-1113.

**Application Process**

**LSDAS Report and Transcripts**

The University of Iowa College of Law participates in the Law School Data Assembly Service (LSDAS) and requires its prospective students to register for this service through the Law School Admission Council. The council’s mission is to serve law schools and prospective law students alike. The Law School Data Assembly Service Registration and Information Book, a free, annual publication, contains the information prospective law applicants need to complete their application for admission to the law school.

It takes approximately three weeks from the time the College of Law requests the LSDAS report until it arrives. Applicants should keep this in mind as they prepare to submit all of their application materials by the March 1 deadline.

Applicants whose fall course work does not appear on the LSDAS report should send an official transcript of that course work to the University’s Office of Admissions. Applicants who are already University of Iowa students or are not registered for fall classes are exempt.

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.

Applicants must ask their undergraduate institution to forward their class rank or class grade distribution to the College of Law. 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. This is in addition to the LSDAS report.

**letters of Recommendation**

Although the law school does not require letters of recommendation, it strongly suggests that applicants submit them. Letters attesting to academic achievement and potential for success in law school can be important in the admission decision.

The College of Law participates in Law Services’ letter of recommendation service. Applicants should have letters of recommendation sent 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 during the fall preceding the fall semester or summer session for which they are applying.

The February test date is the last one that the admissions committee can consider for applicants requesting admission the following summer or fall. However, that test date may put the applicant at a competitive disadvantage, since it takes at least four weeks for the college to receive test results. Scores more than five years old are not accepted.

Foreign students whose native language is not English must take the Test of English as a Foreign Language (TOEFL).

**Deferrals**

Admission is for the year of application; deferrals are granted only in extraordinary circumstances.

**Deposit upon Acceptance**

Applicants accepted before March 15 must make a nonrefundable deposit of $250 (U.S.) by April 1; those accepted after April 1 must make the deposit within two weeks of being notified of acceptance. For those who enroll, the deposit is credited toward tuition and fees. Scholarship, fellowship, and loan recipients are required to pay the $250 deposit. Applicants who fail to make the deposit by the specified time forfeit their place in the entering class.

**Courses Taken before Admission to the College of law**

Except for transfer students from other law schools, students may not receive credit toward residence requirements for courses taken prior to admission to the College of Law. They also may not receive credit toward the 90-semester-hour requirement for the J.D. by taking non-law graduate courses before enrolling in the College of Law. This applies to all law students, including those enrolled in joint degree programs with the Graduate College.

With approval of the dean and in consultation with the faculty admissions committee, students may count toward the J.D. up to 6 semester hours that they earned in law courses taken at another law school while they were graduate students or postbaccalaureate special students (L-9) and before they were admitted to the College of Law. In deciding whether to award credit for such course work, the dean and the admissions committee consider the nature of the course, the grade received (minimum of 70), how much time has gone by since the course was taken, and the law school at which the course was taken.

**Courses Taken outside the College of Law**

Students who take courses outside the College of Law must first obtain permission from the
Courses Taken at Another Law School after Enrollment at Iowa

With the permission of the dean, enrolled students may receive credit for courses taken and passed at other ABA-accredited law schools, up to a maximum of 30 semester hours. Grades of C and higher are reflected on the student’s transcript as credit for the designated semester hours. Grades of D are reflected as a 63 on the Iowa transcript.

Externships

Students may be able to arrange externships for academic credit with certain nonprofit organizations and government agencies. Most externships are established for the summer, for a maximum of 6 semester hours of credit. Externships also may be arranged for the fall or spring semester. All students who participate in externships must write a research paper. Externship credit counts toward the maximum allowable clinic credit.

Students have arranged recent externships with the U.S. Department of Justice, the Small Business Administration, a U.S. district court judge in Illinois, a bankruptcy judge in California, and the Asian Law Alliance in San Francisco.

Grading Policy

A numerical grade is assigned to each student for each course and is recorded in the University’s permanent record.

The highest grade awarded at the College of Law is 92, the lowest 55. No academic credit is given for grades below 60.00 or for grades of “fail.”

Numerical grades can be translated into letter grades as follows.

<table>
<thead>
<tr>
<th>Numerical Grade</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>92-85</td>
<td>A</td>
</tr>
<tr>
<td>84-80</td>
<td>B+</td>
</tr>
<tr>
<td>79-75</td>
<td>B</td>
</tr>
<tr>
<td>74-70</td>
<td>B-</td>
</tr>
<tr>
<td>69-65</td>
<td>C</td>
</tr>
<tr>
<td>64-60</td>
<td>D</td>
</tr>
<tr>
<td>59-55</td>
<td>F</td>
</tr>
</tbody>
</table>

Professors may disenroll students for cause or reduce grades for inappropriate academic conduct, for example, plagiarism. Such measures are subject to appropriate due process.

With the dean’s permission, a student may retake a course in which he or she has received a failing grade. The second grade is recorded either as “pass” (a grade of 65 or higher) or “fail” and is not used in computing the student’s cumulative grade-point average. Rather, the first grade received for the course remains on the transcript and is used in computing the grade-point average.

If the course being retaken is sectioned, the dean designates the section to which the student will be assigned.

The faculty does not apply a mandatory grade curve beyond the first year, but grades in second- and third-year courses are expected to approximate the curve used in large-section first-year courses.

Pass/Fail Grades

Credit for certain courses is offered only on a pass/fail 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 59 and 55).

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:

- “R” means registered. It 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.
- “W” means withdrawn. It carries no course or residency credit and is not used in computing the cumulative grade-point average.
- “I” means incomplete. It carries no course credit toward a degree until it is changed, nor is it used in computing the cumulative grade-point average. A grade 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 the student’s standing in the course is satisfactory.

Students remove an incomplete by completing the unfinished work during their next period of enrollment.

Class Ranking

Students in the top 10 percent in each class may be informed of their exact rank; grade-point averages at the 87.5 percentile and 62.5 percentile are posted. Students are ranked following the fall semester, spring semester, and summer session each year. Final class standing is determined each August and is available in September. For purposes of ranking underclass students, the same system is used, based on the expected graduation date.

Examination Policy

One examination is given in each course, with few exceptions. Before taking an exam, each student is assigned an identification number for that exam. Instructors report final exam grades by each student’s number to the dean’s office, where the grades are kept on file for two years. After the grades are recorded, the dean’s office gives the names corresponding to the students’ numbers to the instructor, who then assigns final grades for the course. This permits the instructor to award credit for class participation and ensures anonymity in exam grading.

Students and the registrar’s office receive only the final grades.

Students who have more than one examination scheduled for the same day, two exams within 24 hours, 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 usually reschedule exams on the Saturday morning 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.

Extra Exam Time for Students Whose Native Language is Not English

Students who are at a substantial disadvantage in taking a timed exam because their native language is not English may receive additional time to complete the exam, commensurate with the extent of their disadvantage.

Students seeking additional time must make a written request in the dean’s office by the deadline announced for the semester in which the exam is to be taken. An undergraduate degree from an English-speaking college or university is considered prima facie evidence that the student is not qualified for extra time.

Accommodations for Students with Disabilities

A physical or mental disability may put a law student at a substantial disadvantage in taking an examination. For purposes of the college’s policy on exam accommodations for students with disabilities, a student with a disability is one who has a physical or mental impairment that substantially limits one or more of the student’s major life activities. Commensurate
with the nature and extent of the disadvantage, the College of Law makes reasonable accommodations in exam conditions for students, while respecting faculty members’ discretion to decide how to test the substantive knowledge and analytical skills essential to the course or the legal profession and preserving the fairness of exams for students without disabilities. Students who believe they may be entitled to exam accommodations are encouraged to consult with the associate dean as soon as possible after entering law school, even if they have not yet decided whether to request an exam accommodation.

In addition to exam accommodations, the college is committed to providing reasonable accommodations for students with disabilities for all instructional, cocurricular, and extracurricular activities it sponsors.

**Drop/Add Policy**

Students may add or drop a regularly scheduled course or seminar during the first two weeks it meets. Starting with the first day of class, students must have consent of the instructor to add or drop a course.

A student may not drop a course once the final examination in the course has been distributed to the student. Individual instructors may set a policy of not permitting drops past a certain time limit, except in hardship cases; they are encouraged to distribute written notices of their policies during the first week of class.

A student who, after two weeks, drops an elective course for reasons not related to hardship may not re-enroll in the course in a later semester without the instructor’s permission.

Students who wish to drop Appellate Advocacy II without showing cause may do so prior to the distribution of the problem and the finalization of participants in their rounds. After the problem has been distributed, only the faculty adviser may authorize a drop and then only upon show of cause.

**Withdrawal**

First-year students who withdraw during the academic year or who fail to re-enroll for the second semester are not eligible to return to school. Instead, they must compete with other applicants for the year in which they wish to return. The reason for the withdrawal and the quality of work done prior to withdrawal or failure to re-enroll are considered when students reapply.

Unless granted a leave of absence by the dean, second- and third-year students who fail to enroll for any semester during the academic year must obtain permission from the admissions committee if they wish to re-enroll. (Students are considered first-year if they have fewer than 27 semester hours of credit at the time of withdrawal or failure to enroll.)

The associate dean may grant a second- or third-year student a leave of absence for up to one year, if the student shows good cause.

Students who withdraw from the College of Law after paying tuition are entitled to a pro rata refund.

**Audit**

Students may audit a class with the instructor’s permission, provided the class is not filled within the preregistration period.

**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’s Student Handbook.

**Academic Advising**

Associate dean for academic affairs: The associate dean for academic affairs works with the dean on academic programs and problems of the law school.

Associate dean for student affairs: 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 also advises law students pursuing joint degrees in University of Iowa graduate programs and serves as the liaison with those programs.

Associate director of admissions: The associate director of admissions provides counseling regarding financial aid for current students and the needs and concerns of minority students.

Faculty advisers: Each faculty member advises five or six students on course selection, academic matters, and when necessary, other concerns.

Small section instructors: Small section instructors advise students enrolled in their small sections during students’ first year of study.

Ombudsperson: Each year one or two tenured faculty members are selected by the Iowa Student Bar Association to serve as law school ombudspersons. Students who have a problem or grievance should seek an ombudsperson’s help. All complaints are handled in strict confidence.

Registrar: The law school registrar is in charge of student record keeping and should be students’ first recourse for information about course enrollment, scheduling, residence requirements, joint program status, student certification for various loan agencies and state bar applications, and progress toward graduation.

Student recruitment and academic support committee: The committee oversees coordination and periodic review of how the college provides academic and curricular counseling to law students. The committee reviews and coordinates the college’s efforts to provide information, offer services and programs, and make referrals regarding its students’ mental and emotional health. The committee has oversight for assignment of faculty academic advisers to law students and for matters of faculty/student collegiality.

**Facilities**

The Willard L. Boyd Law Building exemplifies Iowa’s continuing commitment to legal education and the legal profession. The 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.

Classrooms in the Boyd Law Building provide an atmosphere conducive to the college’s goals. They are air conditioned, carpeted, and properly lit. Small seminar rooms, the clinic suite, and special-purpose learning areas are distributed throughout the building to permit students and faculty members to work together in close professional interaction. The largest classroom seats only 100 people. The student lounge, faculty lounge, and faculty offices are located on the same floor, encouraging interaction between students and faculty members.

**Student Services**

**Bookstore**

The College of Law has its own bookstore, which carries all assigned texts and materials for law classes. It also stocks a variety of professionally prepared outlines, hornbooks, and other study aids, as well as a limited selection of school supplies, including pens, notebook paper, computer disks, and so forth.

Photocopied handouts and teaching materials assigned by course instructors are available through the bookstore.

Students may charge costs for books, class materials, and supplies directly to their University account.

**Computers and Word Processing**

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 pentium computers attached to a local area network for use by its students. Students also are encouraged to purchase computers, if possible, and to use them in connection with their law school work.

The law college is working on a project to provide network and Internet access from all student library carrels. To participate, law
students supply their own laptop computers (which must meet required specifications) and make a deposit on a network card and cable. The college’s computers are loaded with WordPerfect and Microsoft Word software and the college provides training for and access to the two major on-line 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 modems 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 South Lindquist Center. 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 “Computing” on the University’s home page.

Copy Services
Copy machines are available on each floor of the law library. Students with a copy card can use any of the machines. Cards are available for purchase from the library’s circulation desk. For better quality and/or high-volume copying, there is a University-operated copy service on the first floor of the law building. Prices are comparable with those at commercial concerns, and students may charge copying to their University bills.

Student Activities and Organizations
AALSA (Asian American Law Students Association): instills greater awareness among law students of the needs of the Asian American community and encourages greater commitment toward meeting those needs.
ALIANZA (Latino/Hispanic Society): promotes viable changes within existing legal Institutions in order to develop constructive legal and community programs, produce competent and effective Latino/Latina attorneys, and utilize available resources.
BLSA (Black Law School Association): focuses on the relationship of the black attorney to the American legal structure and fosters an attitude of professional competence.
Christian Law Students: provides support, encouragement, and fellowship for law students who share a faith in Jesus Christ.

Equal Justice Foundation: supports public interest law concerns, with emphasis on promoting equal access to and adequate representation in the courts and other forums for citizens and citizens’ groups.
Environmental Law Society: provides an educational forum and legal research and counseling services for attorneys, organizations, and citizens who have questions concerning environmental law.
The Federalist Society: espouses a conservative and libertarian viewpoint in promoting the defense and preservation of individual liberties against encroachment by the state.
Intellectual Property Law Society: provides a forum for faculty and student discussion of contemporary issues relating to intellectual property law and its practice.
Iowa Society of International Law and Affairs: increases student and faculty awareness of international law and affairs.
ISBA (Iowa Student Bar Association): includes all law college students as members; through an elected executive board, acts as the student government at the law school and provides organization and funding for a variety of collegewide activities and programs.
NALSA (Native American Law Students Association): promotes the needs and goals of American Indian law students.
National Lawyers Guild: advocates use of the law to promote progressive social change.
The Outlaws: provides a common forum for gay, lesbian, bisexual, and transgendered students and attorneys; offers a climate of mutual support, protection, and professional advancement.
OWLSS (Organization for Women Law Students and Staff): addresses the changing needs and problems of women in the legal profession; develops, recommends, and implements new programs with emphasis on the needs of women at the College of Law.
Phi Alpha Delta: promotes unity among all members of the legal profession; bars restrictions on membership by reason of race, sex, color, creed, national origin, and grade-point average; the nation’s oldest and largest law fraternity.
Phi Delta Phi: provides an opportunity to balance legal education with social interaction among students, faculty, and members of the legal profession; professional legal fraternity.
Pro Bono Society: provides opportunities for political candidates and elected officials to speak at the law school and interact with students and staff.

Special Activities
Parents and Partners Day
Each fall, the parents, spouses, and friends of all students are invited to the campus for activities sponsored by the Iowa Student Bar Association. Past activities have included a simulated class, a brunch, a musical, and a tour of the college. The weekend is a good opportunity for families and friends to see what the life of a law student is really like.

Supreme Court Day
The College of Law hosts the Iowa Supreme Court on The University of Iowa campus each fall. Third-year students present oral arguments in a moot case to the court; in the evening, faculty members host receptions at their homes for the justices, attorneys, and students, providing an opportunity for informal visits with members of the court.

Iowa Advocate
The law school’s alumni magazine, Iowa Advocate, is published twice a year. It features articles and news about the college and its alumni, faculty, and students.

Iowa Law School Foundation
During the three years that students spend at the College of Law, many of the classes, programs, and projects in which they participate are partially or totally supported by private gifts from law alumni and friends. The Iowa Law School Foundation was created by the 1952 graduating class to promote close relations between the college and its alumni and to solicit gifts for scholarships and other projects that benefit the college.

Foundation funding benefits student scholarships, loans, and research assistantships; guest speakers; student orientation activities; the clinical law programs; Moot Court, Trial Advocacy, and Client Counseling programs; the student-edited law journals, and Iowa Advocate. In order to support these programs and activities, the Law School Foundation actively solicits contributions from the college’s more than 6,000 alumni.

Legal Aid
Students in need of legal assistance may consider turning to the University’s Student Legal Services. The Legal Services Corporation
of Iowa also provides civil representation to indigent clients.

Courses
Some courses are offered irregularly. For information on current course offerings, consult the College of Law registrar.

First Year
091:102 Introduction to Legal Reasoning 1-2 s.h.
Forms, interpretative methods of legal reasoning; problems of legitimacy, basic concepts, intellectual skills necessary for understanding the law

091:104 Civil Procedure 4-6 s.h.
Subject matter jurisdiction, jurisdiction over the person, venue, pleadings, motion practice, summary judgment, simple joinder of parties and claims, pretrial discovery procedures, the trial, claim and issue preclusion.

091:116 Constitutional Law I 3-5 s.h.
Constitutional allocation of governmental powers; role of the courts in constitutional cases; powers of and relationships among branches of national government, relationship between state and national governments.

091:120 Contracts and Sales Transactions I 3-4 s.h.
Purpose, scope, development of protection accorded to contractual agreements; judicially developed rules; statutes governing formation, performance, interpretation of contracts; remedies for breach of contract.

091:121 Contracts and Sales Transactions II 3.5 s.h.
Continuation of 091:120; emphasis on U.C.C. Article 2.

091:124 Criminal Law 3.4 s.h.
Basic understanding of the substantive criminal law; underlying premises of and justifications for criminal law; general doctrines that dictate the minimum elements necessary to impose criminal law; constitutional requirements of culpable conduct, blameworthy mental state; rape, homicide, causation, attempt, conspiracy, accomplice liability; various defenses to criminality, such as self-defense, duress, intoxication, insanity, diminished capacity.

091:132 Property I 3-4 s.h.
Concept of private property as one of the legal system’s basic foundations; historical development of Anglo-American property law in conjunction with changing currents of economic, social, political thought; emphasis on understanding decision making by courts in the common-law tradition.

091:136 Property II 3.5 s.h.
Continuation of 091:132; limitations imposed on use of property by private agreement, common-law doctrine, public regulations; relationships between law and other disciplines, particularly economics; constitutional protection of private property rights from governmental influence.

091:136 Torts 3.4 s.h.
Historical development of tort liability theories, including fault-based liability for commission of negligent, reckless, or intentional acts as well as strict liability; emphasis on civil responsibility for harms to personal and property interests; roles of judges, juries, legislatures in development of tort law.

Second and Third Year
091:000 Cooperative Education Internship 0 s.h.
Arranged by the Office of Cooperative Education and filled on a competitive basis by eligible students. Faculty approval, satisfactory completion of eligibility requirements required.

091:125 Criminal Procedure: Investigation 3 s.h.
Criminal law; focus on Fourth, Fifth, and Sixth Amendment regulation of police investigative practices, including searches and seizures, interrogation, undercover surveillance by informants, identification lineups, exclusionary rules.

091:193 Human Rights in the World Community: Problems of Law and Policy 3 s.h.
Human rights, their moral and legal basis, their promotion and protection through governments and international organizations; comparative and international analysis of equality and nondiscrimination; junior, senior, or graduate standing required. Same as GSO.177. 047:193.

091:195 Introduction to Public International Law 3 s.h.
Principles of law that determine rights and duties of nations in their dealings with international problems, controversies. Same as GSO.173, 047:195.

091:196 Abused/Neglected and Dependent Children 1-3 s.h.
Laws relating to children not receiving proper parental care and protection as defined by case law; history of child abuse, neglect, and dependency laws; jurisdiction of juvenile and family courts over these children; abuse, neglect, and dependency proceeding termination of parental rights.

091:198 Advanced Legal Research 2 s.h.
American legal resources, in-depth; nonlegal information sources; introduction to research resources of other legal jurisdictions, international law.

091:200 Agricultural Law 2-3 s.h.
How laws affect and are affected by agriculture; land and production credit including agricultural leases and security interests in farm products; anti-corporate farming laws; federal and state regulation of production, distribution, and marketing of crops and livestock; agricultural cooperatives; livestock feeding facilities; crop and livestock production contracts; soil conservation programs; legal mechanisms promoting preservation of farmland.

091:201 Antitrust: Legal and Economic Analysis 3 s.h.
Survey and economic analysis of American antitrust laws; focus on law of monopolization, cartels, mergers, predatory pricing. Same as 081E:171.

091:202 Advanced Civil Procedure 3 s.h.
Complex civil lawsuits, especially multiple-party litigation; discovery; intervention, mandator joinder, interpleader, class actions, appellate jurisdiction, alternatives to litigation.

091:203 Income Taxation of Estates and Trusts 1-3 s.h.

091:204 Administrative Law 3 s.h.
Formal and informal procedures, processes, functions of state and federal administrative agencies; legislative, executive, and judicial control of their actions.

091:205 Admiralty Law 1-3 s.h.
Admiralty jurisdiction; admiralty law of creditor’s rights and personal injuries; laws pertaining to collisions and the law of salvage.

091:206 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.

091:207 Arbitration-Labor 2-3 s.h.
Development of arbitration with emphasis on legal and institutional aspects; rationale and purpose in arbitration’s relation to grievance handling.

091:208 Antitrust Law 3 s.h.
Law, history, economics of federal regulation of competitive behavior, primarily under the Sherman and Clayton Acts; multilateral cooperation, monopolies, mergers, resale price maintenance, customer and territorial restraints, related issues.

091:210 Appellate Advocacy I 0-4 s.h.
Experiential based on assigned fictitious case; writing an appellate brief asserting the client’s position, and arguing the case before a panel of students, faculty, community attorneys.

091:211 Appellate Advocacy II 1 s.h.
Continuation of 091:210: increased complexity; for second- and third-year students who want more experience in appellate advocacy.

091:212 National Moot Court Competition 1 s.h.
Participation by third-year students as law school’s representation in the Regional Moot Court Competition (fall semester), and in judging intramural Moot Court Competitions (spring semester). Open only to four finalists in Van Oosterhout Competitive version of 091:211.

091:213 Jessup International Moot Court Competition 1 s.h.
Participation by second- and third-year students in intramural regional- and national-level moot court competition in international law; intensive criticism in appellate brief writing and oral argument. Prerequisite: 091:210.

091:214 Bankruptcy Reorganizations 2-3 s.h.
Means of rehabilitating financial affairs of businesses and individuals available in accordance with Bankruptcy Code Chapters 11, 12, and 13. Prerequisite: 091:244.

091:216 Business Planning 3-4 s.h.
Problems involving common business transactions in the context of business planning and counseling; emphasis on problems of closely held corporations. Prerequisites: 091:241 and 091:272.

091:217 Corporate Finance 1.3 s.h.
Applications of modern financial theory to modern corporate law topics including use of valuation techniques, portfolio theory, diversification strategies, financial statement analysis. Prerequisite: 091:241.

091:218 Advanced Topics in International Law 3 s.h.
Economic sanctions as foreign policy tools; sanctions as used by international organizations such as the United Nations and by individual nations; limits to use of sanctions under international law; human rights limits to use of sanctions. Prerequisite: 091:195 or consent of instructor.

091:221 English Legal Systems 1 s.h.
Offered in London Law Consortium.

091:222 Commercial Transactions 3-4 s.h.
Commercial and consumer transactions involving negotiable instruments and personal property security interests; emphasis on relevant provisions of the Uniform Commercial Code and of the Bankruptcy Code and consumer protection legislation.

091:223 Comparative Corporation Law 3 s.h.
Summer law program offered in Arachon, France.

091:224 Comparative Law 2.3 s.h.
Comparative study of the world’s main legal systems: emphasis on origins, development, characteristic feature; of civil law tradition, which includes most modern legal systems. Same as 144:142.

091:225 Comparative Constitutional Law: Russia and Newly Independent States 1-3 s.h.
Major institutes of comparative constitutional law in Russia, the former Soviet republics, and eastern European countries, in historiographic context: constitutional reforms in the 1990s; comparative analysis of new constitutions; systems of government; constitutional judicial courts and tribunals, their main decisions; further development of constitutional and political systems.

091:226 The Federal Regulation of Banking 3 s.h.
Existing and ideal role of regulation in facilitating economic growth and ensuring sound banking practices; major federal laws addressing market entry/expiration, bank and holding company structure, deposit insurance.

091:227 Comparative Constitutional Law 2.3 s.h.
Comparative constitutional law decision making and substantive results; under different constitutional systems of common law nations; Canada, the United Kingdom, the United States as primary examples and sources of law.

091:228 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 jurisdiction-selecting rules, recognition of other states’ judgments; current evolution in theoretical approaches to these problems.

091:230 Community Property 1 s.h.
Basic concepts of community property, their role in family law and estate planning; how knowledge of community property law is important for practitioners in common-law states, especially in work with clients who previously lived in community-property states; focus on California, Texas, Wisconsin.

091:232 Constitutional Law II 3, 5 s.h.
Limits on governmental power imposed by the national constitution for protection of individuals; due process and equal protection; freedom of expression and association; religious freedom and the guarantee against establishment of religion.

091:233 Civil Commitment 1 s.h.
Laws and general theory of civil commitment of mentally disordered individuals; justifications for depriving individuals of their liberty under the police power doctrine because they are dangerous to others, and under the parents patriae justification because they are a danger to themselves; Iowa substance abuse civil commitment law.

091:234 Corporate Crimes 3 s.h.
How corporations and their officers, directors, employees, and agents can violate criminal law; liability, 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.
091:237 Comparative Criminal Law Issues: United States and United Kingdom 1.3 s.h.
Right to counsel and self-incrimination in Britain and America; historical origins, recent development, and practical application of these rights; effects of capacity and age on the exercise of these rights; the prosecution’s obligation of disclosure and discovery; confessions, admissibility of evidence.

091:239 Corporate Governance and Control 1-3 s.h.
Principal issues in creation of appropriate governance and control systems for large publicly-held corporations. Recommended: 091:241.

091:241 Corporations I 3-4 s.h.
Structure, characteristics of both publicly and closely held corporations; distribution of powers among management, directors, shareholders; fiduciary duties that limit those powers; may include basic principles of agency, partnership, and limited partnership law.

091:242 Corporations II 2-3 s.h.
Continuation of 091:241; emphasis on shareholders’ derivative actions, appraisal remedies, insider trading. Prerequisite: 091:241.

091:243 Federal Income Tax II 3-4 s.h.
Income tax treatment of corporations, partnerships, and limited liability companies, with focus on closely held businesses and their owners. Prerequisite: 091:272. Corequisite: 091:241.

091:244 Debtor Creditor Law 3 s.h.
Relationship between debtor and creditor, and rights of priority among creditors; mechanics of judgments, execution, levy, sale redemption, attachment, garnishment, and exemptions; bankruptcy, primarily Chapter 7 liquidations.

091:245 Domestic Abuse Law 3 s.h.
Cultural context of domestic violence; treatment of domestic violence in divorce, child protection, and juvenile law.

091:246 Democracy and the Rule of Law 3 s.h.
Theoretical and practical aspects of the relationship between democracy and the rule of law, problems of designing political and legal systems to foster a democracy; readings from basic political philosophy, comparative politics, jurisprudence, comparative study of legal systems.

091:247 Enforcing the Securities Laws 3 s.h.
Litigation and criminal causes of action under the Securities Act and the Securities Exchange Act; focus on enforcement mechanisms of the securities laws, including reasons for enforcement, efficacy of the current enforcement mechanisms.

091:248 Race, Law, and Culture 3 s.h.
Aspects of race as they affect judicial decision making and society. Same as 091:444, 129:156.

091:249 Election Law 3 s.h.
Major areas of law governing elections and political participation in the United States; constitutional right to political participation, doctrine of one person one vote, race discrimination in voting rights, role of political parties, law of campaign finance; how laws structure and are molded by political activity.

091:250 Employment Relations Law 3 s.h.
Rights of employers, employees in unorganized workplaces; legal issues that arise between employers and employees in nonunionized settings.

091:251 Employee Benefits 3 s.h.
The basic act and its detailed implementing regulations: types of qualified plans, plan funding mechanisms, participation standards, permissible discrimination in benefits and contributions, vesting requirements, tax deductions to employees, taxation of distribution to employees, fiduciary concepts, IRAs, and plans for self-employed individuals. Prerequisite: 091:241.

091:252 Gender and Constitutional History 3 s.h.
How considerations of gender have shaped the development of constitutional law and argument, from the American Revolution to present. Same as 164:175.

091:253 Employment Discrimination 2-5 s.h.
Legal and practical issues surrounding self-incrimination in employment on the basis of race, sex, national origin; focus on Title VII of the Civil Rights Act of 1964; procedural and remedial problems, substantive issues.

091:254 Education Law 3 s.h.
Federal and state authorities to govern public and private schools; rights of parents, teachers, students; powers of legislators, judges, educators; interaction of law and education policy. Corequisite: 091:232.

091:255 Environmental Law 3 s.h.
Role of the legal system in addressing problems of environmental protection, with special emphasis on air, water, hazardous waste pollution.

091:258 Arts and Entertainment Law 1-2 s.h.
The entertainment industry, including production, distribution, retail sectors of its five branches: music, theater, movies, television, print publishing.

091:259 Government Contracts 3 s.h.
Legal structure under which the federal government places contracts and through which it attempts to advance public policy goals; differences and similarities between the government’s process of specialized litigation forums and the common law of contracts and UCC Article 2 law; efficacy of litigation forums and policy goals.

091:260 Foreign Relations Law 2 s.h.
Treaty power, executive agreements, war power, roles of Congress and U.S. courts in developing and interpreting international law, other separation-of-powers issues generated by the intersection of international and constitutional law.

091:261 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, organ transplantation)

091:262 Hard Bargains: Law, Sex, and Politics 3 s.h.
History and philosophy of legal regulation of sexuality in America, focus on male/female sexuality, in part a problem in the politics between people of stable physical inequality; same-sex sexuality.

091:263 Disability, Law, and Society 3 s.h.
Policy issues, and case law examined in legal, social and historical contexts; the role of families in supporting full participation in society by children and other individuals with disabilities.

091:264 Foundations of Anglo-American Law 4 s.h.
History of English law and study of legal materials; major developments in civil and criminal law from Henry II to Sir William Blackstone; case law examined in the broader societal context; criminal law, land law (and family law linked to transmission of real property), law of contract. Same as 14E:314.

091:265 Evidence 3 s.h.
Roles of evidence developed in common-law courts and under statutes; judicial notice; examination of witnesses; privilege and competence; relevance; hearsay; burden of proof and presumptions; rules of judge.

091:266 European Union Law 3 s.h.
With the ratification of the Maastricht Treaty, a new conception of European integration exists. Full extent of this new state of integration.

091:267 Legal Externship 3 s.h.
Experience in legal organizations, government agencies, unaided; usually summer.

091:268 Family Law 3 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 should treat those problems as a matter of sound policy.

091:270 Federal Criminal Law 2-3 s.h.
Federal criminal law enforcement, the scope of federal criminal laws, and limits on federal criminal authority examined in the context specific federal crimes, such as RICO, mail fraud, drug defense enforcement, criminal civil rights statutes.

091:271 The First Amendment 3 s.h.

091:272 Federal Income Tax I 3-4 s.h.
Operation, policies, principles of federal income tax, including gross income, deductions, property dispositions, tax accounting, income shifting.

091:273 Copyrights 3 s.h.
Federal law of copyrights, primarily the Copyright Act of 1976; emphasis on copyright protections affecting new technologies, such as videotape and computer hardware and software, electronic data transfer, cable television rebroadcast.

091:274 Federal Courts: Constitutional Litigation and the Dual Court System 3 s.h.
Dual court and dual law systems of the United States; emphasis on constitutional tort litigation (actions against governmental officials for violations of the U.S. Constitution); supremacy of federal law, preemption, federal incorporation of state law, federal and state court jurisdiction over cases arising under federal law, judicial federalism (including various abstention doctrines), the 11th Amendment; constitutional tort litigation, including the scope of the plaintiff’s rights in constitutional tort actions; immunities that may be invoked by a defendant; range of legal and equitable remedies potentially available to a successful plaintiff.

091:275 Structure and Jurisdiction of the Federal Judiciary 3 s.h.
History and structure of the federal court system, relationship of federal and state jurisdiction over federal matters, power of Congress to alter structure and jurisdiction of the federal courts; sources of jurisdiction for litigation of private disputes in federal courts, special problems posed in federal court litigation; federal question, diversity, and admiralty jurisdiction; removal of cases from state to federal courts; venue and service issues in federal courts; choice of law in federal litigation; federal appellate jurisdiction.

091:276 Private International Law 3 s.h.
Banking and securities transactions; major areas of international regulation and policy, such as capital adequacy, clearance, and settlement.

091:277 Genetics and the Law 3 s.h.
Legal issues raised by the new genetic revolution; genetic privacy, uses and abuses of genetic testing, prenatal diagnosis, mandatory screening, genetic discrimination as a matter of sound policy.

091:278 Federal Tax Practice and Procedures 3 s.h.
Research techniques, ethics and regulations. Prerequisite: 091:272.

091:279 International Tax 3 s.h.
U.S. taxation of American citizens and foreigners engaged in international activities; U.S. jurisdiction to tax, tax treaties, allocations of income, transfer pricing, foreign tax credits; procedural mechanisms for resolving international tax issues (e.g., advance pricing agreements and competent authority negotiations); relevant law, its complexity, policies that underlie it; frequent issues. Prerequisite: 091:272.

091:280 Immigration 1-3 s.h.
Role of immigration. immigrants immigration law in American culture; history of U.S. immigration policy, with emphasis on role of race and ethnicity in immigration laws, practices, or ideas about immigration, including attitudes toward immigrants (such as nativism during Progressive Era), role of women and family life in households, tensions between immigrant and other laborers in the workplace; source, limits of federal power over immigration; immigration quotas and preferences; ground for exclusion and deportation; citizenship.

091:281 Judicue Law 2-3 s.h.
Manifestations of Judicial biblical heritage as icons in America’s legal culture.

091:282 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, INCO TERMS, 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.

091:283 Copyrights 3 s.h.
Federal law of copyrights, primarily the Copyright Act of 1976; emphasis on copyright protections affecting new technologies, such as videotape and computer hardware and software, electronic data transfer, cable television rebroadcast.

091:284 Insurance 3.4 s.h.
Legal principles and doctrines applicable to insurance marketing agreements, determining the persons and interests protected by insurance coverages, risks transferred, when risks will be at variance with insurance policy provisions, claims process, governmental regulations of the insurance business.
091:285 International Commercial Mediation, Arbitration, and Litigation 3 s.h.
Principles of settling international commercial disputes; law and lawyering skills involved in counseling clients, selecting legal strategies, drafting dispute settlement clauses in contracts, negotiating clauses and disputes, and mediating, arbitrating, and litigating disputes involving parties from different countries; role playing, simulation exercises.

091:286 International Organizations 3 s.h.
International organizations and their role in multilateral dealings among States in the world community; emphasis on the United Nations and related agencies as forums for dispute resolution and the development of international legislations.

091:287 International Trade Law Basic Norms and Regulations 3 s.h.
Government regulation of transnational economic relations, with focus on international regulation of trade in goods and services under U.S. law, the General Agreement on Tariffs and Trade (GATT), and the World Trade Organization (WTO); regional trade organizations; tariff and nontariff barriers, subsidies and countervailing duties, safeguard procedures, dispute settlement under WTO rules.

091:288 Jurisprudence 2-3 s.h.
Selected legal philosophies, with emphasis on legal positivism and natural law, nature of jurisprudence, relationship between law and morality, authority, normativity, institutional nature of law, political obligation. Same as 144:143.

091:289 International Currency arr.
Anatomy of a currency crisis in a globalized economy; the Minsky crisis of 1994-95; issues ranging from what economic sovereigns means in an increasingly global economy; role of race and ethnicity in international finance.

091:290 Juvenile Justice 3 s.h.
Problems of defining delinquent behavior; various causal theories; measurement and extent of delinquency; juvenile court system as a method of delinquency control; failure of the juvenile court system to achieve its aims; alternative methods of delinquency control.

091:291 International Environmental Law 3 s.h.
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), stratospheric ozone (ozone layer depletion), intergalactic (hazardous waste disposal, toxic pollutants, deforestation, biosphere (drifted fishing, endangered elephants, loss of tropical rainforests).

091:292, Labor Law 3 s.h.
Federal law and its enforcement by judicial, administrative, and arbitral tribunals relating to unionized employees and private firms; rights of employees to organize and engage in concerted activities, and collective bargaining.

091:293 Law in American History I 3 s.h.
American legal and social problems from around 1880 to the 1950s; interdisciplinary study. Same as 16A:111.

091:294 Law in American History II 3 s.h.
American legal and social problems from around 1880 to the 1950s; interdisciplinary study. Same as 16A:111.

091:295 Law and Economics 2-3 s.h.
Law examined through analytic tools of microeconomics; impact of legal rules on resource allocation, risk bearing, distribution of economic welfare, introduction to the field. Consent of instructor required. Same as EOE:172.

091:296 Labor Law 3 s.h.
Overview of insider trading law; familiarization with the federal insider trading law; investigation, prosecution, and enforcement of violations; impact of fraud laws on new corporate entities, the pass-through method of taxation, sales of real estate, foreign direct investment, and cross-border transactions.

091:297 Law and Accounting 2.3 s.h.
Accounting as the language of business; familiarization with the vocabulary of accounting, knowledge and skill development in using accounting information as an analytical tool.

091:300 Land Use Control 2-3 s.h.
Zoning, comprehensive planning, provision of services, subdivision development ordinances, and their role in construction of local communities; mechanics of various procedural devices, including changing zoning restrictions through variances, rezonings, contract and conditional zoning?, initiative and referendum process, agreements by cities and developers pursuant to these processes; coordination of control efforts; theory and doctrinal investigations contrasted with actual problems, results.

091:301 Law, Politics, and Social Inequality 3 s.h.
Relationship between law and society, especially between law and economic/social stratification and between and the law and the polity. Same as 034:246.

091:304 Law and Economics of Health Care Organization and Finance 2-3 s.h.
Managed care, licensing, legal relationships, business structures; financial regulation and economic aspects of the health care system, including Medicare, Medicaid, fraud and abuse, Stark provisions, anti-trust, issues of health care reform; private health care financing, including economic and legal oversight.

091:305 Law and Psychiatry 2-3 s.h.
Current medical concepts of mental disease and disorder; application of these concepts to legal problems such as commitments, civil and criminal, the right to treatment, confidentiality, “dangerousness,” the use of psychiatric testimony in criminal proceedings.

091:306 The Law of Electronic Media 2 s.h.
Legal and public policy issues in the operation and regulation of broadcasting, cable, and new technologies. Junior or senior standing required.

091:308 Professional Responsibility 1-3 s.h.
Public and private professional responsibility of lawyers; organization of the profession; its economics, ethics, and sociology.

091:309 Law, Literature, and the Humanities 3 s.h.
The problems of power, freedom, authority; virtue and justice; human nature and the will to knowledge; rhetoric and responsibility.

091:310 Law and Development in Emerging Economies 2-3 s.h.
Overview of structures and laws that govern Indian tribal organizations, and related agencies as forums for dispute resolution and the development of international legislations.

091:311 European Economic Community 2-3 s.h.
Summer law program in Aix-en-Provence, France.

091:315 Mediation: Theory and Practice 1-3 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.

091:317 Mediation Advocacy arr.
The mediation process, role of the mediator; varied approaches to negotiation of disputes; role of mediation to break impasses and achieve settlement; preparing clients for mediation, effective advocacy in mediation.

091:319 Native American Law I 3 s.h.
Specialized body of law allocating power and authority in Indian country; sovereignty arrangements, jurisdiction, federal Indian policy, tribal self-government. Consent of instructor required. Same as 149:170.

091:321 Alternative Dispute Resolution Methods 1-3 s.h.
Theory and practice of nonadversarial dispute resolution; introductory survey.

091:322 Natural Resource Law 2-3 s.h.
Evolution of patterns of law in response to resource scarcity and social demands.

091:324 Patent Law 2-3 s.h.
Protection of ideas under the patent and copyright laws and the common law of trade secrets; common-law and statutory protection of trademarks and trade names.

091:326 Property Law 3 s.h.
Negligence, warranty, strict liability tort theories for personal injury, property damage, economic loss caused by defective products; focus on the expansion of liability of manufacturers, sellers, others.

091:330 Post-Communist Law of Russia and Eastern Europe 3 s.h.
Developments since 1989 in the legal system of the Russian Federation; other post-communist legal systems: main legal issues in converting a society from state socialism to competitive democracy and free markets, introduction to the current Russian legal system, overview of how communist legal systems are similar to or different from the Russian model.

091:332 Real Estate Transfer and Finance 3 s.h.
Modern real estate transactions, including problems of real estate brokers, land-sale contracts, mortgages, insurance, conveying practices, title examinations, financing techniques.

091:334 Native American Law II 2-3 s.h.
Federal legal doctrines surrounding Indian ownership and exploitation of resources; Indian real property holdings, Indian land and other resource claims; native cultural artifacts; hunting, fishing, and other food gathering rights; water rights; economic development. Consent of instructor required. Same as 129:141.

091:335 Race, Racism, and American Law arr.
Aspects of race in public facilities, voting, housing, schooling, employment, marriage, administration of justice gender, sports law. Junior, senior, or graduate standing required. Same as 129:141.

091:340 Remedies 3 s.h.
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, reformation, reformation; law of restitution, with emphasis on restitutionary remedies (quasi-contract, constructive trust, equitable liens).

091:342 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.

091:343 Risk Technology and the Public 2 s.h.
Same as 033:155.

091:348 Securities Regulations I 3 s.h.
Regulation of the sale of securities to the public under the Securities Act of 1933 and under State Blue Sky laws; when registration is required, what sales are exempt from registration; remedies available to purchasers for failure to register or for fraud in sale of securities. Prerequisite: 091:241.

091:349 Tribal Government and Law 1 s.h.
Overview of structures and laws that govern Indian tribal governments in Indian country; tribal constitutions and legislative process, role of tribal traditions and customs, tribal courts, sources of and limitations on tribal law.

091:351 Taxation of Partnerships and Limited-Liability Companies 1-3 s.h.
Examines tax treatment of partnerships and limited-liability companies, including choice of entity, formation of partnerships and limited-liability companies, contributions of property to these entities, the pass-through method of taxation, sales of partnership and limited-liability company interests, the retirement or death of a partner or member.

091:352 Title Examination and Selected Real Estate Transactions 2 s.h.
Abstract examination, and preparation of resulting title opinion; drafting and interpretation of legal description of real property, subdivision of real property, negotiation and drafting of basic contractual and transfer documents in typical real estate transactions.

091:353 Securities Regulations II 3 s.h.
Regulation under the Securities Exchange Act of 1934 of companies whose securities are publicly traded; emphasis on proxy regulation, tender offers, related implied causes of action under the act. Prerequisite: 091:241.

091:354 State and Local Government Law 1.3 s.h.
Allocation of decision-making authority in our society; principles and policies that underlie legal doctrines and the relationship of those principles and policies.

091:358 Theories of Law and Forms of Argument 3 s.h.
Diverse theories and philosophies of law, including legal formalism of Lonstein, liberal legalism, legal process school, law and economics. Legal positivist-analytic tradition, critical legal theory, including critical legal studies and feminist legal theory; natural law, natural rights, enlightenment liberalism, rhetoric and the social construction of reality, relevant contemporary literary theory.

091:359 Tax Policy 1 s.h.
Current tax policy debates: Should income be used as the tax base? How should tax laws account for family life? What can be done about the marriage penalty? How does the Internal Revenue Code’s complexity affect taxpayer compliance, fairness? Does the tax code discriminate by sex, race, and/or class?

091:360 Taxation of Gratuities Transfers 2.3 s.h.
Federal estate, gift, and generation-skipping taxes; and estate and gift tax planning. Prerequisites: 091:272 and 091:378.
091:362 Takeovers, Mergers, and Acquisitions 3 s.h. Corporate acquisition, emphasis on hostile tender offers; corporate law, securities law, tax law pertaining to acquisitions in general; special problems in hostile tender offers. Prerequisite: 091:241.

091:369 Trademark and Unfair Competition Law 1-3 s.h. Acquisition and retention of trademark rights, registration, infringement, remedies; application of section 43 (a) of the Lanham Act to protect creative as well as commercial products.

091:370 Trial Advocacy 2 s.h. Basic skills of trial advocacy, aspects of trial technique; student participation in a full trial. Prerequisite: 091:265.

091:371 Trial Advocacy Board 1-2 s.h. 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: 091:265 and 091:370.

091:372 Stephenson Trial Advocacy Competition 1-3 s.h. Presentation of at least two full trials by teams of two students; finals represent the College of Law at a regional and national trial advocacy competition. Held in January. Requirements: 091:370 and 091:265.

091:373 Stephenson Trial Advocacy Team arr. Participation in National Student Trial Competition, sponsored by the National Association of Trial Lawyers of America. Prerequisites: 091:265 and 091:370.

091:378 Trusts and Estates 1.4 s.h. Transmittal of wealth within the family; policy of donated freedom; with focus on property law, including testamentary 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 skipping transfer taxes, their effect on wealth transfer.

091:380 Will Drafting 2 s.h. Basic concepts of estate planning, will drafting; estate and gift taxation; state laws, postmortem planning techniques, drafting techniques; experience drafting documents for hypothetical clients. Prerequisite: 091:378.

091:381 Workers Compensation 2-3 s.h. Principles of workers' compensation law nationwide, with emphasis on Iowa statutory and case law; policy underpinnings, coverage formulas, benefit calculation, third-party suits, administrative procedure, medical issues.


091:401 Student Journal Editor-Law Review arr. Experience on the journal's 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.

091:402 Moot Court Board 1-3 s.h. Experience as member of the Moot Court Board administering the Appellate Advocacy Program, researching appellate cases used in the program, writing appellate arguments. Membership based on performance in 091:210-211, which are prerequisites.

091:403 Chicago Moot Court Team 1 s.h. Student participation as College of law representatives in Chicago Moot Court Competition. Fall of third year.

091:405 Mediation Clinic arr. History, philosophy of the juvenile court; delinquency jurisdiction, procedures, and dispositional alternatives, with emphasis on role of juvenile probation in delinquency cases; theory of restorative justice; basic principles and practice of victim/offender mediation: student skill development in mediation, including preparation of victim and offender mediation session, and follow-up; participation in cases under faculty supervision. Prerequisite: 091:315.

091:406 Clinical Law Program-Internship arr. Experience working directly with faculty members on cases in in-house program; full participation in interviewing, fact investigation, negotiation, courtroom proceedings.

091:407 Clinical Law Program-Externship arr. Experience representing clients through legal assistance offices in eastern Iowa; under supervision of faculty members and staff attorneys.

091:408 Tribal Judicial Clerkship 6 s.h. Experience conducting legal research, writing, other assignments on-court-related, in various tribal appellate and trial courts, including the Winnebago Supreme Court and Cheyenne River Sioux Tribal Court of Appeals. Others: Computer proficiency in word processing, electronic mail, on-line legal research, and familiarity with other communication technologies required. Prerequisite: 091:319.

091:410 Client Counseling 1 Foundation for recognizing and resolving legal, nonlegal, ethical issues in the legal interview; interviewing and counseling skills developed through practice sessions, lectures, observation.

091:412 Client Counseling Board arr. Coordination of client counseling program and intraschool Client Counseling Competition under supervision of faculty adviser. Prerequisite: 091:410.

091:413 Client Counseling Competition 1 s.h. Student-operated scholarly publication that examines subjects of current importance to businesses and the bar; experience editing articles and writing commentaries on suitable topics.

091:416 Student Journal Editor-Journal of Corporate Law arr. Experience on the journal's 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.

091:420 Transnational Law and Contemporary Problems Journal arr. Experience researching, writing, and editing in areas of international and comparative law. Open only to second- and third-year law students.

091:421 Student Journal Editor-TCCL Journal arr. Experience researching, writing, and editing in issues in international and comparative law. Open only to second- and third-year law students.

091:425 Journal of Gender, Race, and Justice arr. Academic year experience writing two journal pieces, including a recent development and a note or a comment, and performing office duties; for second- or third-year law students.

091:426 Student Journal Editor-Gender, Race, and Justice arr. Experience on the journal's editorial staff; managing production, overseeing business operations, and publication, selecting and editing articles for publication, supervising student research and writing. Eligibility based on previous writing for the journal.

091:450 Corporate Law Practicum arr. One-semester externship with Justice Holland of the Delaware Supreme Court.


091:504 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.

091:603 Capital Punishment Seminar 1 s.h. Death penalty in America.

091:604 Advanced Topics in Intellectual Property arr. Complex intellectual property issues in a focused topic area (e.g., international and comparative intellectual property, administrative patent practice). Experience in intellectual property law required.

091:605 Advanced Property Concepts arr. Possession, notice, and ownership as defining elements of property; property over time-changing perceptions of property as a political instrument; present state of property law; and property in the next century.

091:606 Advanced Problems in International Business and Economic Relations arr. Legal aspects of contemporary problems in transnational business and economic relations. Prerequisite: 091:282 or 091:287.

091:607 Ethical and Economic Realities of Legal Practice arr. Study of lawyering in diverse work settings; lawyers' power over clients; practical judgment and intellectual prowess-their importance to professional effectiveness; ethics rules and practitioners' perceptions of economic realities; professional styles, self-understanding of small-town and big-city lawyers; the influx of women and its effect on adversarialism versus the "female ethic of care."

091:608 Civil Commitment Seminar arr. The law of civil commitment; general common law, the law of Iowa; doctrine relevant to seeing as counsel in involuntary hospitalization; theoretical justifications for depriving individuals of their liberty. Year-long course.


091:613 Contemporary Problems in Law and Journalism 3 s.h. Same as 092:275.

091:614 Corporate Ethics Seminar arr. Ethical issues in representing businesses and corporations, in securities and general corporate law; lawyers' moral and legal responsibility for client conduct.

091:616 Constitutional Interpretation arr. How the U.S. Supreme Court interprets the constitution; substantive due process, equal protection doctrine.

091:618 Cultural Property arr. 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.

091:620 Law and Technology Seminar Seminar Topics Topics will vary.

091:621 Economics of Law Practice arr. Funding of legal services, past, present, and future.

091:622 Elder Law arr. Qualification for Medicaid, elder abuse and neglect, discrimination in employment and elsewhere, retirement planning and taxation, elder patients' rights in nursing homes; conservatorship and guardianship.

091:623 Critical Race Theory arr. Social, political, and legal writings on aspects of race in development and evolution of American law; how race pervades the fabric of our society, how the law might be used to address social conditions involving commercial, constitutional, and criminal law.

091:624 Cyberspace Law Seminar arr. The wide range of legal and public policy issues created by the newly-emerging electronic technologies; focus on student research, writing, presentations, discussion.

091:626 Federal Antitrust Policy arr. Topics in federal antitrust laws; cartel and other horizontal restraints of trade, measurement of market power, exclusionary practices by dominant firms, vertical restraints, the Robinson-Patman Act, public and private enforcement, remedies, history of antitrust policy; antitrust enforcement in particular markets, such as health care, computer technology, the learned professions. Prerequisite: a law or business antitrust course or consent of instructor.

091:628 Gender and the Law in U.S. History arr. Gender in U.S. legal history; aspects of the law that have been shaped by gender considerations; how rights and obligations have been constructed differently for men and women of different races, classes, ethnicities; encouragement or restraint of sexual expression; what is considered to be misrepresentation; political and reform movements that have attempted to reconfigure laws regarding gender relations. Same as 016:282.
091:631 The History of Free Labor arr.
Rights, obligations, protections of individuals on the job; 18th-century master-servant law; end of slavery, apprenticeship, indentured labor, imprisonment for debt; emergence of "wheel of servitude," Jim Crow era, employment-at-will doctrine, progressive reforms such as anti-sweat legislation; expansions of other common-law actions, such as enticement, seduction, specific performance, habeas corpus.

Practice of law in and for a complex institution; problems confronting attorneys in higher education, doctoral issues prevalent in a university setting; focus on real or hypothetical case studies; doctrinal analysis.

091:633 Selected Problems in Indian Law arr.
In-depth exploration of a legal topic related to Indian country and experience drafting statutory material (i.e., model tribal or federal legislation on a current topic in Indian law), or theoretical foundations and basic doctrines of law governing the rights and status of indigenous nations and communities in the United States; experience researching actual cases or issues concerning indigenous peoples. Recommended: 091:319.

091:634 International Human Rights arr.
Relationship between domestic law, particularly U.S. Supreme Court jurisprudence, and international law and human rights; emphasis on important contemporary issues, such as hate speech and use of death penalty.

091:635 Indigenous Peoples in the International Legal System arr.
Historical and contemporary development of international law and institutions in relation to Native Americans, other indigenous peoples worldwide. Same as 149:176.

Experience creating an electronic handbook (e-book) on international finance, for laypersons and communities worldwide.

Choice of arbitration, limits an arbitrability of disputes, choice of applicable law, arbitration process, enforceability of awards through national legal systems.

The family and its members viewed from various perspectives, disciplines.

091:641 Intellectual Property and the Constitution arr.
Relationship between intellectual property law and the U.S. Constitution, theoretical and practical perspectives.

091:642 International Appellate Advocacy arr.
Public international law, experience researching advanced topics, preparing memorials (briefs) on the topics, and arguing from the memorials. Two semesters. Open only to Jessup International Moot Court Team members.

Philosophical foundations-self-governance, pursuit of truth, self-realization, distrust of government; importance of these issues, their national and international implications.

091:645 Law and the Politics of Family Life arr.
Issues raised under the U.S. Constitution regarding state regulation of families; family and individual privacy, fundamental right to marry, procreation rights, parents' and children's rights, state supervision of families.

091:651 Law of War, Peace, and Military Affairs arr.
Three aspects of law's efforts to govern military affairs: international law of war, U.S. law regulating foreign commitment of the nation's military forces, rights of individual soldiers (particularly women, homosexuals, religious observers).

Two federal statutes designed to intervene in the free play of market forces in certain segments of the labor market: Fair Labor Standards Act, Migrant and Seasonal Agricultural Worker Protection Act.

091:657 LLM Seminar arr.
Basic research and analytical methodologies for the international and comparative law fields; workshop approach to project proposals, drafts.

091:658 Church and State Corequisite: 091:232.

091:659 Law and Lawyers in Literature 1.5 s.h.
Fundamental societal issues and ethical questions examined through discussion of literary works, including novels and plays by writers such as Camus, Cocteau, Dostoevsky, Durrenmatt, Faulkner, Ibsen, Kafka, Melville, Schiller, Thucydides. Same as 008:259.

091:660 Medical Seminar for Law Students arr.
Cosponsored by College of Medicine. Prerequisite: 091:261.

091:661 Legal Issues: Intercolligate Athletics arr.
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.

091:665 Disability Law Seminar arr.
Disability law and policies in relation to mental retardation, mental health. Consent of instructor required. Prerequisite: 091:263.

091:666 Learning Disability and the Law Seminar arr.
Development of law and policy on rights of persons with learning disabilities; nature and prevalence of learning disability, comparison to other disabilities; federal and state laws; federal and state cases alleging discrimination in education, professional certification and licensing, employment, other areas; emerging federal and state policies, such as those related to health care and welfare reform. Prerequisite: 091:263 or consent of instructor.

Constitutional and other legal problems of governments' national security powers, in the United States and other countries; the 20th-century phenomenon of national emergencies, role in contemporary constitutional process; legal origins of emergency or constitutional dictatorship, philosophical and historical roots and evolution of emergency powers, emergency provisions in constitutional law, constitutional mechanisms of states of emergency; domestic use of force; focus on U.S. experience.

091:669 Research Seminar on Negotiations arr.
The compound processes of negotiation; in-depth investigation of specific real-world negotiations. Prerequisite: 091:542.

091:671 Problems in Tax Research arr.
How to do tax research; experience writing legal memoranda and longer papers based on tax research skills. Two semesters.

091:672 Proxy Contests Seminar arr.
Fundamental issues of state and federal law relating to proxy contests for corporate control, shareholder proposals; proxy solicitations, shareholder meetings, corporate elections, tender offers, judicial remedies for violations of state and federal laws.

091:674 Poverty Law arr.
Income maintenance programs; case law and legislative policy regarding the poor.

091:675 Selected Issues in Family Law arr.
A particular issue or set of related issues in family law; relevant cases, scholarship.

091:678 Law and Literature: Novel Approaches to Feminist Jurisprudence arr.
Literary texts that "perform feminist jurisprudence": texts that provide a forum for expressions of women's stories and experiences that law fails to treat or considers irrelevant or inadmissible, and that examine the limitations of legal language, analysis, and method.
College of Medicine

Anatomy and Cell Biology ........ 472
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Executive associate dean: Richard P. Nelson
Associate dean for student affairs and curriculum: Peter Densen
Associate dean for finance and administration: Dennis M. Domsic
Associate dean for faculty affairs: Susan R. Johnson
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Assistant deans: Gerard P. Clancy, Marian H. Schwabhauser, Roger D. Tracy
Assistant to the dean for facilities planning and management: Richard K. Schmidt
Degrees: B.S., M.A., M.D., M.P.A.S., M.P.T., M.S., Ph.D.
Web site: http://www.medicine.uiowa.edu
The College of Medicine, as an integral part of the University, contributes to the educational programs of several thousand students—not only those in the Colleges of Medicine, Dentistry, Nursing, Pharmacy, and Public Health but also those in the life sciences areas of the College of Liberal Arts and the health-related programs of the College of Engineering and other colleges. Additionally, it serves health professionals from throughout the Midwest who take part in a year-round program of continuing medical education, in which several thousand practitioners update their knowledge and skills through refresher courses, clinics, and conferences each year. It also expands and maintains educational and clinical opportunities in communities throughout the state and provides a statewide educational health care resource.

Beyond its academic responsibilities as the only college in Iowa that offers a curriculum leading to the M.D. degree, the College of Medicine is concerned with 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; some faculty members also take part in the University’s Center for Health Services Research.

The College of Medicine is responsible for the associated medical sciences programs of education for physician assistants, clinical laboratory scientists (with tracks in cytogenetics and biotechnology), physical therapists, and nuclear medicine technologists.

Medical and associated medical science students have a number of opportunities to gain firsthand experience in physicians’ offices and community hospitals. For medical graduates, the college offers seven University of Iowa-affiliated family practice residency programs in six cities throughout the state. The college promotes and sponsors experimental programs that demonstrate methods of organizing health services at the local level.

Accredited by the Liaison Committee on Medical Education of the American Medical Association and the Association of American Medical Colleges, The University of Iowa College of Medicine meets the requirements of all state licensing boards. Its 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 of Medicine are accredited by their respective accrediting bodies.

Graduate Programs

The college offers programs leading to graduate degrees through the Doctor of Philosophy in anatomy and cell biology, biochemistry, microbiology, pharmacology, physiology and biophysics, and free radical and radiation biology. Faculty in the college also participate in the interdisciplinary graduate programs in immunology, genetics, neuroscience, and molecular biology. In addition, graduate degree programs leading to a master’s degree are offered in pathology, the physician assistant program, and physical therapy.

Interdisciplinary Program in the Biosciences

The Graduate College and the College of Medicine offer the interdisciplinary Biosciences Program which gives graduate students the opportunity to become acquainted with basic molecular research in the Departments of Anatomy and Cell Biology, Biochemistry, Biological Sciences, Microbiology, Pharmacology, Physiology and Biophysics, and the Programs in Genetics, Immunology, Molecular Biology, and Neuroscience. The Biosciences Program offers graduate students flexibility during their first year of study, before they select the department or program in which they will earn their Ph.D.

For more information about the Biosciences Program, see the Graduate College section of the Catalog.

Medical Scientist Training Program

An interdisciplinary M.D./Ph.D. program offered jointly by the College of Medicine and the Graduate College, the Medical Scientist Training Program provides preparation for careers in academic medicine with emphasis on basic and clinical research. With support from the National Institutes of Health, the program integrates the requirements for graduate education and doctoral research training with the full clinical requirements of the medical curriculum. The program entails approximately seven years of study. For more detailed information, see “Medical Scientist Training Program” in this section of the Catalog.

Translational Biomedicine

The College of Medicine offers a new translational medicine program at the master’s and doctoral level.

Combined M.D./Master’s Degree Programs

Students who want to pursue the M.D. degree in combination with a master’s degree program must gain admission to both the College of Medicine and the Graduate College and must make detailed arrangements with the graduate department chair and with the associate dean for student affairs and curriculum of the College of Medicine.

Doctor of Medicine

The University of Iowa College of Medicine accepts 157 first-year students annually into its four-year course of study leading to the Doctor of Medicine (M.D.) degree.

The curriculum in medicine at the University is based on a strong tradition of excellence and is subject to continual evaluation and renewal. To reflect the changing needs of physicians and society, the college implemented a major revision of its medical curriculum in fall 1995. The revised curriculum is as follows.

Basic Medical Sciences (First Three Semesters)

The first three semesters present a core of sciences basic to the study of medicine and introduce the student to the foundations of clinical practice.

First Semester

090:103 Biochemistry for Medical Students presents concepts concerning structures of biological macromolecules, cellular metabolism, molecular biology and genetics, and extra- and intracellular signaling mechanisms. It uses clinical examples to illustrate how alterations in these molecules and pathways can lead to pathological conditions.

060: 103 Medical Gross Anatomy includes complete dissection of the human body, stressing the relationship to the living system. Clinically relevant areas of anatomical radiology, surface anatomy, human embryology, and clinical correlations are included in lectures accompanying the dissection.

060:116 Medical Cell Biology presents concepts concerning the structure and function of the cell and its organelles at the molecular level. The course consists of basic science lectures and clinical correlations and relates basic cell biological concepts to the understanding and treatment of human disease.

070:110 Medical Genetics is integrated with ongoing classes in anatomy, biochemistry, and cell biology. It provides an overview of clinical and medical genetics, with particular emphasis on recent changes that affect clinical practice with respect to common diseases that have a genetic component.

050:162 Foundations of Clinical Practice I is the first semester of a four-semester sequence that introduces clinical skills essential for a practicing generalist physician.

The five major goals for students over the four-semester course are to develop knowledge, attitudes, and skills that are necessary for:
- maturation into a competent and confident clinician;
- maintaining a lifelong process of learning the practice of medicine;
- application of relevant basic science and clinical concepts and other scientific advances to the practice of medicine;
- application of the principles of health promotion and disease prevention to the practice of medicine; and
- increasing awareness of the ethical and social context in which medicine is practiced.

Through large group lectures, small case-based learning groups, and small-group skill building sessions, students focus on communication in the doctor-patient relationship, accessing and managing medical information, and applying basic biostatistics and principles of medical ethics.
Second Semester

060:234 Medical Neuroscience is an interdepartmental course for medical students, physical therapy students, and graduate students in the basic medical or related sciences. It emphasizes the interdisciplinary and integrated study of the human central nervous system and consists of lectures, clinical correlate presentations, laboratories, and small group discussion sessions. The course faculty is drawn from basic science and clinical departments.

148:251 Principles of Medical Immunology is offered by the interdisciplinary Immunology Program. The goals of the course are to teach basic components and mechanisms of the immune response as well as medical principles of normal and abnormal immunity.

050:240 Human Organ Systems is an interdepartmental course that presents the normal structure (histology) and function (physiology) of human organ systems in a coordinated and integrated organ system and approach. The course is designed to emphasize structure/function relationships by integrating the microscopic anatomic and physiologic function of the normal human organ systems. The course’s faculty includes members of both basic science departments and clinical departments.

050:163 Foundations of Clinical Practice II is the second semester of a sequential, four-semester course that introduces clinical skills necessary for becoming a practicing primary care physician (see 050:162 for overall course goals). In this semester, students continue to work toward course goals through small case-based learning groups, large-group lectures, and small-group skill acquisition sessions. They also are introduced to clinical medicine in a shadowing experience with health care providers. Principles of doctor-patient communication are reinforced and performance of the components of the general physical examination are taught and practiced. Multiculturalism, preventive medicine and health promotion, medical informatics, and the social context of medicine are emphasized.

Third Semester

071:105 Medical Pharmacology bridges the clinical and basic sciences and provides students with principles that must be understood in order to describe properly the actions of drugs in patients.

061:103 Principles of Infectious Diseases presents a comprehensive approach to the microbiology of infectious diseases, covering infectious agents at both the organism and molecular levels. The molecular aspects of pathogenesis are presented as the basis for present and future preventive and therapeutic measures. The laboratory is an important educational instrument, with hands-on experiments ranging from principles of aseptic technique to the most modern molecular aspects of diagnostic microbiology.

069:204 General and Systemic Pathology starts with general principles of disease: cell injury, inflammation, immune mechanisms, neoplasia, and hemodynamic disorders, followed by etiology, pathogenesis, epidemiology, and major clinical and morphologic manifestations of disease by organ systems.

050:164 Foundations of Clinical Practice III is the third semester of a sequential, four-semester course that introduces clinical skills necessary for becoming a practicing primary care physician (see 050:162 for overall course goals). This semester continues the knowledge, attitude, and skill acquisition begun in the preceding two semesters. Students continue to learn through small patient-centered learning groups as well as lecture and clinical skill-building small groups. Content areas include human sexuality, biomedical ethics, and problem-specific medical history and physical exams. Students begin to apply clinical history taking and physical exam skills learned in preceding semesters by taking complete histories and performing physical exams on simulated and real patients.

Several elective courses are available to students during the third semester. These normally carry 2 semester hours of credit. Topics include areas not specifically covered in the regular curriculum and areas related to medical practice and the role of the physician. Course offerings vary from year to year, but typical examples are History of Medicine in Western Society, International Health, Principles of Family Medicine, Spirituality and Health, and Spanish for Health Professionals.

Fourth Semester

050:165 Foundations of Clinical Practice IV is the final course in the foundation series. The fourth semester is devoted primarily to this major interdepartmental course, which includes participation by a large proportion of the faculty and is vital in providing students with the tools for a lifetime of patient care.

Mornings are devoted to intensive review of the diagnostic and therapeutic aspects of organ system-based clinical medicine. The reviews are presented by teams of specialty and subspecialty clinicians. Students are encouraged to acquire and practicing the clinician’s skills in history-taking and physical examination and in preparing for specialty notebooks.

Each student is evaluated individually several times during the semester. Evaluations include the student’s approach to the patient, accuracy of history and physical examination, precision in communicating data gathered, ability to synthesize available data into a realistic differential diagnosis, and ability to apply the process of problem-based learning to the understanding of patient-based problems. Cognitive knowledge of topics covered in the morning lecture sessions is assessed through computer-based multiple-choice examinations. Students who need further work are given guidance and assistance.

050:182 Health Law introduces issues in health care law, with emphasis on how law shapes the rights, duties, and obligations of physicians and patients and the nature of physician/patient/family relationships. Class sessions consist of interactive case-based discussion groups.

Beginning with the College of Medicine’s fall 1997 entering class, all M.D. students are required to pass Step 1 of the United States Medical Licensing Examination before they may be promoted to the third year of the curriculum.

Clinical Years (Third and Fourth)

The clinical courses take place during the last two years of the medical curriculum. In order to qualify for graduation with the M.D. degree, students must complete satisfactorily a total of 81 weeks of courses during the two clinical years: 69 weeks of required courses and 12 weeks of electives. Course distribution is 49 weeks in the first clinical year and 32 weeks in the second. The required courses are as follows.

“Clinical Beginnings,” a required week-long orientation to the generalist core clerkships, takes place immediately before the start of the clinical courses. Content includes an orientation to the clinical courses; introduction to acute trauma management, with laboratory exercises for development and application of important skills; technical skills laboratories that emphasize basic procedures important for clinical courses; simulated patient exercise about communication of bad news; simulated patient assessment of the core physical examination (students must demonstrate competence at a predetermined level; remediation is required for those who do not achieve the required level of competence); and student-developed seminars concerned with personal and professional activities in the clinical courses. The Student Clinical Ceremony completes the weeks’ activities.

Six generalist core clerkships: family medicine preceptorship, internal medicine (ambulatory and inpatient), pediatrics, obstetrics and gynecology, surgery, and community-based primary care. Each course includes a mix of inpatient and outpatient activities, introduces the student to a specific discipline (or to the practice of medicine in the community), and presents the opportunity to develop and practice clinical skills.

Required subspecialty clerkships: anesthesia, dermatology, neurology, ophthalmology, orthopedics, otolaryngology, psychiatry, radiology, and urology, and courses in laboratory medicine and electrocardiography. Advanced clerkships: subinternship, in which the student assumes responsibility for managing patients on inpatient units in a variety of approved medical disciplines, supervised by a senior resident and a faculty physician; emergency room or intensive care rotation.

Three electives: electives chosen from courses listed in the course book distributed by the College of Medicine.

First Clinical Year Course Requirements

All medical students must complete satisfactorily 49 weeks of courses, including Clinical Beginnings, 36 weeks of generalist core
clerkships and 12 weeks of courses chosen from the required subspecialty clerkships.

Second Clinical Year Course Requirements

All medical students must complete satisfactorily 32 weeks of courses chosen from those not completed in the first clinical year, including the required subspecialty clerkships, the advanced clerkships, and electives.

Although the primary venues for clinical training of medical students are The University of Iowa Hospitals and Clinics and the Iowa City Veterans Affairs Medical Center, the family practice preceptorship and the community-based primary care clerkship are off-campus rotations. Some other courses may be assigned to off-campus sites, as well.

Financial Aid

The College of Medicine’s philosophy is that no student should be denied a medical education due to a lack of funds. Therefore, the College of Medicine staff actively seeks adequate financial aid sources to enable every student interested in a medical education to finance that education.

Financial assistance is provided by The College of Medicine on the basis of demonstrated financial need. Although limited grants are available for the most economically disadvantaged students, most aid is in the form of loans. Examples of available federal loan programs are the Primary Care Loan (PCL), the Federal Direct Subsidized Stafford/Ford Student Loan, the Federal Direct Unsubsidized Stafford/Ford Student Loan, and the Perkins Loan program. There are also a number of private loan programs available to medical students.

In addition, the College of Medicine has a number of funds that support collegiate scholarship and loan programs through permanent endowments and/or contributions from alumni and friends of the College of Medicine. The three largest loan funds are the Kellogg/Medical Education Assistance Program, the Carroll Brown Medical Student Loan Fund, and the Sledd Foundation Loan Fund. The Dr. George Scanlon Medical Student Loan (offered through the Iowa Medical Education Fund of the Iowa Medical Society) also is available to M3 and M4 students who are residents of the state of Iowa.

The College of Medicine also manages a number of small funds that support short-term emergency loans for students with immediate financial needs. Information and advice concerning financial aid can be obtained through the College of Medicine Office of Student Affairs.

Admission to the M.D. Program

The 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. Preliminary applications are processed by AMCAS beginning June 1 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 closing date for AMCAS processing is November 1.

Final applications are forwarded to applicants whose AMCAS applications pass a review conducted by the College of Medicine. A $30 fee must accompany the final application from applicants who have not completed work in residence at The University of Iowa.

Admitted applicants also must file with the University Office of Admissions an official transcript from each college attended.

Requirements

Applicants for admission to the College of Medicine must have received the baccalaureate degree, or have completed three years of a curriculum qualifying them to receive the baccalaureate degree after completing the first year in medicine, or have completed three years of a baccalaureate program meeting the general graduation requirements of the college they are attending.

Prospective students must have earned at least 94 semester hours of credit, or the equivalent, including the following.

Physics: a complete introductory course
Mathematics: college algebra and trigonometry, or advanced college mathematics for applicants who completed college algebra and trigonometry in high school
Chemistry: at the minimum, a complete introductory course in organic chemistry, ordinarily following a complete introductory course in modern general chemical principles
Biological sciences: a complete introductory course in the principles of animal biology, or zoology and botany (not botany alone), and an advanced biology course

All the foregoing must be taken with appropriate laboratories.

Applicants for admission to the College of Medicine must possess the capability to complete the entire medical curriculum and achieve the degree Doctor of Medicine. The medical curriculum requires demonstrated proficiency in a variety of cognitive, problem-solving, manipulative, communicative, and interpersonal skills. Therefore, the following abilities and expectations must be met by all students admitted to the College of Medicine.

- Candidates must have sufficient use of the senses of vision and hearing and the somatic sensation necessary to perform a physical examination. Candidates must be able to perform palpation, auscultation, and percussion.
- Candidates must be able to observe demonstrations and experiments in the basic sciences.
- Candidates must be able to learn to analyze, synthesize, solve problems, and reach diagnostic and therapeutic judgments.
- Candidates must be able to respond to patients and establish sensitive, professional relationships with patients.
- Candidates are expected to be able to communicate the results of the examination to patients and to their colleagues with accuracy, clarity, and efficiency.
- Candidates are expected to be able to learn and perform routine laboratory tests and diagnostic procedures.
- Candidates are expected to be able to display good judgment in the assessment and treatment of patients.
- Candidates must be able to learn to respond with precise, quick, and appropriate action in emergency situations.
- Candidates are expected to be able to accept criticism and respond by appropriate modification of behavior.
- Candidates are expected to possess the perseverance, diligence, and consistency to complete the medical school curriculum and enter the independent practice of medicine.

Applicants who may not meet these standards are encouraged to contact the College of Medicine director of admissions.

Fulfillment of the specific requirements for admission does not ensure admission to the College of Medicine. From applicants meeting the requirements, the admissions committee of the College of Medicine selects those who appear to be best qualified for the study and practice of medicine.

To be considered for admission, applicants must have attained a grade-point average of at least 2.50 for all college work undertaken. Where courses are available on a graded or pass/fail basis, it is expected that applicants will have taken the required science courses for a grade.

Preference is given to applicants with high scholastic standing who are residents of Iowa. Consideration also is given to outstanding nonresidents.

Applicants are required to take the Medical College Admission Test, administered by the American College Testing Program for the Association of American Medical Colleges, no later than the summer of the year preceding that for which they are seeking admission.

Students may arrange to apply for this examination through ACT or the University’s Evaluation and Examination Service.

Personal interviews are an integral part of the admission process. Candidates invited for an interview are contacted by the Admissions Committee.

Applicants accepted on or prior to February 15 must submit an advance payment of $50 by March 1. Applicants accepted after February 15 must submit this payment within two weeks after they receive notification of acceptance. The advance payment is credited toward tuition and fees.

All students entering the College of Medicine are required to comply with the pre-entrance and annual health screening program developed by the Student Health Service in cooperation
with The University of Iowa Hospitals and Clinics.

All registered College of Medicine students are required to maintain health insurance (or an equivalent care plan) sufficient to satisfy minimum standards of coverage, in order to attend classes. Insurance coverage must be maintained continuously throughout each year of attendance at The University of Iowa.

Student Policies and Procedures

Student Promotion

The College of Medicine has established promotion policies and procedures to ensure that each person who graduates from The University of Iowa College of Medicine 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 six faculty members and one student member, 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 in any case in which a student’s skills, knowledge, judgment, or ethical behavior is in any way considered consistently marginal or unsatisfactory. Possible recommendations by the committee include immediate dismissal of the student from the college; requiring the student to repeat all or any part of the curriculum on academic probation; and allowing the student to continue with a full or partial course load on academic probation. These recommendations are then forwarded for action to the medical council and executive committee, meeting in joint session to represent the faculty.

Medical students have the right to appeal a promotion decision. Students desiring to do so must submit the appeal in writing to the associate dean for student affairs of the College of Medicine within two weeks after the date of written receipt of the decision. Appeals are considered by the medical council and executive committee, meeting in joint session. Students may request an opportunity to appear personally before the joint session to make a statement and to answer questions.

More specific information about student promotion policies and procedures is available at the Medical Student Affairs Office and is published annually in the Medical Student Handbook.

Disputes and Complaints

Student complaints concerning actions of faculty members or departments are pursued first through mechanisms established in the 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 “Policy on Sexual Harassment” in the Student Life at Iowa section of the Catalog).

Information concerning the established informal mechanisms is available in the Medical Student Affairs Office and is published annually in the Medical Student Handbook.

Unclassified Students

Students who have not been admitted to the College of Medicine but who want to register for certain courses are permitted to do so only if the course is an essential component of a planned program of study and the student complies with all requirements for registration for the course, or by action of the program’s faculty upon recommendation of the course director.

Faculty

Nearly all College of Medicine faculty members are full-time, their work in practice and research being part of—not apart from—their work in teaching. Many have earned national and international honors.

Interdisciplinary Programs, Centers

The college’s interdisciplinary programs and centers draw strength from college faculty members and the facilities available to them, without regard to departmental units or to the distinction between graduate and postgraduate training. Further information is available from the associate dean for research and graduate programs.

The following centers are subdivisions of the College of Medicine.

Clinical Research Center

The Clinical Research Center is the focal point at The University of Iowa for interdisciplinary programs in clinical investigation. It provides a physical and intellectual environment in which clinical investigation can be conducted with maximum regard for patient welfare and safety. The center, which has been funded continuously for 35 years by the National Institutes of Health, is a discrete unit with research nurses and dietitians, biostatistical support, and a computer facility.

Mental Health Clinical Research Center (MHCRC)

The major emphasis of the MHCRC is the study of schizophrenia. The center provides the facilities for research linking the clinical picture of the illness with its underlying neurobiology. The seven research units of the MHCRC conduct the necessary integrative and interdisciplinary research to advance knowledge about the disease.

Cardiovascular Research Center

The Cardiovascular Research Center coordinates research and training programs related to cardiovascular diseases. It encompasses several federally and non-federally funded programs: Program-Project Grant on Integrative Functions in Neurovascular Control, Program-Project Grant on Fatty Acids, Lipoproteins and Lipid Oxidation, the Specialized Center of Research (SCOR) in Coronary and Vascular Diseases, SCOR in Occupational and Immunologic Lung Disease, Program-Project Grant on Cerebral Blood Vessels, SCOR in Hypertension, SCOR in Congenital Heart Disease, SCOR in Cystic Fibrosis, Cystic Fibrosis Foundation Research and Development Program, Program-Project Grant on Gene Therapy for Cystic Fibrosis Lung Disease, Cystic Fibrosis Foundation Gene Therapy Center, and Training Center for Clinical Management of Lipid Disorders. It also coordinates several training programs and a coordinated 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.

Diabetes and Endocrinology Research Center

The Diabetes and Endocrinology Research Center coordinates basic research programs related to diabetes and endocrinologic diseases. It was established in 1979 with support from the National Institutes of Health Institute of Arthritis, Metabolism, and Digestive Diseases.

Cancer Center

The Cancer Center was established in 1980 to coordinate the efforts of University of Iowa faculty and staff in research, education, and demonstration programs related to all aspects of cancer.
Alzheimer's Disease
Research Center

This center studies Alzheimer's disease and related neurological conditions from the viewpoint of neuroanatomy, neuroimaging, neuropsychology, and neurochemistry. The center's purposes are to improve the diagnosis and treatment of these conditions, to disseminate information on new research to the public, and to contribute to a better understanding of the neural basis of cognition.

Center for Macular
Degeneration

The Center for Macular Degeneration was organized to prevent the devastating consequences of macular degeneration in the majority of people at risk. For those already affected by the disease, the center works to develop sight-saving medical, pharmacological, and surgical treatments.

Education and Patient
Care Facilities

First- and second-year classes are taught in the Bowen Science Building, the Medical Education Building, the Medical Laboratories, and in classrooms and conference rooms of the University of Iowa Hospitals and Clinics. The new 214,000-square-foot Medical Education and Biomedical Research Facility, scheduled to open in 2001, will be the home of the preclinical medical curriculum.

The Hardin Library for the Health Sciences is a vital resource centrally located on the health sciences campus.

Students acquire clinical experience in the 843-bed University of Iowa Hospitals and Clinics complex, in the 94-bed Veterans Affairs Medical Center (including observation beds), and in affiliated hospitals and ambulatory care centers throughout the state.

Faculty members of the Colleges of Medicine and Dentistry make up the 623-member clinical staff at The University of Iowa Hospitals and Clinics, whose 16 clinical services are directed by the heads of the corresponding academic departments in those colleges. These faculty members also provide instruction for the 445 resident physicians and dentists and the 127 fellows who make up the house staff of the hospitals and clinics, where facilities are provided for teaching all major medical specialties, for residencies in all such specialties, and for fellowships in a number of subspecialties.

The University of Iowa Hospitals and Clinics serves as a tertiary care center for the state of Iowa and portions of adjoining states, with most patients being referred for care and treatment not readily available in their home communities. For details about The University of Iowa Hospitals and Clinics, Veterans Affairs Medical Center, and related academic and health service units, see "The University of Iowa Health Center" in the Special Resources at Iowa section of the Catalog.

Research Facilities

The Eckstein Medical Research Building, opened for occupancy in early 1989, was designed to provide flexible research space that rapidly adapts to the changing needs of interdisciplinary research activities. The facility serves interdisciplinary groups of faculty scientists, each of whom is researching a human biology problem at the advancing edge of science, and enables them to conduct research in close proximity to other select researchers. In order to accomplish this, the facility's laboratories have been designed to accommodate a wide range of research. The spaces, mechanical systems, and available support services offer the greatest flexibility and adaptability for current and future research.

Other buildings housing research labs include Medical Laboratories, Bowen Science Building, Medical Education Building, Medical Research Facility, and Medical Research Center. Labs also are located at the University's Oakdale Campus. The new Medical Education and Biomedical Research Facility will further expand basic biomedical research space. Currently under construction, the facility is scheduled to open in 2001.

A number of facilities that support the research and teaching endeavors of College of Medicine faculty are administered through the dean's office. University of Iowa research facilities housed in the College of Medicine include the Electron Microscopy Facility and a Computer-Assisted Image Analysis Facility. The Office of Consultation and Research in Medical Education is made up of education specialists in a broad range of areas who serve the faculty, staff, and administration of all College of Medicine programs. The office provides educational consultation, initiates and cooperates in educational research endeavors, and conducts faculty development activities.

Nondepartmental
Courses

050:014 Advanced 3D Computer Modeling 3 s.h.
Application of concepts and techniques learned in 050:153; additional techniques for producing manufacturable geometry and high quality presentation rendering. Consent of instructor required. Prerequisite: 050:153. Same as 049:161.

050:155 3D Computer Modeling Studio 3 s.h.
Pursuit of students' own interests in 3-D computer modeling through student-designed projects, and weekly discussion. Prerequisites: 050:152 and consent of instructor. Same as 049:162.

050:162 Foundations of Clinical Practice 5 s.h.

050:163 Foundations of Clinical Practice II 5 s.h.

050:164 Foundations of Clinical Practice III 7 s.h.
Experience practicing and expanding clinical skills and self-directed learning skills in clinical medicine; expansion of the understanding of medical practice in a social context. Open only to second-year medical students. Prerequisites: 050:162 and 050:163.

050:165 Foundations of Clinical Practice IV arr.
Basic diagnostic considerations in each of medicine's clinical disciplines, as required of primary care providers. Open only to second-year medical students. Prerequisites: 050:162, 050:163, and 050:164.

050:166 History of Medicine in Western Society 2 s.h.
Open only to sophomore medical students.

050:167 Readings in Biomedical Ethics arr.
Intended for medical, nursing, law, and graduate students. Consent of instructor required. Same as 032:268.

050:168 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 freshmen. Open only to senior medical students.

050:169 Clinical Therapeutics 2 s.h.

050:170 Clinical Beginnings 1 s.h.
Orientation to third-year clerkships; technical skills, simulated patient activities, competence with the physical exam.

050:171 Women, Gender, and Medicine: Historical Perspective 4 s.h.
Women in medicine from two historical perspectives; women as patients, healers. Open only to senior medical students.

050:174 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; first-year standing required. Prerequisite: 117:101.

050:175 Foundations of Clinical Practice IV for Physician Assistant Students arr.
Basic diagnostic considerations in each of medicine's clinical disciplines, as required of primary care providers.

050:179 Clinical Therapeutics for Physician Assistant Students 2 s.h.

050:180 Community-Based Primary Care 6 s.h.
Introduction; clinical activities, work with community agencies and resources, didactic and conferences. Open only to medical students.

050:182 Health Law arr.
Broad approach to health law issues in practice of medicine; how laws shape the nature of the physician/patient/family relationship.

050:183 Death and the Dying Patient 1 s.h.

050:190 Scientific Basis of Clinical Medicine 0 s.h.
Advanced concepts in anatomy, biochemistry, biostatistics, and cell biology relevant to clinical reasoning; for nontraditional medical students.

050:203 Clinical Diagnostics 1 s.h.
Nutritional aspects of health and disease, emphasis on medical nutrition therapy; human nutrition in the clinical state as it relates to physiology and biochemistry.

050:209 Hospital Dietary Administration 1 s.h.

050:211 MSTP Research arr.

050:212 MSTP Clinical Connections 1 s.h.
Experience in medical interviewing, physical examination, patient presentation through interactive computer-based learning or direct patient interaction with physician-scientist preceptor. Open only to students in graduate phase of medical scientist training program.
ANATOMY AND CELL BIOLOGY

Head: Mary J.C. Hendrix
Associate professors: Jackie Bickenbach, Martin D. Caswell, John F. Engelhardt
Assistant professors: Robin L. Davison, Rebecca S. Hartley, Michael R. Rebagliati
Graduate degrees: Ph.D. in Anatomy and Cell Biology
Web site: http://www.anatomy.uiowa.edu

The department performs three major functions: teaching human anatomy to students preparing for careers in the health care professions; providing advanced courses, teaching experience, and research training to graduate students preparing for careers in academic research and related scientific fields; and conducting original research into biological structure and structure-function relationships.

Preclinical Study

The department contributes to the preclinical education of health care professionals by providing major courses in gross anatomy and cell biology, histology, and neuroscience. The department participates in the College of Medicine’s Medical Scientist Training Program and the Graduate College’s Molecular Biology Program and Neuroscience Program.

Doctor of Philosophy

Students in the Ph.D. program work directly for the doctorate without an intermediate master’s program. They complete courses in five major subject areas (cell biology, neuroscience, gross human anatomy, histology, and developmental biology), in addition to related background and elective courses. Students also teach in lecture and laboratory courses under faculty supervision. The program may be completed in four to five years of intensive, full-time residence.

During the first year, students rotate through two or more faculty research laboratories. They choose a research area and become affiliated with a faculty member, who acts as their major adviser. By the end of the second year, students undertake the comprehensive examination, define a research problem with their major adviser, and formulate a research prospectus. The comprehensive examination assesses students’ ability to analyze, organize, and apply the information, concepts, and skills acquired in the first two years of the program. Subsequent years are devoted primarily to research.

The final examination for the Ph.D. consists of a public oral defense of the dissertation. The dissertation is based on original research conducted with the guidance of the major adviser and at least four other faculty members on the thesis committee.

Admission

Applicants for admission to the Ph.D. program in anatomy and cell biology should have undergraduate preparation including college mathematics through calculus, one year of organic chemistry, one year of general physics, and at least two upper-level courses in biological sciences. For admission requirements, see the Graduate College section of the Catalog. In addition to taking the Graduate Record Examination (CXE) General Test, applicants to the Ph.D. program in anatomy and cell biology are strongly encouraged to take the Graduate Record Examination Subject Test in Biology or their major undergraduate area.

Financial Support

Financial aid is awarded on a competitive basis to students admitted to the Ph.D. program. Applications for aid should be completed concurrently with the admissions application.

Facilities

The department occupies over 35,000 square feet in the Bowen Science Building on the health sciences campus. These quarters house modern teaching facilities and well-equipped research laboratories. The most modern instrumentation is available, including facilities and equipment for microscopic digital imaging, autoradiographic studies, polymerase chain reaction, and other molecular biological techniques; spectrophotometers, cryostats, tissue culture and protein chemistry, and automated gamma/beta counting systems. Through collaborative programs with the Cancer Center, Cardiovascular Research Center, Diabetes and Endocrinology Research Center, and the Alzheimer’s Disease Research Center, faculty and students also have access to outstanding research facilities throughout The University of Iowa Medical Center.

Courses

060:001 Principles of Human Anatomy 3 s.h.
Gross and microscopic human anatomy; systemic approach to all body areas, with emphasis on clinical relevance. Open only to pharmacy, pre-medicine, and certain medical sciences majors. Offered fall and spring semesters. Prerequisites: 002:010 and 002:011, or equivalents.

060:101 Human Gross Anatomy for Dental Students 6 s.h.
Regional dissection, lectures, demonstrations, with emphasis on head and neck, nervous system. Offered spring semesters. Graduate standing and consent of instructor required.

060:103 Medical Gross Human Anatomy 6 s.h.
Regional dissection, lectures, demonstrations, tutorials, discussions; clinically relevant areas of anatomical radiology, surface anatomy with clinical correlations. Open only to medical students. Offered fall semesters.

060:166 Medical Cell Biology 2 s.h.
Cell structure, function and structure-function relationships of normal and pathological cells and tissues. Open only to medical students. Offered fall semesters.

060:167 Medical Cell Biology II 2 s.h.
Cell structure, function and structure-function relationships of normal and pathological cells and tissues. Open only to medical students. Offered fall semesters.

060:111 Gross Human Anatomy for Physician Assistant Students 6 s.h.
Regional dissection, lectures, demonstrations, tutorials; neuroanatomy, radiology. Offered summer sessions. Enrollment in Physician Assistant Program or Graduate College or consent of instructor required.

060:112 General Histology for Dental Students 4 s.h.
Microscopic study of cells, fundamental tissues, organ systems; emphasis on tooth related structures. Open only to dental and anatomy and cell biology students. Offered spring semesters.

060:114 Oral Histology and Embryology 1 s.h.

060:116 Medical Cell Biology 2 s.h.
Cell structure, function and structure-function relationships of normal and pathological cells and tissues. Open only to medical students. Offered fall semesters.

060:122 Independent Study in Anatomy and Cell Biology 0-6 s.h.
Projects arranged with department faculty members. Consent of instructor required.

060:156 Scanning Electron Microscopy and X-Ray Microanalysis 3 s.h.
Same as 012:156, 052:156.

060:202 Anatomy and Cell Biology Research 0-6 s.h.
Projects arranged with faculty member engaged in research. Open only to graduate students in anatomy.

060:203 Gross Human Anatomy for Graduate Students 6 s.h.
Regional dissection, lectures, demonstrations, tutorials, discussions; semesters, clinically relevant areas of anatomical radiology, surface anatomy with clinical correlations. Graduate standing in anatomy and cell biology or consent of instructor required.

060:204 Survival Skills for a Research Career 1 s.h.

060:205 General Histology for Graduate Students 4 s.h.
Cells, tissues, organs at light and electron microscopic levels. Offered spring semesters. Graduate standing in anatomy or consent of instructor required.

060:206 Problems 0 s.h.
Individual laboratory research training in anatomical sciences.

060:207 Seminars in Cancer Cell Biology 2 s.h.
Recent scientific advances in cancer biology; integrated approach stressing basic science and clinical significance. Prerequisites: biochemistry, cell biology, and molecular biology, or equivalents.

060:215 Functional Anatomy for Graduate Students 4 s.h.
Physiology of major and specialized human organ systems, with histological examination of cell, tissue, and organ structure. Offered spring semesters.

060:216 Cell Biology I 3 s.h.
Correlation of cellular ultrastructure, function. Offered fall semesters. Consent of instructor required.

060:218 Electron Microscopy Techniques 3 s.h.
Same as 002:218, 061:218.

060:220 Advanced Electron Microscopy 3 s.h.
Same as 002:220, 061:220.

060:224 Graduate Student Seminar 0-6 s.h.
Open only to anatomy and cell biology graduate students who present seminars on current research, literature.

060:232 Advanced Human Anatomy II 1-6 s.h.
Regions, systems relevant to specialty interests of student. Open only to senior medical and graduate students. Offered spring semesters. Consent of supervising faculty member required.

060:233 Advanced Histology 2 s.h.
Cells, tissues, organs, with emphasis on clinical relevance. Open only to sophomores, junior, and senior medical and dental students, and graduate students Consent of instructor required.
Nurse Anesthetist Program

The department also coordinates a nurse anesthesia program, a collaboration between the Colleges of Medicine and Nursing. The program, 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.

Courses

116:006 Clinical Anesthesia 2 s.h.
Clinical instruction in perioperative and intraoperative care of the surgical patient; introduction to the clinical management of chronic pain; seminars, clinical case conferences, small group discussions.

116:010 Clinical Anesthesia Senior 2 s.h.
Instruction and practical experience in various forms of anesthesia for surgical procedures; basic techniques of general, spinal, epidural, peripheral nerve block anesthesia; endotracheal intubation, other airway maintenance skills; management of unconscious patients, cardiopulmonary resuscitation; pharmacology of general and regional anesthetics; their impact on respiratory and cardiovascular function; anesthesia seminars, morbidity and mortality conference.

116:011 Intensive Care 2 s.h.
Evaluation, treatment of seriously ill patients in intensive care; ventilator management; evaluation of pulmonary function; monitoring of cardiovascular status, fluid balance and acid base problems, advance monitoring techniques.

116:271 Chemical and Physical Principles of Anesthesia Practice 3 s.h.
Chemistry and physics, as applied to anesthesia. Admissions to anesthesia nursing program or consent of instructor required. Same as 096:271.

116:272 Pharmacology of Anesthesia Practice II 3 s.h.
Mechanism and action of drugs; focus on pharmacotherapeutic principles, including pharmacokinetics, pharmacodynamics, receptor binding, cell signaling; principles of uptake, distribution, elimination of anesthetic and adjunctive agents. Admission to anesthesia nursing program required. Prerequisite: grade of 2.67 or higher in 116:271 or consent of instructor. Same as 096:272.

116:273 Pharmacology of Anesthesia Practice II 1 s.h.
Continuation of 116:272; vascular, hepatic, renal, GI, endocrine aspects; cellular mechanisms, electrolytes alterations. Open only to anesthesia nursing program students Prerequisite: grade of 2.67 or higher in 116:272 or consent of instructor. Same as 096:273.

116:274 Basic Principles of Anesthesia Practice 3 s.h.
Overview of anesthesia as a nursing specialty; patient assessment, anesthetic planning and management, pertinent regulations; principles of general and regional anesthetics for surgical specialties. Prerequisite: grade of 2.67 or higher in 116:272 or consent of instructor. Corequisite: 116:275. Same as 096:274.

116:275 Advanced Principles of Anesthesia Practice I 2 s.h.
Special needs and intraoperative management of obstetric, pediatric, and neurological patients; emphasis on pathophysiology, monitoring, ancillary requirements. Prerequisites: grades of 2.67 or higher in 116:273 and 116:274, or consent of instructor. Same as 096:275.

116:276 Advanced Principles of Anesthesia Practice II 2 s.h.
Special needs and intraoperative management of patients in cardiac, vascular, thoracic, and other surgical specialties; focus on altered pathophysiology, anesthetic requirements; strategies for special surgical situations. Prerequisites: grades of 2.67 or higher in 116:273 and 116:274, or consent of instructor. Same as 096:276.

116:277 Advanced Principles of Anesthesia Practice III 1 s.h.
Acute and chronic pain management; anesthetic problems with concurrent multisystem disease, advanced age, altered physical and/or mental status. Prerequisites: grades of 2.67 or higher in 116:273 and 116:274, or consent of instructor. Same as 096:277.

116:278 Pharmacology of Anesthesia Practice III 1 s.h.
Drugs specific to various specialty areas: toxicology, vascular and cardiac effects. Consent of instructor required.

116:290 Introductory Clinical Anesthesia 1 s.h.
Initial anesthesia preceptorship under faculty supervision; development of basic clinical skills for work as a nurse anesthetist. Open only to anesthesia nursing program students. Prerequisite: grade of 2.67 or higher in 116:273 or consent of instructor. Same as 096:287.

116:291 Clinical Anesthesia I 1 s.h.
Supervised anesthesia clinical experience for general, orthopedic, gynecologic, pediatric, urologic, dental, EENT, ambulatory surgery, or invasive diagnostic procedures. Open only to anesthesia nursing program students. Prerequisite: 116:290. Same as 096:291.

116:292 Clinical Anesthesia II 1 s.h.
Clinical anesthesia experience under faculty supervision at University Hospitals and Clinics, in surgical specialty rotations not completed in 116:291. Open only to anesthesia nursing program students. Prerequisite: 116:290. Same as 096:292.

116:293 Advanced Clinical Anesthesia 1 s.h.
Clinical anesthesia experiences in neurologic surgery, cardiovascular/thoracic surgery; experience providing anesthesia for patients with complex pathophysiology in varied surgical settings. Open only to anesthesia nursing program seniors. Grade point average of 2.67 or higher required. Prerequisites: anesthesia nursing concentration courses. Same as 096:293.

116:294 Obstetrical Anesthesia 1 s.h.
Experience providing anesthesia for the parturient and initial neonatal care; two one month rotations at UI affiliated sites in rural Iowa. Open only to anesthesia nursing program students. Prerequisites: anesthesia nursing courses. Same as 096:294.

116:295 Rural Anesthesia 1 s.h.
Anesthesia experience in community hospitals; three one month rotations at UI affiliated sites in rural Iowa. Open only to anesthesia nursing program students. Prerequisites: anesthesia nursing courses. Same as 096:295.

116:333 Intensive Care Off Campus 2 s.h.
Evaluation and treatment of seriously ill patients in non-ICU settings; patient assessment, ventilator management, pulmonary function, monitoring of cardiovascular stability, fluid balance, and acid base problems; advanced monitoring techniques. Consent of program director required. Prerequisite: 4 s.h. of 116:010.

116:998 Special Study On Campus 2 s.h.
Well defined research project relating to anesthesia; arranged by student with departmental approval.

116:999 Special Studies Off Campus 2 s.h.
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, and peripheral nerve block anesthesia.
DIVISION OF ASSOCIATED MEDICAL SCIENCES

Head: Marian Schwabauer
The Division of Associated Medical Sciences includes five academic programs: Clinical Laboratory Sciences, Nuclear Medicine Technology, Physical Therapy, Physician Assistant Program, and Radiation Sciences. The division provides coordination of academic programs for students in the five units. Students usually enroll initially in the College of Liberal Arts and are assigned a faculty adviser from the division.

In addition to the certificate of completion, the Clinical Laboratory Sciences, Nuclear Medicine Technology, and Radiation Sciences Programs offer the B.S. degree to qualified students. Two of the division’s programs offer graduate degrees, which are awarded by the Graduate College. The M.P.A.S. degree is awarded upon completion of the Physician Assistant Program, and the Physical Therapy Program offers three degree options to qualified students: M.P.T., M.A., or Ph.D.

Although each program in the division has its own admission requirements, they all require a similar foundation in the biological, chemical, and mathematical sciences. Physics, physiology, computer science, biochemistry, general statistics, and psychology are required by some programs and are highly recommended for others. Students should plan their study programs carefully so that conflicts in specifically required courses do not occur. It is imperative that students consult with the appropriate program adviser to assure the proper sequencing of courses.

The general academic policies described here govern all five of the division’s programs. For descriptions of each of the division’s five programs, summaries of each profession, curriculum outlines, prerequisite and admission requirements, and lists and descriptions of courses, see “Clinical Laboratory Sciences,” “Nuclear Medicine Technology,” “Physical Therapy,” “Physician Assistant Program,” and “Radiation Sciences” in this section of the Catalog.

General Academic Policies

Advising
When students declare their intended major to be one of the programs in the Division of Associated Medical Sciences, they are assigned to that program for academic advising.

Admission
Students are admitted to the College of Medicine at the time of formal admission to one of its programs. Admission policies and procedures vary from program to program. Students should consult the individual program descriptions and/or program offices for details of the admission processes. Students may be admitted as degree or nondegree candidates (special students). Nondegree candidates are subject to College of Medicine rules for academic probation and dismissal.

To be considered for admission, applicants must have earned a cumulative grade-point average on all college work attempted as appropriate to each program: clinical laboratory sciences, at least 2.50; nuclear medicine technology, at least 2.50; and physician assistant, at least 3.00. Admission committees give special attention to grades in the sciences, particularly those prerequisite science courses required by the individual programs.

Student Health
All health professions students are required to provide proof of health insurance coverage when they register at The University of Iowa. For more information about this requirement, students should consult the student insurance office. In addition, students admitted to Division of Associated Medical Sciences programs must show proof that they have had a recent physical examination, including routine laboratory procedures and immunizations. For more information, consult the Student Health Service.

Graduation Requirements for Baccalaureate Degrees

General Requirements
Students must earn a minimum of 124 semester hours of credit. The number required after admission to a specific program varies from program to program. Students should consult the program description and/or program director for more specific information.

The general requirements for graduation include quality as well as quantity of work completed. Candidates must earn a minimum grade-point average of at least 2.00 in all college work attempted, all work undertaken at The University of Iowa, and all graded work attempted after admission to the 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.

The residence requirement may be met by earning the final 30 consecutive semester hours in residence, or 45 of the last 60 semester hours in residence, or an overall total of 90 semester hours in residence.

Nonresident instruction includes course work at other colleges and universities, course work in other undergraduate colleges at The University of Iowa, and all work by correspondence, including University of Iowa Guided Correspondence Study courses.

General Education Program requirements vary from program to program. Students must check the requirements of the specific program or degree objective. Specific requirements for the major are listed in each program description.

Double Majors
Students may earn more than one major in the College of Medicine by meeting the requirements for each major.

Two Baccalaureate Degrees
Students who want to earn two baccalaureate degrees, each from a different college, may do so under a combined degree program. They must have their combined course of study approved by the dean of the College of Medicine and the dean of the other college to be eligible for a combined degree program.

Second Baccalaureate Degree
Students who already possess a baccalaureate degree and who want to earn an additional bachelor’s degree must complete at least 30 consecutive semester hours in the College of Medicine. Students who hold a B.A. or B.S. degree will be considered to have completed the General Education Program except for the foreign language component. Holders of other degrees must meet college and program degree requirements. Students with B.A. or B.S. degrees must satisfy the residence requirement for a bachelor’s degree at Iowa. Candidates for a second bachelor’s degree must apply for the degree through the Office of Admissions.

Combined Baccalaureate Degree Program
Students may earn two University of Iowa baccalaureate degrees in a combined curriculum program in the Colleges of Medicine and Liberal Arts. Although students begin their academic program in the College of Liberal Arts, they must be eligible for admission to College of Medicine baccalaureate programs in clinical laboratory sciences or nuclear medicine technology.

Students who select this program must meet baccalaureate degree requirements specified by both colleges. Candidates in the combined program usually are able to meet the baccalaureate degree requirements of both colleges in about five academic years. The exact length of time necessary to complete the program is determined by the major areas of study selected in each college. Students who enter the combined degree program are assigned two faculty advisers, one in the major department of the College of Medicine and the other in the major department of the College of Liberal Arts.

Candidates in the combined degree program must satisfy all requirements for both degrees. They must complete an overall total of 154 semester hours of credit, including at least 30 semester hours of courses offered by the College of Medicine and at least 30 semester hours of courses offered by the College of Liberal Arts.

Students interested in the combined degree program should see the director of the baccalaureate program of their choice in the College of Medicine.
Minors

Students graduating from the 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. In general, a minimum of 15 semester hours must be taken in the minor.

Application for Degree

Students who want to be considered for graduation must file an application for degree with the Office of the Registrar before the deadline for the session in which the degree is to be conferred. Students who want to have a minor listed on their transcript must indicate this on the degree application form so that completion of the requirements for the minor can be verified.

Duplication

Duplication occurs when students take the same course more than once or when they take a course that duplicates the content of a satisfactorily completed course. Regression occurs when students take a more elementary course after having satisfactorily completed a more advanced or higher-level course in the same subject. Duplication and regression are assessed by the registrar at the time of graduation analysis. Hours earned by duplication or regression do not count toward the number of hours needed for graduation.

Graduation Honors

Approximately 10 percent of the division’s graduating students may be recognized for their scholastic achievement upon recommendation by the program and with the dean’s approval. Minimum criteria have been established for the following designations: distinction, high distinction, and highest distinction.

Registration and Grading

Students are not allowed to register after the third week of the semester or the first one and one-half weeks of the summer session. The maximum permitted registration is 20 semester hours in a regular semester and 10 in the summer session. 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 adviser and the course instructor at any time during the first two-thirds of the course. Approval is required from the head of the division 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 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 adviser, and the head of the division at any time prior to the end of the first two-thirds of the course.

Other changes in registration (such as to audit for 0 credit) may be made only during the first one-fifth of the course.

It is the student’s responsibility to see that the change of registration form is approved by the necessary individuals and delivered to the Registration Center. Changes in registration become effective on the date the completed form is submitted to the Registration Center.

Withdrawal of Registration

Students may withdraw registration without academic penalty at any time prior to the end of the first four-fifths of the course, but no credit is given for the course. Later withdrawal results in automatic assignment of an F. Students who withdraw are not reinstated after the deadline for that session.

Grading Procedures

Marking procedures vary from program to program. Students should consult individual program policy statements for information.

Auditing Courses

Students may register as auditors 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 R (registered) is assigned if the student’s attendance and performance are satisfactory; if they are unsatisfactory, the mark of W (withdrawn) is assigned. Courses completed with a mark of R do not meet any college requirement and carry no credit toward graduation. Auditing may not be used as a second-grade-only option.

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 special form obtained from the program office. The properly signed form must be presented to the registrar’s office before the end of the first one-fifth of the course. Both grades will remain on the permanent record, but only the second one is used to calculate grade-point average and hours earned.

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.

Credit by Examination

The procedure for the acceptance of and the granting of credit by examination varies from program to program. The program director should be consulted for further information.

Reports to Students

Instructors contact any student whose work falls below the minimum acceptable level when the problem is recognized. Grades are reported on the student’s transcript, following University protocol. No formal midterm reports are given.

Academic Progress, Probation, Dismissal

Students are expected to maintain satisfactory academic and professional standards and to demonstrate reasonable progress toward the degree and certificate. Students who fail to maintain satisfactory academic progress or professional standards of behavior as determined by the program may be placed on probation or dismissed from the program. Probation serves as a warning that students will not graduate unless their 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 the executive committee of the division, at least four months prior to the requested date of readmission.

Students placed on probation or dismissed from a program are notified in writing of these actions by the program director; copies are placed in their files.

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 summarily 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 College of Medicine are reported to the dean with a statement of relevant facts. The program director and the instructor concerned 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 may warrant: disciplinary probation, assessment 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 submit an appeal in writing to the dean within two weeks after the date of receipt of the decision in writing.

Financial Aid

Students in the Division of Associated Medical Sciences undergraduate programs 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 and are awarded on the basis of demonstrated need. Part-time work in related areas is sometimes available.

BIOCHEMISTRY

Head: John E. Donelson
Professors: Arthur Arnone, Mary Sue Coleman, Robert J. Deschenes, John E. Donelson, Alice B. Fulton, Pamela Geyer, Rex Montgomery, Bryce V. Plapp, David H. Price, Peter Rubenstein, Arthur A. Specter, Earle Stellwagen, Larry S. Tobacman, Marc S. Wold
Professors emeriti: Thomas W. Conway, Joseph I. Routh, Charles A. Swenson
Adjunct professors: Theresa Gioanni, Nancy C. Stellwagen, Joseph Walder

Associate professors: Robert E. Cohen, Kenneth P. Murphy, Andrew D. Robertson, Madeline A. Shea, Daniel L. Weks, Lois Weisman

Associate professor emeritus: Gene F. Lata
Assistant professors: Ramanan Subramaniam, Lori Wallraff

Undergraduate degrees: B.A., B.S. in Biochemistry
Graduate degrees: M.S., Ph.D. in Biochemistry

Web site: http://www.biochem.uiowa.edu/

Biochemistry is the study of the basic chemical processes that occur in all living systems. One of the most active sciences, it provides a foundation for other biosciences.

Biochemists generally work in laboratories and/or classrooms. Those with a bachelor’s degree are often employed as research assistants in industry, government, education, and health service, or in secondary school teaching, for which licensure is required.

Biochemists with advanced degrees-usually a doctorate-pursue teaching, research, and/or administrative careers in universities, medical schools, hospitals, private research agencies, government laboratories, biotechnology companies, and in food, drug, cosmetics, chemical, petroleum, and allied industries.

Undergraduate Programs

The College of Liberal Arts administers undergraduate programs and grants undergraduate degrees in biochemistry. See the College of Liberal Arts introductory section of the Catalog for general information about undergraduate study at the University.

The department offers both Bachelor of Science and Bachelor of Arts degrees. The requirements are outlined below. Students choose advanced science electives to supplement biochemical studies or as part of a minor or a double major. Science elective courses numbered below 100 need advisor’s approval to be counted toward the degree.

Transfer credit for biochemistry courses requires the approval of the undergraduate adviser in Biochemistry.

Bachelor of Science

The B.S. degree program in biochemistry prepares students to work in positions that require a basic mastery of biochemistry. It is also excellent preparation for graduate study in biochemistry and related sciences or for study toward a professional degree in the health sciences.

The B.S. degree in biochemistry requires 73 semester hours in addition to the College of Liberal Arts General Education Program requirements. Courses required for the B.S. degree are as follows.

One of these pairs:
22M:021-022 Calculus and Modeling I-II 8 s.h.
22M:025-026 Calculus I-II 8 s.h.
22M:035-036 Engineering Calculus I-II 8 s.h.

002:010-011 Principles of Biology I-II 8 s.h.

One of these pairs:
004:013-014 Principles of Chemistry I-II 6 s.h.
004:018-019 Chemical Science I-II (preferred) 6 s.h.
004:016 Principles of Chemistry Lab 2 s.h.
004:020 Chemical Science Laboratory (preferred) 2 s.h.

One of these pairs:
004:121-122 Organic Chemistry I-II 6 s.h.
004:123-124 Organic Chemistry for Majors I-II (preferred) 6 s.h.
009:241-242 Biophysical Chemistry I-II 6 s.h.

One of these:
004:141 Organic Chemistry Laboratory 3 s.h.
004:142 Organic Chemistry Laboratory for Majors (preferred) 3 s.h.
029:017-018 Introductory Physics I-II 8 s.h.
099:091 Orientation and Introduction to the Field of Biochemistry 0 s.h.
099:101 Technical Communication in Biochemistry 1 s.h.
099:120 Biochemistry and Molecular Biology I 3 s.h.
099:130 Biochemistry and Molecular Biology II 3 s.h.
099:140 Experimental Biochemistry 4 s.h.
099:155 Research, Independent Study (required of all B.S. students, including all honors students) 6 s.h.

Advanced science electives, chosen in consultation with advisor 9 s.h.

*Students may register in 099:155 only if they have earned an average grade of B or better in 099:120, 099:130, and 099:140 and a grade of B- or better in each of 099:120, 099:135, and 099:140; or have consent of adviser and instructor.

BACHELOR OF ARTS

The B.A. degree in biochemistry requires 58 semester hours in addition to the College of Liberal Arts General Education Program requirements. The required courses are as follows.

002:010-011 Principles of Biology I-II 8 s.h.

One of these pairs:
004:013-014 Principles of Chemistry I-II 6 s.h.
004:018-019 Chemical Science I-II (preferred) 6 s.h.

One of these:
004:131 Physical Chemistry I 3 s.h.
004:132 Physical Chemistry II 3 s.h.
009:241 Biophysical Chemistry I 3 s.h.

One of these pairs:
22M:021-022 Calculus and Modeling I-II 8 s.h.
22M:025-026 Calculus I-II 8 s.h.
22M:035-036 Engineering Calculus I-II 8 s.h.

009:091 Orientation and Introduction to the Field of Biochemistry 0 s.h.
099:101 Technical Communication in Biochemistry 1 s.h.
099:120 Biochemistry and Molecular Biology I 3 s.h.
099:130 Biochemistry and Molecular Biology II 3 s.h.
099:140 Experimental Biochemistry 4 s.h.

Advanced science electives, chosen in consultation with adviser 6 s.h.

In addition, B.A. students intending to go on to advanced degrees in the biological or health...
Before the third semester begins:
- 3 semester hours of 099:155 Research, Independent Study (senior research) in their programs.

**Teacher Licensure**

Biochemistry majors, especially those in the B.A. program, may qualify for teacher licensure by taking additional courses in teacher education. Students should consult with an adviser in the College of Education.

### 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 third semester begins:
- 004:013-014 or 004:018-019, and 004:016;
- 22M:025 or 22M:035 or 22M:021-022 or 22M:035-036; 099:001; and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: the courses listed above, plus 002:010-011; 004:121-122 and 004:141; 22M:026 or 22M:036 or 22M:021-022 or 22M:035-036; and at least one-half of the semester hours required for graduation

Before the seventh semester begins: the courses listed above, plus 029:017-018, 099:120, 099:130, and 099:140, two science electives, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: the courses listed above, plus 004:131 or 004:132 or 099:241, a science elective, and at least 3 semester hours of 099:155

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 Arts**

Before the third semester begins:
- 004:013-014 or 004:018-019, and 004:016;
- math through 22M:026 or higher; 099:001; and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: the courses listed above, plus 002:010-011; 004:121-122, and at least one-half of the semester hours required for graduation

Before the seventh semester begins: the courses listed above, plus 029:017-018, 099:120, 099:130, and 099:140, two science electives, and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: the courses listed above, plus 004:131 or 004:132, 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

**Honors**

Qualified students may earn an honors degree in biochemistry. They must be enrolled in the University Honors Program and must do special work in 099:155 Research, Independent Study. Honors students present their research results in a report written in the form of a journal article and in an oral report presented at a special open departmental seminar.

**Combined Programs**

Students, especially those in the B.A. program, may include courses from other disciplines, such as business, prelaw, psychology, or journalism. This prepares them for one of the many vocation on which biochemistry has an impact.

**Graduate Programs**

The College of Medicine and the Graduate College coordinate graduate programs in biochemistry and other biosciences; graduate degrees are granted through the Graduate College. See the College of Medicine introductory section and the Graduate College section of the Catalog for general information about study in medicine and graduate study at the University.

The Department of Biochemistry offers programs of study leading to the MS. and Ph.D. degrees. The department also offers opportunities for qualified and interested students to pursue combined programs leading to the MS.-M.D. or Ph.D.-M.D. (medical scientist training) degrees.

The focus of the graduate program is on the individual student. In the first year, students engage in formal course work and tutorial laboratory experiences that serve as the basis for selecting a topic for thesis research.

First-year students spend half of their time taking biochemistry courses-usually the following.

- 099:241-242 Biophysical Chemistry I-II 6 s.h.
- 099:282 Seminar 1 s.h.
- *142:215 Molecular Biology I 3 s.h.
- *156:201 Principles in Molecular and Cell Biology 4 s.h.
- *The molecular biology course is interdisciplinary; for course description, see “Molecular Biology” in the Graduate College section of the Catalog.

Students spend the other half of their time working in four different faculty laboratories (099:261 Research Techniques), learning research techniques in the context of ongoing projects.

After the first year, students choose research laboratories for Ph.D. thesis research, begin their thesis projects, and take courses that supplement and complement their interests and preparation. During this time, they must take a minimum of 8 semester hours of course work, including short courses in biochemistry and elective science courses (numbered above 100 or 200) in other departments.

Students take the comprehensive examination before the end of June in their second year, after which they are admitted formally to degree candidacy and begin to concentrate on thesis research. The program culminates in students’ successful defense of their completed thesis work before an examining committee.

In addition to meeting these requirements and those of the Graduate College, students are expected, as part of their training, to assist in teaching biochemistry for two or three semesters.

Throughout the program, students are associated with small research seminar groups and receive close personal attention from the biochemistry faculty members who serve as research advisers.

**Admission**

The graduate program in biochemistry is flexible enough to accommodate students with bachelor’s degrees in any of the biological, biochemical, or physical sciences. Appropriate preparation includes one-year, college-level courses in organic and physical chemistry, biology, physics, and mathematics through calculus. Students are expected to have had one or more introductory courses in biochemistry.

Minimum requirements for admission to the department include a 3.00 undergraduate grade-point average and acceptable scores on the verbal, quantitative, and analytical sections of the Graduate Record Examination (GRE) General Test. Candidates are more competitive if they also submit scores for the advanced examinations in chemistry, biology, or biochemistry, molecular and cell biology.

**Financial Support**

Usually, all students admitted to the Ph.D. graduate program in biochemistry receive financial assistance.

**Research**

The department’s current research interests include the study of protein structure and function, protein folding, complex carbohydrate structure and function, regulation of gene expression, mechanisms involved in transcription and replication, enzyme reaction mechanisms, intracellular signaling, differentiation, structure, and membrane determinants of cell shape and motility. The department’s web site provides more detailed information about faculty research interests.

**Facilities**

The Department of Biochemistry occupies modern research quarters in the Bowen Science Building, where the Departments of Anatomy and Cell Biology, Microbiology, Pharmacology, and Physiology and Biophysics also are located. Most of its research and teaching facilities are located on a single floor. However, a few of the
department’s research groups are located in adjacent buildings.

The University of Iowa maintains a number of central research support facilities and equipment that promote campuswide interactions between research groups. These include the facilities for electron microscopy, fermentation, image analysis, high-field NMR, high resolution mass spectrometry, and academic computing (through Information Technology Services). The College of Medicine operates other facilities available to biochemistry researchers, for nuclear magnetic resonance, flow cytometry, DNA synthesis, tissue culture hybridoma, gene transfer vector core, and transgenic and gene targeting.

Individual faculty research laboratories are well-equipped for modern research, and there are many common-use laboratories, including instrument rooms, a reading room, cold rooms, tissue culture areas, preparation rooms, and a stockroom. Research is supported by staff in instrument shops, animal quarters, photography and illustration service, and by office staff, stockroom supervisors, and a purchasing agent.

Together, the department and the central support facilities can provide virtually all of the equipment required for modern biochemical research. Examples of such equipment include analytical and preparative ultracentrifuges; fluorescence, optical rotary dispersion, high-field NMR, ultraviolet-visible, and rapid kinetic instruments; amino acid analyzers and protein sequencers, gas chromatographs, preparative high performance liquid chromatographs, liquid scintillation counters, electrophoresis equipment, instrumentation for protein X-ray crystallography, Cary spectrophotometers, an automatic DNA synthesizer, and an automatic DNA sequencer.

The department maintains a reading room stocked with primary books and journals used by biochemists. The Hardin Library for the Health Sciences is a large, complete library located near the Bowen Science Building. Excellent resources also are provided by other departmental branches of the University Libraries system and by computer access to Bibliographic Retrieval Services.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>099:000</td>
<td>Cooperative Education Internship</td>
<td>0 s.h.</td>
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<tr>
<td>099:001</td>
<td>Orientation and Introduction to the Field of Biochemistry</td>
<td>0 s.h.</td>
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<tr>
<td>099:101</td>
<td>Technical Communication in Biochemistry</td>
<td>1 s.h.</td>
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<tr>
<td>099:110</td>
<td>Biochemistry</td>
<td>3 s.h.</td>
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<tr>
<td>099:115</td>
<td>Undergraduate Independent Study</td>
<td>arr.</td>
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<tr>
<td>099:120</td>
<td>Biochemistry and Molecular Biology I</td>
<td>3 s.h.</td>
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<tr>
<td>099:130</td>
<td>Biochemistry and Molecular Biology II</td>
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<tr>
<td>099:140</td>
<td>Experimental Biochemistry</td>
<td>4 s.h.</td>
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<td>099:155</td>
<td>Research, Independent Study</td>
<td>2-6 s.h.</td>
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<tr>
<td>099:161</td>
<td>Biochemistry for Dental Students</td>
<td>4 s.h.</td>
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<tr>
<td>099:162</td>
<td>Biochemistry for Pharmacy Students</td>
<td>4 s.h.</td>
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<tr>
<td>099:163</td>
<td>Biochemistry for Medical Students</td>
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<tr>
<td>099:164</td>
<td>Biochemistry for Physician Assistant Students</td>
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<td>Research Biochemistry</td>
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<td>099:175</td>
<td>Research Independent Study</td>
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<td>099:180</td>
<td>Seminar</td>
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<td>099:237</td>
<td>Topics in Biochemistry</td>
<td>1-2 s.h.</td>
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<td>099:241</td>
<td>Biophysical Chemistry I</td>
<td>3 s.h.</td>
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<tr>
<td>099:242</td>
<td>Biophysical Chemistry II</td>
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<td>099:244</td>
<td>Seminar</td>
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<tr>
<td>099:275</td>
<td>Perspectives in Biocatalysis</td>
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<td>099:282</td>
<td>Seminar</td>
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<tr>
<td>099:292</td>
<td>Research Biochemistry</td>
<td>arr.</td>
</tr>
<tr>
<td>099:293</td>
<td>Research Independent Study</td>
<td>2-6 s.h.</td>
</tr>
</tbody>
</table>

Clinical Laboratory Sciences

Director: Marian Schwabauer
Medical director: Theodore A. Koerner
Professor: Marian H. Schwabauer
Associate professor: Theodore A. Koerner
Adjunct lecturer: John Abadi
Associate: James O’Connor
Assistant-in-teaching: Kathleen Kelly
Adjunct assistants-in-teaching: Mary Droll, Kathy Eyres, Susan Forde, Thomas Gahan, Dennis D. Guant, Jan Gavin, Becky Gorsch, Patricia Knebel, Mike Last, Kathy Ryerson, Gloria Schramweber, Barbara Stewart
Undergraduate degree: B.S. in Clinical Laboratory Sciences
Web site: http://www.medicine.uiowa.edu/pathology/pathfolder/education/CLSP/CLSPhome.html

The Clinical Laboratory Sciences Program is one of five academic units in the Division of Associated Medical Sciences. It is sponsored cooperatively by the College of Medicine, the College of Liberal Arts, The University of Iowa Hospitals and Clinics, and the Veterans Affairs Medical Center. For detailed information on the division’s general academic policies, see “Division of Associated Medical Sciences” in this section of the Catalog.

Clinical laboratory scientists/medical technologists perform the laboratory tests on which physicians rely 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. Clinical laboratory scientists/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.

Satisfactory completion of the Clinical Laboratory Sciences Program qualifies students to take all national clinical laboratory scientist/medical technologist certification examinations. The program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences. Assuming that students have completed the required courses indicated above in the freshman, sophomore, and junior years, the remaining curriculum may be as follows.

Senior Year

The professional (clinical) program consists of a minimum of 12 months of didactic and practical instruction. The first summer session and fall semester are devoted to lectures, laboratory experience, demonstrations, short generalist rotations, and seminars covering theory and technique in clinical laboratory science. During the last semester, students have the opportunity to rotate through the clinical laboratory facilities of The University of Iowa Hospitals and Clinics, the Veterans Affairs Medical Center, and other hospitals in Cedar Rapids and Des Moines, Iowa.

The program is made up of the following courses.
Admission

The clinical laboratory sciences/medical technology professional program is limited to 44 students, who begin the program in late May and finish it the following May.

To apply for admission to the professional program, students must be able to complete all of the following prerequisites and University graduation requirements by the end of the professional (clinical) year.

Chemistry, including qualitative analysis, organic chemistry, and biochemistry 14 s.h.
Mathematics 3 s.h.
Statistics 3 s.h.
Biology, including general zoology, microbiology, and human physiology 14 s.h.

Applications close October 15. Admission is on a competitive basis. Cumulative grade-point averages of 2.50 overall and 2.50 in science generally are required. Applicants who enter the program as undergraduate students must meet the general admission requirements of the College of Liberal Arts and should consult with a Clinical Laboratory Sciences Program adviser as early as possible to plan preclinical studies that meet all requirements.

Expenses

Clinical laboratory science students in the professional-year curriculum are responsible for textbooks, University tuition, and student fees. Laboratory coats and equipment such as microscopes are provided by the program.

DERMATOLOGY

Head: Richard Southeimer
Professors: Donald F. Downing, Kahi C. Madison, Warren Pette, Thomas L. Ray, Daune C. Whitaker
Professors emeriti: Richard M. Caplan, John S. Strauss
Clinical professor: Roger J. Ceilley
Associate professor: Mary S. Stone
Clinical associate professors: Dan Bovenmyer, Susan Wall
Assistant professors: Christopher J. Arpey, Nancy M. Cunningham, Kimberly K. Schulz
Clinical assistant professors: Robert F. Godwin, Randall R. Maharry
Web site: http://tray.dermatology.uiowa.edu

The Department of Dermatology instructs medical 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.

Medical Student Training

The University of Iowa program is one of the few in the country with a required rotation for medical students. Each third-year medical student spends two weeks in the clinic and attends about 10 one-hour lectures. A good cross section of patients is available due to the mixture of primary and tertiary care patients, including a large number referred from Student Health Service. Additional patients are seen at the nearby Veterans Affairs Medical Center.

Various electives are available for fourth-year medical students, including further clinical experience, dermatologic research, and special studies.

Courses

062:001 Clinical Dermatology 2 s.h.
Basic dermatology; lectures, independent study, clinical experience. Open only to third-year medical students.

062:002 Dermatology Elective arr.
Advanced clinical experience, dermatologic surgery, special assignments. Open only to fourth-year medical students.

062:004 Research in Dermatology arr.
General principles of medical research, clinical or laboratory projects; individual study.

062:005 Dermatology Elective for Physician Assistant Students arr.

062:988 Special Studies On Campus arr.
Arranged by student with departmental approval.

062:999 Special Studies Off Campus arr.

DIETETIC INTERNSHIP

Director: Marlys Dumphy
Web site: http://www.ulhc.uiowa.edu/fns/

The University of Iowa Hospitals and Clinics offers a Dietetic Internship Program that is fully accredited by the American Dietetic Association’s Commission on Accreditation for Dietetics Education and that qualifies graduates to take the exam for qualification as a Registered Dietitian (RD). Clinical dietitians and food service system managers of The University of Iowa Hospitals and Clinics Department of Food and Nutrition Services provide the clinical teaching for the program. Graduate courses in the program are administered by The University of Iowa Colleges of Medicine and Public Health. See “Associated Courses” in this section of the Catalog.

Students generally complete the program with 9 semester hours of graduate credit, which may be applied toward an advanced degree. Approximately half of the program’s graduates go on to complete advanced degree programs, most typically the master’s degree in health promotion, public health, instructional design, or business.

The University of Iowa Hospitals and Clinics awards a certificate to program graduates.

To be admitted to the program, applicants must meet the requirements of The University of Iowa Graduate College and must complete a didactic program in dietetics that has approval of the ADA Commission on Accreditation for Dietetics Education.

Students must enter the program in the fall semester. The postmark deadline for application is February 15.

Associated Courses

For course descriptions, see “Nondepartmental Courses” in the College of Medicine introductory section of the Catalog and “Epidemiology” in the College of Public Health section.

050:203 Clinical Dietetics 1 s.h.
173:190 Problems and Special Topics in Epidemiology 3 s.h.
173:230 Principles of Dietary Assessment 1 s.h.
173:235 Nutritional Epidemiology 2 s.h.
173:236 Nutrition Intervention in Clinical Trials Research 2 s.h.

FAMILY MEDICINE

Head: Cynda A. Johnson
Professors: Arthur Hartz, Cynda A. Johnson
Professors emeriti: Reuben B. Widmer, Glensy O. Williams
Clinical professor: John E. Sutherland
Associate professors: George R. Bergus, John W. Ely, Robert Garrett Gerald J. Jogerst, Barcely T. Levy, David M. Rosenthal
Associate professors (clinical): Richard Dobyns, David Ely, Robert Garrett
Clinical professors: Gordon Baustian, Dean Bunting, Robert L. Friedman, Mark Graber, Gregory L. Hockstra, David McNees, Michael Jung, Gerald J. McGowan, Michael Sparacino
Assistant professors: Marcy Rosenbaum, Alicia Weissman
Assistant professors (clinical): David Bedell, Adelaide Garwell, Susan Langbehn, Sara Mackenzie, Richard Pretorius
Associates: Larry D. Beatty, Betty Engelbseten, Nicholas S. Galilo, Dawn S. Lauridsen, Dennis J. Walter
Web site: http://www.uiowa.edu/~famprac
The Family Medicine Program prepares primary care physicians. The department offers course work that is included throughout the four-year M.D. program. Eighteen 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 campus, and in preceptorships with selected family physicians throughout the state. There also is opportunity for independent study during the senior year.

**Residency Program**

The department directs a three-year residency program whose graduates are eligible for certification by the American Board of Family Practice. The residency trains physicians to provide continuing and comprehensive care to the total family unit, using a concept that integrates the patient, health professionals, and the physician into an efficient and effective health care team.

The program has a required core of rotations in adult medicine, natural child health, surgery, and behavior medicine. In addition, elective rotations are provided so that residents have some freedom to tailor training to their interests and needs. It includes a broad spectrum of electives in internal medicine, pediatrics, obstetrics and gynecology, psychiatry, medical and surgical subspecialties, geriatrics, rural family practice, and community medicine. The program currently offers 72 individual rotations.

The hospital-based clinical experience is a unique combination of exposure to practice in The University of Iowa Hospitals and Clinics, where the patients have been referred by physicians from all over the state, and in various community hospitals, where inpatient care is of a nature more typical of family practice. During the first year, a large portion of the program is based at Mercy Hospital in Iowa City, where residents have the opportunity for full participation in the practice of both inpatient and outpatient-of the private physician staff. Rotations are specifically designed to provide breadth of experience. In the second and third years, residents spend increasing time on rotation at The University of Iowa Hospitals and Clinics. Residents may select model office experiences in the Family Practice Center or the Lone Tree rural office.

**Facilities**

The department office, located on the University’s health center campus, contains faculty offices and the Family Care Center, where patients are seen by appointment. Patients are assigned either to faculty-staff physicians or to resident physicians, who provide medical care with faculty supervision. Each resident is responsible for his or her patients for the duration of the resident’s training program. Emphasis is placed on teaching the principles of practice management, including organizational and administrative decision making, patient record and bookkeeping procedures, and chart auditing methodologies required to manage a private practice. The department has community-based clinics in Coralville and North Liberty, Iowa, and rural satellite offices located in Lone Tree and Sigourney, Iowa.

**Courses**

115:201 Principles of Family Medicine 2 s.h.
115:202 Spirituality and Health 1 s.h.
115:300 Preceptorship in Family Medicine 3 s.h.
115:401 Family Medicine Clerkship, Broadlawns Hospital, Des Moines Family Health Center 4 s.h.
115:402 Emergency Room Outpatient Clinic, Broadlawns Hospital, Des Moines Family Health Center 4 s.h.
115:404 Family Medicine Clerkship, Broadlawns Hospital, Des Moines Family Health Center 4 s.h.
115:406 Sub-Internship in Family Medicine, Iowa Lutheran 4 s.h.
115:407 Family Medicine Iowa Lutheran 4 s.h.
115:408 U of I Family Medicine Clerkship 4 s.h.
115:409 Family Medicine, Mason City 4 s.h.
115:410 Independent Studies arr.
115:411 Rural Preceptorship in Family Medicine 4 s.h.
115:412 Central Nervous System Management and Rehabilitation, Covenant Medical Center, Waterloo 4 s.h.
115:413 Urban Preceptorship in Family Medicine 4 s.h.
115:414 Sub-Internship in Family Medicine, Waterloo 4 s.h.
115:420 Family Medicine Clerkship, Sioux City 4 s.h.
115:421 Family Medicine Clerkship, Red Oak 4 s.h.
115:422 Family Medicine Clerkship, Waterloo 4 s.h.
115:423 Sob-Internship in Family Medicine, Waterloo 4 s.h.
115:424 Family Medicine Clerkship, Waterloo 4 s.h.
115:425 Emergency Room, Waterloo 4 s.h.
115:426 Geriatrics Elective 4 s.h.
115:427 Emergency Medicine, Marian Health Center, Sioux City 4 s.h.
115:430 Emergency Medicine, Marian Health Center, Sioux City 4 s.h.
115:555 Family Practice I for Physician Assistant Students 6 s.h.
115:556 Family Practice II for Physician Assistant Students 6 s.h.
115:999 Special Studies off Campus Clerks; may include community hospitals.

**FREE RADICAL AND RADIATION BIOLOGY**

Director: Larry W. Oberley

Professors: Bradley Britigan, John Buatti, Garry R. Buettner, Larry W. Oberley, James W. Osborne, Michael E.C. Robbins


Associate professors: Frederick E. Domann Jr., John M. Buatti, James W. Osborne, Robert E. Domann Jr., Richard D. Hichwa, Mark T. Madsen, Douglas R. Spitz

Adjunct associate professors: Prabhat Goswami, Kynsloff, Geletzka

Graduate degrees: M.S., Ph.D. in Free Radical and Radiation Biology

Web site: http://www.radbiol.uiowa.edu/FRRB/

The free radical and radiation biology program provides in-depth training and research experience in the study of physical, chemical, and biological effects of radiation and the theory and widespread application of radiotrace methodology.

Another focus of the program is free radical biology. Free radicals, which are generated in great number by radiation, play a major role in the interaction of radiation with biological systems. Free radicals are of great interest to basic researchers and clinicians because of their role in a variety of diseases and pathological states, including cancer. The program stresses the importance of all of these areas to scientific research.
research, clinical medicine, and the general public’s health.

Undergraduate Study

Three courses, 077:103 Introduction to Radiation Biology and 077:107-108 Special Topics: Advanced Undergraduates, are open to undergraduate students in liberal arts or professional colleges. Students who choose to enter the Ph.D. program with emphasis in radiation biology, free radical biology, or related fields. Students may qualify for the M.S. degree with or without a thesis. The Ph.D. program is open to graduate students with a background in physics, chemistry, mathematics, biology, health sciences, veterinary medicine, or engineering. After completing the introductory course (077: 103) students typically concentrate on a particular aspect of the field. Some students elect to focus on radiation 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. Students must have at least one semester of experience as a teaching assistant and at least one semester as a research assistant. No registration is required and no academic credit is given for serving as a teaching assistant.

Special Programs

Postdoctoral training is available by arrangement with the program chair and individual faculty members.

Financial Support

Graduate students are supported as research assistants from funds available through research grants and contracts, or as teaching assistants from departmental funds. Individual postdoctoral awards also may be available and are applied for jointly by the candidate and his or her faculty sponsor.

Facilities

The Radiation Biology Program has two X-ray generators and other radiation sources, including a kilo-Curie Cs-137 irradiator. Students and staff also have access to other radiation sources, such as the Co-60 gamma source and linear accelerators in the Department of Radiology’s division of radiation oncology.

The program has a number of radiation detectors and counters, including gamma and liquid scintillation counters. The program 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; and facilities for preparing histological sections of tissues--fixed or frozen--and autoradiographs.

Courses

077:103 Introduction to Radiation Biology 4 s.h.

Characteristics and biological effects of ionizing radiations. Offered fall semesters. Consent of instructor required.

077:107 Special Topics: Advanced Undergraduates 1 s.h.

Readings and/or laboratory experience. Offered fall semesters. Consent of instructor required.

077:108 Special Topics: Advanced Undergraduates 1 s.h.

Readings and/or laboratory experience. Offered spring semesters. Consent of instructor required.

077:207 Seminar: Radiation Research 1 s.h.

Offered fall semesters.

077:208 Seminar: Radiation Research 1 s.h.

Offered spring semesters.

077:211 Medical Physics 4 s.h.

Characteristics of X-ray machines, nuclear accelerators, teletherapy devices; properties of X-rays and gamma rays, their interaction with matter; radiation exposure, dose measurement; radiation therapy. Offered fall semesters of even years. Prerequisite: 8 semester-hours of physics or consent of instructor. Same as 029:240.

077:222 Free Radicals in Biology and Medicine 4 s.h.

Chemistry of free radicals, antioxidant enzymes--their structure, function, regulation; targets of free radicals--lipids, proteins, DNA; free radicals in health and disease. Offered spring semesters of odd years. Prerequisite: 069:288.

077:223 Cellular and Molecular Radiobiology 4 s.h.

Recent advances in the understanding of radiation-induced changes in cellular and molecular aspects of normal cell function: application in selective modulation of normal and malignant tissue responses to anticancer therapies, especially radiation therapy. Offered spring semesters of even years. Prerequisite: 077:103 or consent of instructor.

077:288 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, chemical, viral, tumor immunology, anticancer therapies. Offered spring semesters of odd years. Consent of instructor required. Prerequisite: strong basic science background. Same as 069:288.

077:305 Research: Radiobiology arr.

077:306 Research: Radiobiology arr.

077:307 Special Topics arr.

077:308 Special Topics arr.


077:310 Thesis arr.

077:545 Topics in Free Radical Biology and Medicine 1 s.h.

New literature in area of free radicals. Offered fall semesters. Consent of instructor required.

077:546 Topics in Free Radical Biology and Medicine 1 s.h.

Offered spring semesters.

077:547 Topics in Radiation and Cancer Biology 1 s.h.

New literature on the biological effects of radiation and cancer biology. Offered fall semesters. Consent of instructor required.

077:548 Topics in Radiation and Cancer Biology 1 s.h.

Offered spring semesters.

Genetics

Graduate degree: Ph.D. in Genetics

Web site: http://genetics.uiowa.edu/phd

Faculty members and students in the College of Medicine participate in the Genetics Program. For information about the program, see the Graduate College section of the Catalog.

Immunology

Faculty members and students in the College of Medicine participate in the Immunology Program. For information about the program, see the Graduate College section of the Catalog.

Internal Medicine

Head: Francois M. Abboud


Clinical professor: Nathan Josephson


Associate professors: David C. Funk, Jeanne M. Smith

Clinical associate professors: John H. Brinkman,
### Residencies and Postgraduate Work

The department offers a residency training program in internal medicine. In addition, most of the department's specialty divisions offer clinical and research fellowships for periods of two to three years. These permit the development of special knowledge and skills relevant to the specialty. Postdoctoral fellows who have received their doctorates also are accepted for programs in which the major focus is laboratory research.

### Facilities

Teaching takes place in the medical services and in the laboratories of The University of Iowa Hospitals and Clinics in Iowa City, the Veterans Affairs Medical Centers in Iowa City and Des Moines, and Iowa Methodist Hospital in Des Moines.

### Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>078:100</td>
<td>Internal Medicine Elective for Physician Assistant Students</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>078:101</td>
<td>Clinical Internal Medicine</td>
<td>3 s.h.</td>
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<tr>
<td>078:102</td>
<td>Ambulatory Medicine</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>078:110</td>
<td>Internal Medicine Cardiology Elective for Physician Assistant Students</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>078:120</td>
<td>Health Communication Research Practicum</td>
<td>3 s.h.</td>
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<tr>
<td>078:130</td>
<td>Internal Medicine Elective (EKG) for Physician Assistant Students</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>078:140</td>
<td>Internal Medicine Elective for Physician Assistant Students Gastroentrology</td>
<td>3 s.h.</td>
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</tbody>
</table>
The Iowa Medical Scientist Training Program (MSTP) is a combined M.D./Ph.D. program that prepares trainees for careers in academic medicine, with emphasis on basic and clinical research. The program provides an effective means for integration of graduate education and doctoral research training with the full complement of clinical studies necessary for the medical degree. With few exceptions, requirements for the combined M.D./Ph.D. program can be completed in seven to eight years of continuous study.

### Curriculum

The program is designed to integrate the scientific approach and clinical medicine. In the first two years of the program, trainees enroll in the basic science and introductory clinical portions of the College of Medicine curriculum. This provides a broad exposure to the language and organizational concepts that form the foundation for a career as a physician scientist. They then begin the research component of the graduate phase of the program through summer laboratory rotations, research presentations by MSTP faculty and students, and a student-sponsored seminar series. Students also participate in MSTP grand rounds, a forum for patient-based discussions that emphasize how science and medicine intersect.

The first-year curriculum addresses normal structure and function of human organ systems and emphasizes relationships among different disciplines. During the first semester, trainees take courses in biochemistry, gross anatomy, cell biology, and medical genetics. The second semester presents an integrated systemic core, which incorporates physiology, histology, and embryology and focuses on the development, structure, and function of human organ systems. Discipline-specific basic science instruction continues through the second semester with the medical neuroscience course. The second-year curriculum emphasizes abnormal structure and function of human organ systems. Trainees take courses in pathology, microbiology, and pharmacology. Students receive instruction in the foundations of clinical practice, including patient experience in medical history taking and physical examination, throughout the first two years of study.

At the beginning of the third year, trainees select a research project based in a graduate department or interdisciplinary program. 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 Clinical Connections, a course that provides the opportunity for mentored clinical experiences and clinical case studies.

Upon completing the Ph.D. dissertation, trainees return to the College of Medicine curriculum to complete the clinical clerkship requirements appropriate to their career goals. During this phase, trainees bring to the clinical environment a sophistication in laboratory science that they apply to human disease problems. They also 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. degrees.

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 the basic science departments and spend a major part of their professional activity in biomedical research and teaching.

### Admissions

Applicants must meet requirements for admission to the College of Medicine and the Graduate College at The University of Iowa. Trainees are expected to 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, applicants must demonstrate aptitude for and commitment to scientific research, usually through productive research experience as undergraduates. Applicants normally are admitted to the first year of the program, but consideration also is given to individuals currently enrolled in the College of Medicine at The University of Iowa who request admission with advanced standing.

Application

The University of Iowa College of Medicine participates in the American Medical College Application Service (AMCAS). Program applicants should instruct AMCAS to forward their credentials to the College of Medicine (IA131). At the same time, applicants should request a separate MSTP application form from the program office. Applications should be submitted as early as possible to allow careful review by both the College of Medicine Admissions Committee and the Medical Scientist Training Program selection committee. All candidates must take the Medical College Admissions Test (MCAT), preferably in the spring and no later than the summer of the calendar year in which the application is submitted.

Application to the Graduate College is not required with the program application. Trainees admitted to the program receive assistance with Graduate College enrollment.

Financial Support

Trainees receive stipend and 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 and interdisciplinary programs. The program office also helps selected trainees apply for competitive national awards for outstanding academic and research achievement.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>050:211</td>
<td>MSTP Research</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>050:212</td>
<td>MSTP Clinical Connections</td>
<td>1 s.h.</td>
</tr>
</tbody>
</table>

Microbiology

Head: Michael A. Apicella
Professors: Michael A. Apicella, Robert F. Ashman
(Assistant Medicine), Gail A. Bishop (Internal Medicine), John E. Butler, Steven Clegg, Charles D. Cox, Lacy Daniels, Michael G. Feiss, David T. Gibson (Biochemistry Professor), E. Peter Greenberg, Charles Grose (Pediatrics), Caroline S. Harwood, William Johnson, David M. Lubaroff (Urology), Stanley Perlman (Pediatrics), Timothy L. Raffit (Urology), George V. Staufler, Mark F. Sinsky, C. Martin Stoltzfus, Jerold P. Weiss (Internal Medicine), Mary E. Wilson (Internal Medicine)

Associate professors: Emerit: John Cazin Jr., Louis G. Hoffmann, Erich W. Six, Donald P. Stahlh Adjunct professors: Brian F. Tack

Microbiology is 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 fraction of contemporary biochemical research employs microbiological and immunological methods.

Some research areas in which both practical and theoretical advances are occurring include the study of microbial species and viruses that infect animals, including man, plants, and other microbes; the use of 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.

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. For the graduate with a bachelor’s degree in microbiology, positions are available in government, hospitals, public health laboratories, research laboratories, and industrial laboratories (food, dairy, chemical, pharmaceutical, and genetic engineering companies).

Students who continue beyond the bachelor’s degree have more advanced career opportunities in these same areas as well as college and university teaching.

Undergraduate Program

The College of Liberal Arts administers undergraduate programs and grants undergraduate degrees in microbiology. See the College of Liberal Arts introductory section of the Catalog for general information about undergraduate study at the University.

Bachelor of Science

Undergraduate students majoring in microbiology at The University of Iowa must complete the General Education Program of the College of Liberal Arts. They must complete a minimum of 21 semester hours in microbiology to obtain a B.S. degree. Of these, at least 12 must be taken at The University of Iowa in courses numbered 061:147 and above. No more than 2 semester hours of 061:161 or 061:171 and 1 semester hour of 061:163 may be counted toward the 21 -semester-hour requirement. Students may count 061:218, but not 061:220, toward this requirement.

Students may take microbiology courses more advanced than 061:157 General Microbiology only if they receive a grade of C or above in 061:157 (and have the instructor’s consent for specified courses). Mathematics and science courses required by the department for the B.S. degree may not be taken pass/nonpass.

Microbiology Seminar (061:163) should be taken for credit only once during the senior year. Students are encouraged to take the course for 0 semester hours during other semesters after they have taken 061:157.

Microbiology majors must take the following in addition to required microbiology courses.

- 002:010-011 Principles of Biology I-II 8 s.h.
- 004:013-014 Principles of Chemistry I-II 8 s.h.
- 004:016 Principles of Chemistry Lab 2 s.h.
- 004:121-122 Organic Chemistry I-II 8 s.h.
- 004:141 Organic Chemistry Laboratory 8 s.h.
- 029:011-012 College Physics 8 s.h.
- 099:120 Biochemistry and Molecular Biology I 3 s.h.
- 099:130 Biochemistry and Molecular Biology II 3 s.h.

One of these:
- 22M:016 Calculus for the Biological Sciences 4 s.h.
- 22M:021 Calculus and Modeling I 4 s.h.
- 22M:025 Calculus I 4 s.h.
- 22M:035 Engineering Calculus I 4 s.h.
- 22M:045 Accelerated Calculus with Applications I 4 s.h.

In addition, the following courses are recommended.

- 08N:080 Nonfiction Writing 3 s.h.
- 22C:001 Survey of Computing 3 s.h.
- 22C:005 Problem Solving and Computing 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: 002:010; 004:013, 004:014, and 004:016; an approved calculus class; and at least one-quarter of the semester hours required for graduation

Before the fifth semester begins: 002:011; 004:121, 004:122, and 004:141; 061:157; and at least one-half of the semester hours required for graduation

Before the seventh semester begins: five more courses in the major and at least three-quarters of the semester hours required for graduation

Before the eighth semester begins: 10-12 more semester hours 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

Microbiology majors who are members of the University Honors Program may enroll in the honors program in microbiology. Honors students must have a grade-point average of at least 3.20 overall and in microbiology courses. The program requires 25 semester hours of course work in microbiology, including 6 semester hours in 061:171 Honors Undergraduate Research in Microbiology, which constitutes an introduction to experimental research. At the end of the research, students present a written report. Students who successfully complete these requirements receive the B.S. degree with honors.

Minor

An undergraduate minor in microbiology requires at least 15 semester hours of credit in microbiology courses with a grade-point average of at least 2.00. Of these 15 semester hours, at least 12 must be taken at The University of Iowa in courses numbered 061:147 and above.

No more than 2 semester hours of 061:161 or 061:171 and 1 semester hour of 061:163 may be counted toward the 15-semester-hour requirement. Students may count 061:218, but not 061:220, toward this requirement.

Graduate Programs

The College of Medicine administers graduate programs in microbiology; graduate degrees are granted through the Graduate College. See the College of Medicine introductory section and the Graduate College section of the Catalog for general information about study in medicine and graduate study at the University.

The objectives of the graduate programs in microbiology are to help students become highly qualified in research and in teaching of microbiology.

Five areas are included in the program: pathogenic bacteriology, microbial genetics, immunology, microbial physiology, and animal virology. Several of these specialized areas involve interdisciplinary training both within and outside of the department, so students receive broad experience during their course of study. Interdisciplinary Ph.D. programs in genetics, immunology and molecular biology are also available.

Students working for the Ph.D. may obtain an M.S. during their graduate work or proceed directly toward the Ph.D.

All students admitted as candidates for advanced degrees are expected to assist in departmental teaching.

Incoming students choose a research supervisor who serves as chair of their advisory committee. This committee assists students in planning a program of study and, from time to time, reviews students’ progress.

The department cooperates with other departments in the various colleges on campus, affording ample opportunity for students to avail themselves of diverse course offerings, seminars, and research programs. For example, courses and seminars in clinical laboratory microbiology, immunology, genetics, cellular and molecular biology, bioanalysis/biotechnology, and electron microscopy are taught on an interdepartmental basis.

Master of Science

Candidates for the M.S. are required to take a minimum of 12 semester hours of microbiology courses in three of the five different subdisciplines available in microbiology. Students may substitute a course taken previously (at The University of Iowa or elsewhere) for the course requirements, upon obtaining approval from the M.S. committee. Additional course requirements or selections 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.

Doctor of Philosophy

The minimum course requirements for the Ph.D. are one course in each of four subdisciplines (of the five subdisciplines available in microbiology) or 15 semester hours of course work in two different areas. Students may substitute a course taken previously (at The University of Iowa or elsewhere) for the course requirements, upon obtaining approval from the Ph.D. committee. Students also must pass a comprehensive examination and write a thesis based on their own research. The thesis must be defended satisfactorily in an oral examination.

Admission

Prospective graduate students should become familiar with the general admission requirements of the Graduate College. Departmental requirements include a review and formal vote by the faculty before students are admitted. Before beginning graduate work, students must have completed courses in biological sciences, chemistry (inorganic and organic), mathematics including calculus, and physics. Students admitted without the above course work must take it during the first year of graduate school. Students should have at least a 2.70 grade-point average to be admitted to the graduate program in microbiology. Preference is given to students applying for the Ph.D. program.

Facilities

The department shares the Bowen Science Building with the Departments of Anatomy and Cell Biology, Biochemistry, Pharmacology, and Physiology and Biophysics. Laboratory space and modern equipment are available for teaching and research.

Courses

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>061:000</td>
<td>Cooperative Education Internship</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>061:103</td>
<td>Principles of Infectious Diseases</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>061:112</td>
<td>Health Science Microbiology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>061:147</td>
<td>Survey of Immunology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:157</td>
<td>General Microbiology</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>061:161</td>
<td>Microbial Cell Structure and Function</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>061:165</td>
<td>Seminar: Microbiology</td>
<td>1 s.h.</td>
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</tbody>
</table>
061:164 Microbiology 4 s.h.
Emphasis on medical microbiology, principles of immunology. Consent of instructor required.

061:168 Introduction to Animal Viruses 2, 4 s.h.
Basic physical, chemical, biological properties of animal viruses, their association with human disease; optional laboratory with emphasis on methods in basic, clinical, and industrial virology. Consent of instructor required. Prerequisite: 061:157 with a grade of C or higher.

061:170 Microbial Genetics 3 s.h.
Genetics of bacteria, bacteriophages; laboratory supplement in 061:175. Prerequisite: 061:157 with a grade of C or higher or consent of instructor.

061:171 Honors Undergraduate Research in Microbiology arr.
Experimental research under faculty supervision. May be repeated. Junior or senior standing and grade-point average of at least 3.20 required.

061:175 Microbial Genetics laboratory 3 s.h.
Basic principles of genetic analysis of bacteria and bacteriophage. Consent of instructor required. Pre- or corequisite: 061:170.

061:180 Microbiological Laboratory 2 s.h.

061:188 Microbiological Biotechnology 3 s.h.
Industrially relevant microbiology; molecular biology, fermentation, cell culture, downstream processing; overview of industrial organisms; processes to make enzymes, bulk chemicals, antibiotics; safety, economic, regulatory aspects. Prerequisite: 061:157 with a grade of C or higher.

061:201 Immunology I 3 s.h.
Ontogeny, activation, and function of T lymphocytes, B lymphocytes; mechanisms of immunologic tolerance; major histocompatibility complex; antigen presentation; emphasis on experimental methods for analysis of these processes. Prerequisites: college biology, genetics, general chemistry, and organic chemistry. Same as 148:201.

061:202 Immunology II 3 s.h.
Immunoglobulin molecular mechanisms, genetic regulation, generation of antigenic diversity, ligand-receptor interactions, cell signaling; immune effector mechanisms, including cytokines; T cells, natural killer cells, macrophages, neutrophils, complement; adhesion molecules; cell migration and homing; emphasis on experimental, approaches. Prerequisite: 061:201 or 148:201. Same as 148:202.

061:207 Advanced Topics in Immunology 3 s.h.

061:210 Molecular Biology I 4 s.h.
Mechanism, regulation of RNA, DNA, protein biosynthesis in prokaryotes; emphasis on experimental methods for biochemical, genetic, and recombinant DNA analysis of these processes. Prerequisites: 002:128, and 009:130 or equivalent. Same as 142:210.

061:217 Graduate Immunology Seminar 1 s.h.
Current University of Iowa research.

061:218 Electron Microscopy Techniques 3 s.h.
Methods of tissue preparation for transmission, scanning electron microscopy; fixation, embedding, ultrathin sectioning and staining; theory, use, maintenance of electron microscopes; associated photographic techniques; advanced techniques such as immun EM, freeze-fracture. Consent of instructor required. Prerequisite: a biological science course. Same as 002:218, 009:218.

Individually designed projects, library searches, seminar and workshop participation. Consent of instructor required. Prerequisite: introductory EM course. Same as 002:220, 009:220.

061:250 Topics: Bacterial Molecular Pathogenesis 2 s.h.
Molecular mechanisms of virulence factors, including genetic regulation; role of bacteria in disease production, control of virulence gene expression. Consent of instructor required. Same as 148:250.

061:259 Graduate Pathogenic Bacteriology 5 s.h.
Pathogenic bacteria, with emphasis on mechanisms of pathogenicity; laboratory methods for isolation, identification; laboratory emphasis on advanced methods for study of pathogenic bacteria; research literature. Consent of instructor required. Prerequisite: 061:257 with a grade of C or higher. Same as 148:259.

061:260 Graduate Microbial Physiology 3 s.h.
Microbial cell structure and function, growth, energy metabolism, biosynthesis, control mechanisms; supplementary laboratory work in 061:280. Prerequisites: 061:157 with a grade of C or higher and a biochemistry course.

061:261 Graduate Research in Microbiology arr.
Open only to advanced degree candidates in microbiology. Consent of instructor required.

061:263 Graduate Student Research Seminar 1 s.h.
Presentation of thesis work in progress. Open only to microbiology graduate students.

061:268 Biology and Pathogenesis of Viruses 3 s.h.
Molecular biology of animal DNA and RNA viruses; interaction of these viruses with eukaryotic cells; mechanisms of viral latency, persistence, cellular transformation, oncogenesis. Open only to biological science majors. Prerequisite: 061:170 or equivalent, or a course in biochemistry. Same as 148:268.

061:270 Graduate Microbial Genetics 3 s.h.
Genetics of bacteria, bacteriophages; supplementary laboratory work in 061:271. Prerequisite: 061:157 with a grade of C or higher.

061:271 Graduate Microbial Genetics Laboratory 3 s.h.
Basic principles of genetic analysis in bacteria. Consent of instructor required. Pre- or corequisite: 061:270.

061:275 Perspectives in Biocatalysis 1 s.h.
Applied enzymology, protein design, structure-activity relationships, biosensor technology, microbial transformations, biodegradation of environmental pollutants. May be repeated. Same as 004:275, 046:275, 052:275, 053:275, 099:275.

061:279 Bacterial Diversity 4 s.h.
Isolation, cultivation of bacteria from various habitats; physiological, genetic and biochemical properties of bacterial groups. Consent of instructor required. Prerequisites: a grade of C or higher in 061:157, and 061:160 or 061:170 or equivalent.

061:280 Graduate Microbial Physiology Laboratory 2 s.h.
Isolation and growth of bacteria, bacterial function products, nutrient transport, metabolic pathways, enzymes. Consent of instructor required.

061:288 Graduate Microbial Biotechnology 3 s.h.
Industrially relevant microbiology; molecular biology, fermentation, cell culture, downstream processing; overview of industrial organisms; processes to make enzymes, bulk chemicals, antibiotics; safety, economic, regulatory aspects. Major in microbiology or consent of instructor required.

MOLECULAR BIOLOGY

Faculty members and students in the College of Medicine participate in the Molecular Biology Program. For information about the program, see the Graduate College section of the Catalog.

NEUROLOGY

Head: Antonio R. Damasio
Professors: Harold F. Adams Jr., Adel Affifi (Pediatrics/Anatomy and Cell Biology), Kevin Campbell (Physiology and Biophysics), Antonio R. Damasio, Hanna Damasio, Jun Kimura, Ramon Lim, Matthew Rizzo, Kathleen Rockland, Robert Rodzitsky, William Talman, Daniel Trenel (Psychology), Gary Van Hoesen (Anatomy and Cell Biology), Michael Wall (Ophthalmology and Visual Sciences), Thori Yamada
Professors emeriti William E. Bell (Pediatrics), Arthur L. Benton (Psychology), Richard Fincham
Adjunct professor: Charles Rockland
Associate professors: Patricia Davis, Beverly Davidson (Internal Medicine), M. Erie Dyken, Thomas Grabowski, Matthew Howard (Surgery), Andrew Lee (Ophthalmology and Visual Sciences), Katherine D. Mathews (Pediatrics), June Paulsen (Psychiatry), E. Toque Shippou
Assistant professors: Ralph Adolphs, Steven Anderson, Ed Aul, Antoine Bechra (Anatomy and Cell Biology), Daniel Bonthus (Pediatrics), Greg Cooper, Lynn Geweke, Mark Granner, Henry Paulson, Jon Timpin, Malcolm Yeh
Adjunct assistant professors: Joseph Barrash, Robert D. Jones, Asgar Zahir
Associate: Deena Fattal, Josef Parviz
Postdoctoral associates, fellows: John Allen, Zakaria Ammache, Gerald Eichorn, Hiroto Kawasaki, Coleman Maris, Mehrdad Razavi, Ahmed Sharla, Muhammad Shoaib, Muhammad Zaidi

Neurology is the branch of medical science concerned with diagnosis and management of disorders of the brain, spinal cord, peripheral nervous system, and muscle. Teaching of medical, postdoctoral, and graduate students, carefully integrated with patient care, have long been the department’s hallmark.

The department offers clinical and clinical research training to third- and fourth-year medical students, contributing to the Doctor of Medicine degree. An active, three-year approved residency program qualifying physician trainees for board certification in neurology is a major aspect of departmental activity; experience in clinical electrophysiology, pediatric neurology, psychiatry, and neuropsychology is part of this training. The department also offers research opportunity in various fields of neuroscience, including neuropsychology, neuroimaging, and neuroanatomy, to candidates for the Doctor of Philosophy in neuroscience and psychology.

Investigative interests of the faculty 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-ophtalmology, movement disorders, and pain management.

Courses

064:011 Clinical Neurology 2, 4 s.h.
Ward teaching and bedside examinations in small groups.

064:100 Neurology Elective for Physician Assistant Students arr.

064:238 Introductory Neuropsychological Assessment arr.
Standard behavioral assessment procedures; administration of neuropsychological tests under supervision; preparation of integrated reports on collected data; involvement in research project.
NEUROSCIENCE

Faculty members and students in the College of Medicine participate in the Neuroscience Program. For information about the program, see the Graduate College section of the Catalog.

NUCLEAR MEDICINE TECHNOLOGY

Director: Anthony W. Knight
Medical director: Michael M. Graham
Technical director: John A. Bricker
Professors: Michael M. Graham, Peter T. Kirchner
Professor emeritus: Frank H. Chen
Associate professors: David L. Bushnell, Maleah Grover-McKay, Richard Hiehwa, Daniel Kahn, Mark T. Madsen, G. Leonard Watkins
Associate professor emeritus: Karim Reza
Clinical associate professor: James A. Ponto (Pharmacy)
Adjunct lecturer: Anthony W. Knight
Undergraduate degree: B.S. in Nuclear Medicine Technology

The Nuclear Medicine Technology Program is one of five academic units in the Division of Associated Medical Sciences. For detailed information on the division's general academic policies, see "Division of Associated Medical Sciences" in this Catalog.

Nuclear medicine technology is a medical specialty that uses radioactive tracers for diagnostic, therapeutic, and research purposes.

Nuclear medicine technologists generally work in hospitals and clinics. At the heart of nuclear medicine technology is the use of sophisticated detectors and computers to trace the movement and localization of radioactive tracers in the human body.

Other basic job responsibilities may include radiation safety; quality control; radiopharmaceutical preparation and administration; and collection and preparation of biological specimens to measure levels of hormones, drugs, or other body components. In all these functions, the nuclear medicine technologist works hand-in-hand with nuclear medicine physicians, health physicists, radiopharmacists, and radiochemists as an integral part of a highly trained specialty team.

The Nuclear Medicine Technology Program at The University of Iowa is fully accredited by the Joint Review Committee on Educational Programs in Nuclear Medical Technology (JRCNMT). Fulfillment of the requirements established by the JRCNMT Accreditation Board involves three years of preclinical work in the College of Liberal Arts and the College of Medicine, and a minimum of 12 months of professional clinical experience, available at The University of Iowa Hospitals and Clinics and the Iowa City Veterans Affairs Medical Center.

Upon satisfactory completion of the four-year program, students receive the Bachelor of Science from the College of Medicine and a certificate of training. Graduates then are eligible for national certification as nuclear medicine technologists.

The required courses in the first and sophomore years emphasize the physical and biological sciences, which provide a basic background for further development in the junior year.

Applicants are strongly advised to pursue a course of study that is applicable to a baccalaureate degree, most commonly in biology, chemistry, biochemistry, or microbiology. In this way, students who are not admitted to the nuclear medical technology program can complete a degree in their chosen area.

The following are recommended courses.

FIRST YEAR

004:013-014 Principles of Chemistry I-II 6 s.h.
004:016 Principles of Chemistry Lab 2 s.h.

SOPHOMORE YEAR

002:100-011 Principles of Biology I-II 8 s.h.
029:011-012 College Physics 8 s.h.

JUNIOR YEAR

060:001 Principles of Human Anatomy 3 s.h.
072:130 Systemic Physiology 4 s.h.

One of these:
22C:001 Survey of Computing 3 s.h.
22C:005 Problem Solving and Computing 3 s.h.
22C:016 Computer Science I 4 s.h.

One of these:
22S:025 Elementary Statistics and Inference 3 s.h.
22S:101 Biostatistics 3 s.h.
171:161 Introduction to Biostatistics 3 s.h.

Advanced courses in chemistry, biology, or physics based on alternative major, possible minors, interest, and career goals

SENIOR YEAR

The curriculum of this clinical year is organized in accordance with the "Essentials of an Accredited Educational Program in Nuclear Medicine Technology." Courses are taught in the following areas: radiopharmacy, radiology, radiomunology, radiation protection, patient care, medical terminology, anatomic and physiologic bases of nuclear medicine procedures, physics and instrumentation, administration and management, medical and professional ethics, mathematics and statistics of nuclear medicine, and computer applications in nuclear medicine. Clinical rotations focus on nuclear imaging, clinical radiopharmacy, computer applications, and quantification of radioactivity in vivo and in vitro, including kinetic studies.

The clinical year consists of these courses.

074:101 Principles of Nuclear Medicine I 6 s.h.
074:102 Introductory Clinical Nuclear Medicine 6 s.h.
074:103 Principles of Nuclear Medicine II 3 s.h.
074:104 Intermediate Clinical Nuclear Medicine 9 s.h.
074:105 Advanced Clinical Nuclear Medicine 6 s.h.

For course descriptions, see "Radiology" in this section of the Catalog.

Admission

Prerequisites for admission to the Nuclear Medicine Technology Program include the following:

- a minimum of 94 semester hours in all course work, with a cumulative grade-point average of at least 2.50;
- fulfillment of the College of Liberal Arts General Education Program requirements in rhetoric, foreign language, interpretation of literature, humanities, historical perspectives, quantitative or formal reasoning, social sciences (sociology and psychology are recommended), and distributed general education;
- a minimum of 20 semester hours in three science areas, including a complete introductory course with laboratory in chemistry, physics, and biology; and
- a minimum of 3 semester hours in mathematics, including at least elementary functions.

Fulfillment of these basic admission requirements does not ensure acceptance into the Nuclear Medicine Technology Program.

A new class begins in late August each year. Application materials must be received by March 1. Personal interviews are scheduled in March and the class is selected by April 15. At present, class size is limited to eight students. Prospective students are encouraged to consult with the program office to plan an appropriate preprofessional program.
OBSTETRICS AND GYNECOLOGY

Head: Jennifer R. Niebyl
Professors: Barrie Anderson, Jo Ann Benda (Pathology), Richard E. Bulkley, Rudolph P. Galask (Microbiology), Susan R. Johnson, Jennifer K. Niebyl, Joel J. Sorsky, Craig H. Syrop, Roger A. Williamson, Frank J. Zlatnik
Clinical professors: Robert M. Kretzschmar, David W. Wettich
Associate professors: Ingrid E. Nygaard, Asha Rijhsinghani, Bradley Van Voorhis, Jerome Yankowitz
Associate professors (clinical): Noelle C. Bowdler, W. Wetcich
Assistant professors: Kevin Ault, Stephen K. Hunter, Anil K. Sood
Assistant professors (clinical): Wendy Hansen, Ann Lariv
Web site: http://obgyn.uiuc.edu

Medical Student Training

Courses in obstetrics and gynecology are designed to give M.D. students a comprehensive survey of reproductive medicine. This is done through a series of didactic lectures, inpatient and outpatient assignments, ward rounds, teaching seminars, and special elective courses.

The third-year clerkship (066:004 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 students a variety of electives that provide advanced training in the special areas of obstetrics and gynecology. In addition to clerkships at The University of Iowa Hospitals and Clinics, these elective include a rotation at the Gunderson Clinic, La Crosse, Wisconsin, and other arranged off-campus courses.

Residency

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 various divisions and clinical services of the department and care for both hospital inpatients and outpatients. Training is provided in normal and abnormal obstetrics, gynecologic surgery, office gynecology, ultrasound, reproductive endocrinology, gynecologic oncology, family planning, and endoscopic procedures.

Courses

066:004 Clinical Obstetrics and Gynecology  arr.

066:006 High Risk Antepartum Obstetrics Subinternship

Subinternship: Experience in evaluating new patients in high-risk obstetric clinic; continuing antepartum care; doing work-up, ordering diagnostic studies, and following complicated patients admitted to obstetric ward; assisting in diagnostic, therapeutic procedures such as fetal heart rate testing, amniocentesis, ultrasonography, intrauterine fetal transfusion.

066:010 Gynecologic Oncology arr.

066:013 Reproductive Endocrinology Subinternship

Subinternship: Experience in developing proficiency in special history taking and physical exams for gynecologic patients; focus on outpatient gynecology, diagnostic techniques and therapy, family planning, techniques for early detection of gynecologic cancer.

066:110 Obstetrics for Physician Assistant Students

Special Studies on Campus

066:998 Special Studies on Campus

066:999 Special Studies off Campus

OPHTHALMOLOGY AND VISUAL SCIENCES

Head: Thomas A. Weingeist


Associate professors: H. Culver Boldt, Randy H. Kardon, Keith D. Carter, Steven R. Russell, A. Tim Johnson, Andrew R. Lee

Assistant professors: Hilary A. Beaver, Young Kwon, Thomas A. Getting, Christine W. Sintd, Mark E. Wilkison

Professors emeriti: Janet E. Swerts, Stuart L. Weinstein

Web site: http://webeye.opth.uiowa.edu

Ophthalmology is a medical and surgical specialty concerned with the diagnosis and treatment of diseases of the eye and its adnexa. The department combines postgraduate training with research and patient care in all aspects of the visual sciences. Subspecialties represented in the department include cataract surgery, cornea and external diseases, contact lens and refraction services, genetics and molecular biology, glaucoma, laser refractive surgery, low vision, neuro-ophthalmology, ocular plastics, ocular echography, ocular pathology, ocular vascular diseases, photopic ophthalmic vision and retinal disorders.

The department offers clinical and research training to medical students contributing to the Doctor of Medicine degree and limited graduate studies leading to a Ph.D. in cell biology, molecular biology, and genetics. 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.

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 The University of Iowa Hospitals and Clinics in the Pomerantz Family Pavilion and at the Veterans Affairs Medical Centers in Iowa City and 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 department houses The University of Iowa Center for Macular Degeneration.

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.

Courses

067:100 Elective in Ocular Pathology 4 s.h.
067:101 Elective in External Eye Disease 4 s.h.


067:103 Elective in Pediatric Ophthalmology arr.

067:105 Introduction to Clinical Ophthalmology arr.


067:111 Clinical Ophthalmology 2 s.h.

067:112 Elective in Ocular Genetics 1 s.h.

067:998 Special Studies on Campus

067:999 Special Studies off Campus

ORTHOPAEDIC SURGERY

Head: Joseph A. Buckwalter

Head: Ignacio V. Porseti

Clinical professor: Richard C. Johnston

Associate professors: Phyllis Chang, Ernest Found, Phyllis Fong, Richard C. Johnston, Stewart L. Maynard, Thomas Oettinger, Andrew Pontrelli, Joseph A. Buckwalter

Clinical assistant professors: Donald W. Blair, Mark E. Marsh, Jerry A. Maynard, James Nepola, Curtis Stayers, Stuart L. Weinstein

Web site: http://orthosurg.uiowa.edu

The department offers two types of postgraduate training. The first is a five-year integrated clinical program, in which interns and residents participate simultaneously in inpatient and outpatient care, surgery, and sciences related to...
the neuromusculoskeletal system. The second is a six-year program for those interested in full-time academic orthopaedic careers.

**Clinical Program**

Trainees enter this program directly from medical school through the National Internship Matching Plan. During the first year, trainees gain experience not only in clinical orthopaedics but also in medicine, pediatrics, neurology, surgical specialties, intensive care, anesthesia, and other services. During the following years, residents gain experience in trauma, musculoskeletal oncology, children’s orthopaedics, adult orthopaedics, neuromuscular disorders, rehabilitation, prosthetics and orthotics, rheumatology, and basic science as related to orthopaedics. They take specialized courses in anatomy, bone histology, biochemistry, physiology, and pathology. A weekly seminar covers biomechanics, kinesiology, and selected clinical subjects.

**Academic Orthopaedics Program**

In addition to the training described above under the clinical program, this program includes an additional one or two years of research in any field in which the resident is interested, provided it is related to the musculoskeletal system. It may be done in one of the orthopaedic laboratories or in a basic science department.

**Laboratories**

The orthopaedic laboratories deal with problems in these major subject areas.

- **Biochemistry:** the biochemistry of proteoglycans, collagens, and matrix proteins, both normal and those 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).
- **Cell and molecular biology:** studies of normal bone, cartilage, tendon, and muscle, and of tissues altered by experiment and disease.

**Facilities**

The department is housed in the John Pappajohn Pavilion of The University of Iowa Hospitals and Clinics and has an active service in the Veterans Affairs Medical Center. Facilities include 48 orthopaedic beds, 5 outpatient clinics, inpatient and outpatient operating rooms, a specialty library, a specialty radiology unit, and physical therapy and rehabilitation facilities.

Specialty clinics deal with disorders such as 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 175 patients per day. Approximately 4,000 major operations are performed each year under the auspices of the department.

The department provides consulting service to University Hospital School, Regional Child Health Specialty Clinics, and two state schools for the mentally retarded.

**Courses**

Courses numbered 201 through 999 are open only to senior medical students.

- 076:002 Clinical Orthopedics
- 076:102 Orthopedics Elective for Physician Assistant Students
- 076:201 Advanced Clinical Orthopedics
- 076:202 Musculoskeletal Trauma
- 076:204 Orthopaedic Surgery, Des Moines VAMC
- 076:998 Special Studies on Campus
- 076:999 Special Studies off Campus

**OTOLARYNGOLOGY-HEAD AND NECK SURGERY**

Head: Bruce J. Gantz
Associate professors: John W. Canady, Phyllis Chang, Gerry F. Funk, Steven H. Green, Michael P. Kamei, Timothy M. McCulloch, Jay Rubinstein
Assistant professors: Al S. Ayl, Nancy M. Bauman, Margaret M. Browning, Scott M. Graham, Steven H. Green
Clinical assistant professor: Peter L. Alt
Clinical instructors: Phillip C. Lee, Russell E. Schurtz
Web site: http://www.medicine.uiowa.edu/otolaryngology

The department provides one of the oldest and largest otolaryngology-head and neck surgery training programs in the world. Currently it has a full-time faculty of 17, including several members from plastic surgery and speech pathology and audiology.

The department’s main objective is to provide a high-level instructional program in otolaryngology-head and neck surgery for medical students and residents. To maintain a teaching program, the department’s faculty and staff carry a large patient load in head and neck oncology, head and neck plastic reconstructive surgery, facial trauma, craniofacial congenital defects (such as cleft lip and palate), otology/neurotology and skull base tumors, pediatric and geriatric hearing problems, voice problems, peroral endoscopy, surgery for deafness (including cochlear implant), general pediatric otolaryngology, and all the areas usually considered otolaryngologic.

There are eight divisions in the department that make this program comprehensive: otology/neurotology and skull base surgery, plastic and reconstructive surgery of the head and neck, oncologic surgery of the head and neck, rhinology, pediatric otolaryngology, craniofacial defects, speech pathology and audiology, and research.

Another major objective of the department is to foster research programs designed to yield new knowledge in the field and provide models for student and resident research training.

There are several large-scale research programs within the department in cleft palate and other craniofacial defects, head and neck oncology, cochlear implants, nasophysiology, facial nerve conduction, microvascular reconstructive surgery, anatomy of the temporal bone, neuroelectric audimetry, molecular biology of the auditory system, electrophysiology of the auditory system, psychoaustics, and molecular genetics.

Many of these research programs receive federal and private financial support.

**Residency Program**

The residency program in otolaryngology is in accord with the requirements of the American Board of Otolaryngology and ACGME Residency Review Committee on Otolaryngology-Head and Neck Surgery. It consists of a four-year course of basic and clinical science. The basic science lectures and laboratory studies are conducted during the first three and one-half months of residence.

After passing an oral and/or written examination, students enter the clinical phase of the course, which includes supervised clinical and operative work, clinical conferences, and seminars pertinent to the practice of otolaryngology and its related fields.

An alternative research and clinical track is also available. Following one year of general surgery, residents may elect to enter a two-year research training fellowship followed by a four-year clinical residency. The research training fellowship is funded by an NIH National Research Service Award.

**Fellowships**

Two-year clinical fellowships in otology/neurotology and pediatric otolaryngology comply with and are accredited by the ACGME. A head and neck oncology fellowship is accredited by the Joint Council on Head and Neck Surgery.

**Courses**

- 068:003 Clinical Otolaryngology 2 s.h.
- 068:100 Clinical Internship in Otolaryngology arr.
Master of Science

The M.S. program in pathology is open to students with various educational backgrounds. The department particularly encourages applications from students with Bachelor of Science degrees in chemistry, biochemistry, biology, zoology, and medical technology, and from students with medical and dental degrees.

The program is flexible, but the department emphasizes two tracks, one to provide a research background for academically oriented students in the medical sciences, the other for medical technologists who want to advance their training, usually by subspecialization in an area of laboratory medicine.

M.S. students participate in teaching, patient care, and research through the instructional programs of the department, the service laboratories of the department and The University of Iowa Hospitals and Clinics, and faculty members’ research laboratories.

Admission to the M.S. program requires a grade-point average of at least 3.00 in science courses, a Graduate Record Examination (GRE) General Test combined verbal and quantitative score above 1200, and a personal interview.

Residency

The department approves 20 residency positions in pathology, covering a training span of up to five years. The programs are designed to utilize the patient population of The University of Iowa Hospitals and Clinics and the Veterans Affairs Medical Center.

There is systematic rotation through the various laboratory services, including surgical pathology, autopsy pathology, neuropathology, cytology, clinical chemistry, clinical microbiology, hematology, immunopathology, and transfusion medicine. There also is opportunity for one to three years of additional fellowship training in most pathology subspecialties.

Medical Student Fellowships

The department provides six 12-month medical student fellowships and a variable number of clerkships for medical students in any of the areas of anatomical and clinical pathology. One of the fellowships is a full-time research position in some facet of experimental pathology; the other five are primarily in anatomic pathology.

Postgraduate and Postdoctoral Training

The Department of Pathology offers postgraduate clinical fellowship programs in hematopathology, immunopathology, transfusion medicine, clinical microbiology, cytopathology, neuropathology, and surgical pathology for physicians who have completed residency training in pathology. These fellowships consist of one to two years of diagnostic work and up to two years of laboratory research.

The department provides postdoctoral research training in immunology, neuropathology, biochemistry of hemostasis, cancer biology, and clinical microbiology as well as in other areas of cellular and molecular pathology. These positions are open to individuals with either Ph.D. or M.D. degrees.

Facilities

The Department of Pathology is well-equipped to carry out the sophisticated technology of modern cellular and molecular pathology. It administers over 90,000 square feet of clinical laboratories of The University of Iowa Hospitals and Clinics and has individual research and core facility laboratories, including laser capture microscopy for cellular and molecular pathology research, in the Medical Research Center, Medical Laboratories, and at the Veterans Affairs Medical Center. Also available are the College of Medicine Core Laboratories 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

069.118 Phlebotomy for Clinical Laboratory Sciences

1 s.h.
Experience in phlebotomy techniques. Open only to clinical laboratory sciences/medical technology students. Consent of instructor required.

069.119 Clinical Laboratory Instruments and Techniques

3 s.h.
Theory, practice of instrumentation used in clinical laboratories. Open only to clinical laboratory sciences/medical technology students. Offered summer sessions. Prerequisites: 069.010, 069.011, and 069.121.

069.120 General Clinical Laboratory Concepts and Techniques

4-6 s.h.
Microbiology, immunology, and hematology concepts and techniques in the clinical laboratory. Open only to clinical laboratory sciences/medical technology students. Offered summer sessions. Prerequisites: 061.017, 072.015 or 072.120, and 099.110.

069.121 Introduction to Clinical Practice

1 s.h.
Limited rotation through a clinical laboratory. Prerequisites: 069.119 and 069.120.

069.122 Chemistry for Clinical Laboratory Science

4 s.h.
Theory, practice of analytical biochemistry applied to disease states; methodology, automation, reagent preparation. Prerequisites: 069.122 or 099.110; 069.119 and 069.120; and 072.130 or 072.150.

069.123 Immunohematology for Clinical Laboratory Science

3 s.h.
Theory, practice of blood banking; donor services. Prerequisites: 004.121, 069.119, 069.120, and 069.136.

069.124 Hematology for Clinical Laboratory Science

4 s.h.
Theory, practice of hematology as applied to disease states; methodology, automation, reagent preparation. Prerequisites: 004.121, 069.119, 069.120, and 069.136; and 072.130 or 072.150.

069.125 Microbiology for Clinical Laboratory Science

4 s.h.
Theory, practice of laboratory microbiology applied to pathogenic microorganisms, including bacteria, parasites, fungi, viruses. Prerequisites: 069.119, 069.120, 069.121, and 069.136.

069.126 Clinical Chemistry and Body Fluids

4 s.h.
Rotation through clinical laboratory sciences. Prerequisites: 069.119, 069.120, 069.122, and 069.124.

Clinical Microbiology, Parasitology laboratories. Prerequisites: 069:119, 069:120, and 069:125.

Clinical Immunology and Molecular Pathology laboratories. Prerequisites: 069:122, 069:123, 069:124, and 069:125.

Clinical Laboratory Medicine for Physician Assistants 1 s.h.

Therapy and practice of selected clinical laboratory techniques, procedures; emphasis on effective use of clinical laboratory in the diagnosis, management of disease. Open only to physician assistant students.

Clinical Laboratory Science Seminar 1-2 s.h.

Open only to senior clinical laboratory sciences students.

CIS Management Topics and Projects 1, 2 s.h.


Introduction to Human Pathology 5 s.h.

Mechanisms of disease; etiology, pathogenesis, epidemiology, and major clinical morphologic manifestations of disease by organ systems. Open only to second-year medical students or to graduate students with consent of instructor.

Research in Laboratory Science 1 s.h.

Open only to clinical laboratory sciences/medical technology students.

General and Systemic Pathology 9 s.h.

Mechanisms of disease; etiology, pathogenesis, epidemiology, and major clinical morphologic manifestations of disease by organ systems. Open only to medical students or to graduate students with consent of instructor.

Special Topics in Pathology 1 s.h.

Open only to medical students or to graduate students with consent of instructor.

Topics in Laboratory Medicine and Pathology 1 s.h.

Issues in appropriate use of clinical laboratory and pathology resources in the primary care setting; case-based approach. Open only to third- and fourth-year medical students.

Autopsy Pathology Clerkship arr.

Admission requirements for the pathology residency program: a minimum of one year as a pathology resident or as a staff pathologist is required.

Hematopathology Clerkship arr.

Surgical Pathology Clerkship arr.

Blood Bank Clerkship arr.

Clinical Immunology and Immunopathology: Laboratory and Clinical Correlations 4 s.h.

Experience in immunopathology lab, allergy-immunology clinics; conferences, follow-up of lab requests, abnormalities. Open only to third- and fourth-year medical student. Same as 078:253.

Molecular and Cellular Biology of Cancer 3 s.h.

Biological features, population characteristics; cell biology, molecular, nuclear, and viral carcinogenesis; immunology of neoplasia, with emphasis on in-depth analysis, supporting literature. Consent of instructor required. Prerequisite: strong basic science background. Same as 077:288.

Clinical Student Fellowships in Pathology (Externships) arr.

First-hand experience in autopsy, surgical and clinical pathology, teaching, and research to further understanding of disease mechanisms, normal and pathologic anatomy, laboratory use.

Warner Fellowship in Experimental Pathology arr.

One-year, full-time membership in established research laboratory in the Department of Pathology or collaborating laboratory. Open only to medical students.

Special Studies on Campus arr.

Special Studies off Campus arr.

PEDIATRICS

Head: Frank H. Morris Jr.


Clinical professor: David T. Alexander


Associate professors (clinical): Brenda Cruikshank, Michael Kelleher, Jeffrey Lobas, Thomas Loew, Jill Morris, Craig Porter, Mary Ann Roberts, Jeffrey Smith

Adjunct associate professor: Gary Sasso (Curriculum and Instruction)


Assitant professors: Daniel Bonthius, John Dagle, Donna D’Alessandro, Erik Edens, Carrie George, Fred Lamb, Jessica Moreland, Brian Schulte


Adjunct assistant professor: Elena Semina


Associates: Alifiee Ue, Jorge DiPaolo

Fellow associate: Dan Brink

Clinical instructor: Rizwah Shah

Web site: http://www.vh.org/Welcome/UIHC/UIHCMedDepts/Peds/PedsHome.html

The Department of Pediatrics has designed its educational program to provide a solid foundation for students and those seeking postgraduate training. Extensive opportunities for general pediatrics and the subspecialties are available.

Affiliated programs in the Divisions of Maternal and Child Health-Iowa State Department of Health, Regional Child Health Specialty Clinics, University Hospital School, Blank Children’s Hospital (Des Moines), and community sites add depth to the educational program in community pediatrics and primary care.

Medical Student Training

Didactic lectures and physical examination of the newborn, toddler, and older child provide students with their initial pediatric patient contact. This experience includes taking a history, performing a physical examination, appraisals of growth and development, nutrition and symptomatology of the newborn, toddler, and adolescent.

For the junior and senior medical student, the inpatient service provides an opportunity for training in the complex problems of disease and critical illness. There are daily rounds involving general pediatrics and all subspecialties.

Challenging and interesting cases are presented to the staff for discussion of diagnosis and treatment.

Outpatient experience, available in the junior clerkship and senior electives, stresses principles and practices required for the maintenance of health in children, treatment of common general pediatric disorders, and the diagnosis and treatment of subspecialty ambulatory patients.

Residency, Fellowships

The Department offers an accredited three-year residency program designed to prepare each trainee for a professional career in the broad field of pediatrics. The program meets the eligibility requirements of the American Board of Pediatrics (ABP).

Fellowships are available in many subspecialties as well as in the major subdivisions of pediatrics. The programs are research and clinically oriented, encouraging development of knowledge and skill in the chosen discipline. Upon satisfactory completion of the program, fellows meet the eligibility requirements of the ABP in the subspecialty.

Facilities

The Department of Pediatrics is located in the Children’s Hospital of Iowa at The University of Iowa Hospitals and Clinics, with inpatient and outpatient areas immediately adjacent to faculty offices and the pediatric library.

The 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 the Emergency Treatment Center.

Laboratories performing both clinical and research studies are maintained in the department.
The University Hospital School is available for children with developmental disabilities, cerebral palsy, or mental retardation.

**Courses**

070:002 Clinical Pediatrics 6 s.h.
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. Open only to third-year medical students.

070:013 Subinternship in Pediatrics: Blank Children's Hospital, Des Moines arr.
Experience in the care of general pediatric inpatients; daily rounding and teaching by resident and faculty; daily didactic conferences. Open only to senior medical students.

070:014 Emergency Room Blank Children's Hospital, Des Moines arr.
Experience of basic knowledge of pediatric emergencies and urgent care, proficiency in pediatric medicine procedures.

070:015 Blank Children's Hospital, Des Moines arr.
Work in a community-based hospital; care of patients in daily practice and in special problems referred to children's hospital.

070:016 Pediatric Hematology arr.
Basic concepts; clinical approach to hematological problems, tumors in children.

070:017 Pediatric Neurology arr.
Participation in outpatient and inpatient activities, teaching, morning ward rounds.

070:019 Pediatric Cardiology arr.
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.

070:022 Infant and Child Development 4 s.h.
Normal development sequence of gestation and early childhood, impact of environmental influences; antecedents of developmental disabilities; methods to detect cognitive, motor delays in preschool child; long-term consequences of developmental disabilities for children, their families; interdisciplinary teamwork, its advantages.

070:027 Neonatal Intensive Care Unit arr.
Experience in care for ill neonates, proficiency in using diagnostic tests, procedures; responsibility for care of several infants; reference and literature review, conferences, teaching, clinical rounds. Open only to senior medical students.

070:028 Pediatric Inpatient Care Subinternship arr.
Experience on pediatric inpatient team caring for patients ranging from infants through adolescents; evaluation, formulation of differential diagnosis, diagnostic workshops, appropriate therapy programs. Open only to senior medical students.

070:029 Pediatric Intensive Care Unit 4 s.h.
Direct care of critically ill children, under supervision of pediatric residents and staff; participation in educational activities and formal clinical rounds. Open only to senior medical students.

070:030 Medical Genetics for the Senior Student arr.
Participation in diagnostic, therapeutic problems; techniques for evaluation, appropriate counseling in genetic cases; conferences.

070:033 Pediatric Gastroenterology arr.
Diagnosis, management, treatment of diseases of gastrointestinal tract, liver, pancreas in children; ward rounds, consultations, clinics, diagnostic procedures, conferences.

070:040 Infectious Disease Consults 4 s.h.
Experience in taking historical data for diagnosis of out-patients and inpatients, and in performing, interpreting pulmonary function, skin tests; appropriate disease management.

070:053 Outpatient Subspecialty Rotation 4 s.h.
070:055 General Pediatric Outpatient Clinic 4 s.h.
Work in general pediatric outpatient clinics with acute or chronically ill patients and with well children.

070:102 Pediatrics Elective for Physician Assistant Students arr.
070:106 Cardiology for Physician Assistant Students arr.
Participation in inpatient, outpatient clinical activities; observation of cardiac catheterization, echocardiography; skill development in cardiac auscultation. EKG, chest X-ray interpretation; emphasis on the physical diagnosis, management of congenital and acquired heart disease in children.

070:110 Medical Genetics 2 s.h.
Gene structure and function, basic genetics concepts, application to problems in human disease. Open only to medical students. Offered last six weeks of fall semester.

070:201 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. Prerequisites: 096:219 and 096:280. Same as 096:220.

Work in pediatric psychology learning disability clinic; training, experience in assessment, interview, research. Consent of instructor required. Same as 079:207.

070:247 Neuropsychology of Learning Seminar arr.
Research, theory on varied approaches to learning disability; language disability, visual/perceptual disability, spatial and memory deficits. Consent of instructor required.

070:249 Advanced Practicum in Child and Adolescent Personality Assessment 3 s.h.
Work in pediatric psychology clinic; training, experience in assessment, interviewing, psychological report writing; critique of personality instruments, test in personality assessment for children.

070:250 Social Psychology of Disability 3 s.h.
Research seminar: mental/physical disability from individual, societal perspectives; emphasis on clarifying research and theoretical strategies in psychology of disability. Open only to doctoral students. Consent of instructor required. Same as 079:210.

070:251 Clinical Pediatric Neuropsychology arr.
Learning and behavior disorders resulting from central nervous system dysfunction; clinical experience in assessment of cognitive, behavioral patterns. Consent of instructor required.

070:252 Assessment of Attention Deficit Disorders 3 s.h.
Participation in clinical research, didactic work in evaluating children with attention deficit disorder. Prerequisite: experience in intellectual assessment of children.

070:253 Assessment of Behavior Disorders arr.
Experience in diagnostic, behavioral assessments of children with conduct disorders.

070:300 Pediatric Independent Study arr.
070:333 Critical Care of Campus arr.
Arranged by student and department. Open only to senior medical students.

070:555 Pediatrics for Physician Assistant Students arr.
070:653 Adult and Pediatric Nephrology and Hypertension arr.
Same as 078:653.

070:662 Medical and Pediatric Endocrinology arr.
Same as 078:662.

070:998 Special Studies on Campus arr.
070:999 Special Studies off Campus arr.

**Pharmacology**

Head: G.F. Gebhart


Professors emeriti: J. Paul Long, James Spratt

Associate professors: Rory Fisher, Minnetta Gardinier, Raymond Hohl, Barry Kasson, John Koland

Assistant professors: Joseph Hill, Kathryn G. Lamping, Dawn E. Queille, Frederick W. Queille, Stefan Strack

Graduate degrees: M.S., Ph.D. in Pharmacology

Web site: http://www.medicine.uiowa.edu/pharmacology

The Department of Pharmacology offers graduate study programs leading to the M.S. and Ph.D. degrees. These programs include both didactic and research experience. Also available are opportunities for qualified students to pursue an M.S. degree in clinical pharmacology or a combined M.D./Ph.D. degree (Medical Scientist Training Program).

The department provides professional training in pharmacology for health science students and participates with other departments in educational and research activities such as the Dental Scientist Training Program, the Medical Scientist Training Program, the Physician Scientist Training Program, the Molecular Biology Program, the Neuroscience Program, the Diabetes and Endocrinology Research Center, the Cancer Center, and the Cardiovascular Research Center.

The department pioneered the offering of pharmacology to undergraduate students with little or no science background. The lecture and discussion sessions in 071:120 Drugs: Their Nature, Action, and Use emphasize the mechanisms of drug action and give students a background for rational decisions concerning use of drugs. Students interested in pursuing a career in science may attend an eight-week summer research program that provides opportunities for selected undergraduates to conduct research in faculty laboratories.

The department offers research training in all areas of pharmacology and toxicology at the predoctoral and postdoctoral levels to prepare students for career opportunities in academia, government, and industry.

**Master of Science**

Core course requirements for the M.S. degree in pharmacology are as follows.

071:135 Principles of Pharmacology 3 s.h.

071:201-202 Pharmaceutical Science- Graduate Student I-II 10 s.h.

071:203 Pharmacology Research arr.

071:204 Pharmacology Seminar 1 s.h.

072:164 Human Physiology for Physician Assistants 4 s.h.

156:201 Principles of Molecular and Cellular Biology 4 s.h.

Students also are expected to obtain maximum experience in laboratory research while completing their course work. 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

Core course requirements for the Ph.D. in pharmacology are as follows.

071:135 Principles of Pharmacology 3 s.h.
071:201-202 Pharmacological Science-Graduate Student I-II 10 s.h.
071:203 Pharmacology Research 1 s.h.
071:204 Pharmacology Seminar 1 s.h.
071:209 Receptors and Signal Transduction 3 s.h.
072:164 Human Physiology for Physician Assistants 4 s.h.
156:201 Principles of Molecular and Cellular Biology 4 s.h.

Individual faculty research advisers may require additional courses.

During the first semester in the program, students are required to work in two different faculty laboratories before selecting a laboratory in which to pursue thesis research. Students then are expected to obtain 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

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. For both the MS. and Ph.D. programs, admission typically requires a grade-point average of 3.00 or higher; a combined score of 1200 or higher on the verbal and quantitative sections of the Graduate Record Examination (GRE); and completion of undergraduate courses in chemistry, biology, biochemistry, and mathematics. However, each application is reviewed individually and, if the applicant possesses outstanding credentials in other areas, some of the standard admission criteria may be set aside.

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

071:100 Molecular Basis of Disease 2 s.h.
Current molecular explanations for human disorders. Offered fall semesters. Consent of instructor required.

071:105 Pharmacology for Health Sciences: Medical 5 s.h.
Principles of pharmacology, pharmacologic actions of drugs, correlation with therapeutic uses. Offered fall semesters. Consent of instructor required. Prerequisites: 072:212 and 099:163, or equivalents.

071:111 Pharmacology for Dental Students 5 s.h.
Principles of pharmacology, pharmacologic actions of drugs, correlation with therapeutic uses. Offered spring semesters. Prerequisites: 072:152 and 099:161, or consent of instructor.

071:120 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. Open only to non-health science students. Offered spring semester.

071:125 Pharmacology for Health Sciences: Physician Assistant Students 6 s.h.
Principles of pharmacology, pharmacologic actions of drugs, correlation with therapeutic uses. Offered fall semesters. Prerequisites: 072:150 and 099:164 or consent of instructor.

071:130 Intermediate Pharmacology 3 s.h.
Introduction to principles of pharmacology, pharmacologic actions of drugs. Offered spring semesters. Science background required. Prerequisites: undergraduate biochemistry and physiology, or consent of instructor.

071:132 Intermediate Pharmacology 3 s.h.

071:135 Principles of Pharmacology 3 s.h.
Principles of drug action, disposition, statistical analysis. Offered spring semesters. Consent of instructor required.

071:190 Pharmacology and Toxicology for Health Sciences I 4 s.h.
Principles of pharmacology, toxicology; drug and toxic mechanisms; systemic and organ specific pharmacologic and toxic responses. Open only to third-year pharmacy students and to graduate students with consent of instructor. Offered fall semesters.

071:191 Pharmacology and Toxicology for Health Sciences II 4 s.h.
Continuation of 071:190. Open only to third-year pharmacy students and to graduate students with consent of instructor. Offered spring semester.

071:201 Pharmacological Science-Graduate Student I 5 s.h.
Lectures and exams of 071:190-191; evaluation of the experimental basis of putative mechanisms of action of five therapeutic or toxicogenic agents; first of two-course sequence. Consent of instructor required.

071:202 Pharmacological Science-Graduate Student II 5 s.h.
Continuation of 071:201. Consent of instructor required.

071:203 Pharmacology Research 1 s.h.
Consent of department head required.

071:204 Pharmacology Seminar 1 s.h.
Consent of department head required.

071:207 Neuropharmacology 3 s.h.
Pharmacological and biochemical actions of drugs that modify neurotransmitter function; actions on cell ultrastructure, membrane excitability, neurotransmitter synthesis and degradation, integrated neuronal activity. Offered fall semesters. Consent of instructor required. Prerequisite: medical physiology background.

071:209 Receptors and Signal Transduction 3 s.h.
Major receptor families: G-protein coupled receptors, ligand-regulated transmembrane enzymes, ligand-regulated ion channels, the steroid receptor superfamily; emphasis on description, interpretation of specific experiments, experimental strategies underlying current research. Offered fall semesters. Prerequisites: 072:212 or equivalent, or 099:130 or equivalent. Same as 072:209, 132:200.

071:210 Special Topics in Pharmacology 1 s.h.
Consent of department head required.

071:215 Topics in Neuropharmacology 1 s.h.
Recent advances in neuropsychology, developmental neurobiology, neuroendocrinology, related neurosciences. Consent of instructor required.

071:225 Topics in Molecular Pharmacology 1 s.h.
Recent advances in molecular pharmacology; receptor, postreceptor events in stimulus coupling. Consent of instructor required.

071:230 Behavioral Pharmacology 3 s.h.
Behavioral analysis of drug action; emphasis on physiological and biomedical mechanisms underlying behavioral processes in experimental animals, humans. Same as 031:230.

071:235 Topics in Pain and Analgesia 1 s.h.
Recent advances in pain research, therapy. Consent of instructor required.

071:244 Behavioral Neuroscience 2 s.h.
Same as 031:244, 132:244.

071:255 Topics in Cardiovascular Pharmacology 1 s.h.

Physical Therapy

Director: David H. Nielsen
Professors: Thomas Cook (Occupational and Environmental Health), David Haman
Associate professors: Kelly Colle (Exercise Science), Warren Darling (Exercise Science), Richard Shields, H. John Yack
Assistant professors: Martin Bilodeau, Heather Hartnell, John Rosecrance (Occupational and Environmental Health), Kathleen Shaka
Adjunct assistant professors: Sandra Cassidy, William Ontal
Lecturer: Byron Bork
Adjunct lecturers: Donald Shurr (Introduction to Pharmacology), Theodore Kepros, Karl Lautenthal, Joseph Leonard, Keke San, Mark Georghiou, John Tomberlin, John Wadsworth
Graduate degrees: M.P.T.; M.A., Ph.D. in Physical Therapy

The Physical Therapy Program is located in the College of Medicine. For detailed information on the division’s general academic policies, see “Division of Associated Medical Sciences” in this section of the Catalog.

Physiatrists 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. Physiatrists practice in collaboration 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 lifestyle. Research, teaching, consultation, and administration also are parts of a physiatrist’s professional role.

A wide variety of opportunities exist for professional practice in inpatient, outpatient, and community-based settings. Opportunities 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. Additional career opportunities are available for teaching and research in physical therapy educational programs.

Education is available at three different levels: Master of Physical Therapy (the basic professional degree), Master of Arts, and Doctor of Philosophy. The M.P.T. program admits 36 students each year. Approximately 25 full- and part-time students are enrolled at any one time in the M.A. and Ph.D. programs.

The facilities are well-equipped for classroom and laboratory instruction and innovative research. The program has seven state-of-the-art independent research laboratories. The Physical Therapy Program is located in the College of Medicine 493.
Graduate Programs

Master of Physical Therapy

The professional program is fully accredited by the American Physical Therapy Association. Satisfactory completion of the professional program qualifies candidates for the National Physical Therapy Examination for licensure to practice. The Master of Physical Therapy program, which is completed in two and a half years, consists of the following courses.

First Semester
- **060:108** Human Anatomy 4 s.h.
- **069:133** Introduction to Human Pathology 3 s.h.
- **101:120** Professional Issues and Ethics 1 s.h.
- **101:141** Principles of Physical Therapy 3 s.h.
- **101:210** Kinesiology and Pathomechanics 4 s.h.

Second Semester
- **060:234** Medical Neuroscience 4 s.h.
- **101:131** Therapeutic Physical Agents I 3 s.h.
- **101:185** Musculoskeletal Therapies I 3 s.h.
- **101:191** Clinical Education I 1 s.h.
- **101:206** Health Promotion and Cardiopulmonary Therapies 4 s.h.

Third Semester
- **101:122** Psychosocial Aspects of Patient Care 1 s.h.
- **101:132** Therapeutic Physical Agents II 2 s.h.
- **101:192** Clinical Education II 1 s.h.
- **101:201** Applied Clinical Medicine 2 s.h.
- **101:202** Musculoskeletal Therapies II 3 s.h.
- **101:224** Principles of Motor Control and Applied Neuroscience 3 s.h.
- **101:249** Research Practicum I 2 s.h.
- *Elective (optional)* 1 s.h.

Fourth Semester
- **101:121** Physical Therapy Management and Administration 2 s.h.
- **101:170** Prosthetics and Orthotics 2 s.h.
- **101:193** Clinical Education III 1 s.h.
- **101:203** Musculoskeletal Therapies III 3 s.h.
- **101:225** Neuromuscular Therapies 3 s.h.
- **101:250** Research Practicum II 2 s.h.
- *Elective(s)* 2 s.h.

*The curriculum allows students the option to earn a total of 3 semester hours in electives.

Summer Session
- **101:194** Clinical Internship (May-August) 6 s.h.

Fifth Semester
- **101:194** Clinical Internship (August-November) 3 s.h.

Admission

A new class is admitted to the Master of Physical Therapy Program each fall. To qualify for admission, applicants must have completed, or must plan to complete before enrollment, a baccalaureate degree from a regionally accredited institution in the United States. The baccalaureate degree program must include the following course prerequisites.

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 semester hours

Physics: a complete introductory course equivalent to 8 semester hours

Chemistry: a complete introductory course equivalent to 8 semester hours

Psychology: courses equivalent to 6 semester hours

Mathematics: a college-level mathematics course, at the level of trigonometry or higher; equivalent to 3 semester hours

Statistics: a college-level statistics course equivalent to 3 semester hours

All science courses must include the appropriate laboratory instruction. The prerequisite courses must have been taken for a letter grade.

Applicants must have an overall grade-point average of at least 2.70 (on a 4.00 scale) in all prerequisite course work, including elective basic science courses, is recommended.

Three letters of recommendation are required and should be sent directly to the Physical Therapy Program office.

Applicants must take the Graduate Record Examination (GRE) General Test. Students should arrange to take the test early in order to ensure receipt of the results of the examination by the application deadline (February 1).

Personal interviews are required of candidates selected for consideration by the admissions committee. Because the number of students admitted to each class is limited, not all applicants are invited for interviews. Selections for each class are made from the applicants interviewed. All 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. Preference is given to residents of Iowa. Consideration also is given to nonresidents with outstanding academic records.

Applications are accepted beginning September 1 for the following year. Prospective students are urged to apply as early as possible. The closing date is February 1.

Expenses

In addition to general University expenses, students in the Master of Physical Therapy Program are responsible for purchasing uniforms, patient evaluation kits, and course syllabi.

All students are required to comply with the pre-entrance and periodic health screening program developed by the Student Health Service in cooperation with The University of Iowa Hospitals and Clinics. All costs of the screening program are the student’s responsibility. Students also are required to have health insurance.

Master of Arts

The Master of Arts in physical therapy emphasizes research and teaching in three areas of physical therapy: cardiopulmonary, musculoskeletal, and neuromuscular. The program focuses on theoretical and clinical applications for assessment and treatment of patient disorders in the three specialty areas. Clinical practicum experiences are offered to complement these specialties.

The master’s degree requires a minimum of 30 semester hours of graduate course work. Completion of basic professional physical therapy education is a prerequisite. Clinical experience is recommended.

Physical therapy research laboratories are available. These laboratories are well-equipped with electromechanical systems and computers for measurement and analysis of cardiopulmonary responses (heart rate, blood pressure, energy cost, and ventilation), musculoskeletal function in normal, sport, and occupational activities (muscle strength and function, kinetics, and kinematics), and neuromuscular function (electromyography, spinal reflexes, neurophysiology of pain, CNS control mechanisms). Use of extradepartmental laboratories also may be arranged.

Collaborative studies are encouraged with other departments, such as neurology, internal medicine, occupational and environmental health, pediatrics, orthopaedic surgery, physiology and biophysics, anatomy, engineering, and pharmacology, and with personnel in the physical therapy clinics.

Students who successfully complete the M.A. program in physical therapy will possess:
- theoretical and scientific knowledge required for performance of research at the basic, applied, or clinical level leading to scientific presentations;
- breadth of knowledge in the cardiopulmonary, musculoskeletal, or neuromuscular specialty areas as they relate to impairment, functional limitation, and disability; and
- practical skills required for teaching at the professional entry level within the academic community.

The curriculum is as follows.
CORE REQUIREMENTS

101:212 Biomedical Instrumentation and Measurement 4 s.h.
101:280 Teaching Practicum 1 s.h.
101:301 Thesis: Physical Therapy (may be taken pass/fall) 4 s.h.
101:326 Analysis of Scientific Literature 3 s.h.
171:162 Design and Analysis of Experiments in the Biomedical Sciences 3 s.h.

SCIENTIFIC CONTENT CORE AND SPECIALTY

FOCUS REQUIREMENTS

Students take one first-level course from each of the three specialty areas and one second-level course in their identified specialty area. Extracurricular courses may be substituted with the adviser and course instructor's approval.

Cardiopulmonary
First-level courses:
027:141 Exercise Physiology 3 s.h.
101:206 Advanced Health Promotion and Cardiopulmonary Therapeutics (with lab) 4 s.h.

Second-level courses:
027:274/303 Advanced Exercise Physiology/Advanced Exercise Physiology Laboratory (respiratory and cardiovascular) 3 s.h.
101:260 Advanced Health Promotion and Cardiopulmonary Therapies 3 s.h.

Musculoskeletal
First-level courses:
027:107 Introduction to Biomechanics 3 s.h.
101:210 Kinesiology and Pathomechanics (with lab) 4 s.h.

Second-level courses:
027:155 Skeletal Muscle Biology 3 s.h.
027:197 Biomechanics of Human Motion 4 s.h.
058:190 Readings in Mechanical Engineering (Statics) 4 s.h.
101:272 Isokinetiks in Rehabilitation 3 s.h.
101:285 Biomechanical Analysis in Rehabilitation 3 s.h.
175:190 Occupational Ergonomics I 3 s.h.
175:294 Occupational Ergonomics II 3 s.h.
175:295 Clinical Ergonomics 2 s.h.

Neuromuscular
First-level courses:
027:160 Motor Control I: Neuropsychological Basis 3 s.h.
101:224 Principles of Motor Control and Applied Neuroscience 3 s.h.

Second-level courses:
027:314 Seminar in Motor Control 2 s.h.
101:275 Analysis of Sensory-Motor Systems in Health and Disease 3 s.h.
101:277 Mechanisms of Pain Transmission 2 s.h.
101:295 Applied Electromyography 3 s.h.
132:180 Fundamental Neuroscience 4 s.h.

ELECTIVES

The requirement varies.

Admission

To be considered for admission, applicants must be graduates of an approved professional program of physical therapy and must have earned a grade-point average of at least 2.75 (on a 4.00 scale) on all undergraduate work. Two years of clinical experience also are highly desirable.

Admission to the Master of Arts program is based on the grade-point average for previous collegiate academic-work; scores on the Graduate Record Examination (GRE) General Test; recommendations from three sources; and a personal interview. Foreign student applicants whose native language is not English must have a score of at least 600 on the Test of English as a Foreign Language (TOEFL). Applicants also must meet the requirements established by the Graduate College.

Applicants must complete the Graduate College application.

Deadlines for completed written applications are October 15 (notification by December 15); March 15 (notification by May 15); and May 15 (notification by July 15).

Doctor of Philosophy

The Ph.D. program is designed to advance the student's ability to independently develop and carry out research projects that strive to establish the scientific basis for prevention, evaluation, and treatment of impairments, functional limitations, and disability. The curriculum is flexible enough to accommodate research needs focusing on basic, applied, or clinical studies in the rehabilitation sciences.

Graduates who complete the program are prepared for academic appointments that emphasize research, scholarship, and teaching. They possess:

- theoretical and scientific knowledge to perform original research at the basic, applied, or clinical level, which leads to scientific presentations, publication in peer-reviewed journals, and competition for extramural funding through scientific grant writing;
- breadth of knowledge in the cardiopulmonary, musculoskeletal, or neuromuscular specialty areas as they relate to impairment, functional limitation, and disability; and
- theoretical and practical skills required for teaching at the professional entry and advanced graduate levels in the academic community.

All Ph.D. students must have graduated from an accredited physical therapist educational program and must have satisfied the requirements for a Master of Arts in physical therapy at The University of Iowa (or equivalent academic work). A scientific paper accepted for publication in peer-reviewed professional journals may be substituted for the master's thesis. The paper is not required at the time of acceptance to the Ph.D. program, but it is required before the comprehensive examination.

The courses required for the Master of Arts degree are considered prerequisites to Ph.D. course work.

Each student and his or her faculty adviser develop an individualized plan of study. A preliminary plan of study is developed within the first 9 semester hours of graduate study, and a final plan is submitted to the Graduate College when the Ph.D. comprehensive examination is scheduled.

To ensure breadth of knowledge, all students must complete specific scientific area core courses. Elective courses are selected to provide in-depth study of a defined specialty and are complemented by an advanced seminar course specific to the student's specialty and taken in preparation for the comprehensive examination. Students must take a minimum of 20 semester hours, excluding research, in their defined specialty area. Other requirements include specific core tools and practicum courses, which provide background knowledge and skill acquisition for teaching and research. Doctoral study culminates with 12 semester hours of thesis research and an oral examination.

Curriculum

The Ph.D. requires at least 42 semester hours beyond the master's degree (30 semester hours) and at least 20 semester hours of formal study in the student's defined specialty area. Students must satisfactorily complete the comprehensive examinations which should be taken after all required course work is completed.

The following semester-hour requirements include master's degree prerequisites.

GENERAL CORE REQUIREMENTS

The requirement is 45 semester hours.

101:212 Biomedical Instrumentation and Measurement (required for master's degree) 4 s.h.

Two approved courses in statistics (prerequisite to master's course work):

228:102/148 Introduction to Statistical Methods/Intermediate Statistical Methods 6 s.h.
or
171:161/162 Introduction to Biostatistics/Design and Analysis of Experiments in the Biomedical Sciences 6 s.h.

One approved course in methods of teaching (07P:385 Teaching and Learning in Higher Education) 3 s.h.
101:280 Teaching Practicum 3 s.h.

Research requirements (all of these, for total of 10 semester hours);

101:284 Practicum in Research arr.
101:325 Independent Study arr.
101:327 Research in Physical Therapy arr.
101:301 Thesis: Physical Therapy (Ph.D.) (thesis proposal must be approved before data are collected) 12 s.h.
101:326 Analysis of Scientific Literature (required for master's degree) 3 s.h.

SCIENTIFIC CONTENT CORE AND SPECIALTY

FOCUS REQUIREMENTS

Students take one first-level course from each of the three specialty areas, and one second-level course from two of the three specialty areas.
Specialty focus courses:
101:214 Advanced Seminar In Physical Therapy 3 s.h.
Elective specialty courses 11 s.h.

Electives
The requirement varies.

Admission
Applicants should have a grade-point average of at least 3.00 (B average) on work completed for the master’s degree, a score of at least 1100 on the Graduate Record Examination Aptitude Test (total for the verbal and quantitative components), and three letters of reference. International applicants must score at least 600 on the TOEFL exam. A minimum of two years of clinical experience is considered highly desirable.

All applicants must complete an application to the Graduate College. The application, including test scores, transcripts, and letters of reference, should be sent directly to the graduate program (courses outside the department may be negotiated). Admission to the program is made on a competitive basis, and a minimum of 3.0 grade-point average is required. International applicants must score at least 600 on the TOEFL examination. Minimum test scores that are acceptable for admission are SAT 1100 and GRE 1300.

Financial Support
A number of teaching and research assistantships are available; part-time clinical work also may be available.

Courses
101:120 Professional Issues and Ethics 1 s.h.
Evolution of physical therapy as a profession; contemporary issues in education and practice; ethical theory and approaches to analyzing and acting on ethical problems; professional and peer relationships.

101:121 Physical Therapy Management and Administration 2 s.h.
Principles of management in physical therapy practice; historical perspective, current health care reform, marketing, managing risk, preparing for the future.

101:122 Psychosocial Aspects of Patient Care 1 s.h.
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.

101:131 Therapeutic Physical Agents I 1 s.h.
Theoretical and practical applications for safe, effective use of physical agents (superficial and deep heat, cold, hydrotherapy, ultraviolet light, electrotherapeutic modalities, biofeedback, NMES); basic science mechanisms of pain, pain assessment and pain management; massage and soft tissue mobilization; emphasis on problem solving, clinical decision making.

101:132 Therapeutic Physical Agents II 2 s.h.
Theoretical and practical application of electrotherapeutic devices used in physical therapy for pain control, tissue healing, neuromuscular reeducation; emphasis on safe, effective clinical application and problem solving; wound examination and intervention skills.

101:141 Principles of Physical Therapy 3 s.h.
Patient management skills: documentation, basic assessment, pre-ambulatory activities, joint range of motion, strength assessment, patient transfers, gait assessment, gait training, negotiating architectural barriers.

101:170 Prosthetics and Orthotics 2 s.h.
Physical therapy management and assessment of patients in need of prosthetic and orthotic devices; principles and components of prosthetic and orthotic design and use.

101:172 Sports Therapy for Physical Therapists 2 s.h.
Knowledge and skills required of physical therapists working in sports clinical setting or in conjunction with a team.

101:185 Musculoskeletal Therapies I 3 s.h.
Musculoskeletal techniques and biomechanical principles applied to assessment and evaluation of common orthopedic problems; problem-solving, case-study approach to clinical methods, skill acquisition.

101:191 Clinical Education I 1 s.h.
Part-time clinical observation and experience in several different clinical facilities under faculty supervision.

101:192 Clinical Education II 1 s.h.
Continuation of 101:191: theory of physical therapy procedures correlated to practice; competence in basic skills, with full-time, two-week clinical experience in December.

101:193 Clinical Education III 0-1 s.h.
Continuation of 101:192: theory and practice of physical therapy procedures; competence in basic skills through two-week, full-time clinical experience in January.

101:194 Clinical Internship 1-2 s.h.
Full-time clinical education divided among three settings: development of competence in independent assessment, treatment of patients under supervision of clinical faculty; 24-week minimum.

101:200 Pediatric Physical Therapy 3-4 s.h.
Preparation for work in pediatric settings using family-centered practice; diagnosis, service delivery settings, interventions, and management strategies specific to pediatrics.

101:201 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.

101:202 Musculoskeletal Therapies II 3 s.h.
Pathology, assessment, management of orthopedic disorders of the upper quarter; problem-solving approach to evaluation and management of patients with musculoskeletal conditions.

101:203 Musculoskeletal Therapies III 3 s.h.
Pathology, assessment, management of orthopedic disorders of the lower quarter; problem-solving approach to evaluation and management of patients with musculoskeletal conditions.

101:206 Health Promotion and Cardiopulmonary Therapies 4 s.h.
Applied physiology and health promotion/ wellness strategies; cardiopulmonary anatomy, physiology, and application of basic concepts, techniques in management of patients with acute and chronic cardiac, pulmonary disorders; laboratories.

101:210 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.

101:212 Biomechanical Instrumentation and Measurement 4 s.h.
Basic principles of electronics, measurement; their application to physical therapy research, practice. Offered fall semesters.

101:214 Advanced Seminar In Physical Therapy 1 s.h.
Current status of research for biological, mechanical, psychological concepts pertinent to cardiopulmonary, musculoskeletal, neuromotor areas of physical therapy.

101:220 Seminar: Physical Therapy 1 s.h.

101:224 Principles of Motor Control and Applied Neuroscience 3 s.h.
Sensormotor mechanisms involved with normal and abnormal neuromuscular systems function; skeletal muscle properties/plasticity, muscle fatigue; neural mechanisms of muscle strengthening, spinal circuitry, simple and complex reflexes, spasticity, rigidity, posture control balance, motor learning, applied neurophysiological assessment of pathological conditions, such as stroke, SCI.
Techniques used in evaluation, treatment of persons with scientific rationale for abnormal sensorimotor activity and movement; normal, abnormal motor development in children; techniques used to provide comprehensive institutional and home rehabilitation programs for conditions such as stroke, traumatic brain injury, multiple sclerosis, Parkinson's disease, cerebral palsy, vestibular disorders, spinal cord injury. Prerequisite: 101:224.

101:225 Neuro muscular Therapeutics 3 s.h.

101:230 Alternative Therapies in Rehabilitation arr.

101:249 Research Practicum I arr.

101:250 Research Practicum II arr.

101:260 Advanced Health Promotion and Cardiopulmonary Therapeutics arr.

101:270 Occupational Biomechanics arr.

101:272 Isokinetics in Rehabilitation arr.

101:275 Analysis of Sensori-Motor Systems In Health and Disease arr.


101:280 Teaching Practicum arr.

101:282 Clinical Educational Practicum arr.

101:284 Practicum in Research arr.

101:285 Biomechanical Analysis in Rehabilitation arr.

101:295 Applied Electromyography 3 s.h.


101:325 Independent Study arr.

101:326 Analysis of Scientific Literature 3 s.h.

101:327 Research in Physical Therapy arr.

PHYSICIAN ASSISTANT PROGRAM

Director: David P. Asprey
Medical director: Daniel Fick
Assistant director: Richard W. Dehn
Director of clinical education: Amy M. Gregg
Director of curriculum and evaluation: Peter M. Stanford

Web site: http://www.medicine.uiowa.edu/PA/pa.htm

The Physician Assistant Program is one of five academic units in the Division of Associated Medical Sciences. For detailed information on the division’s general academic policies, see “Division of Associated Medical Sciences” in this section of the Catalog.

Within the physician/PA relationship, the PA is responsible for making medical decisions and providing a broad range of diagnostic and therapeutic services. The PA may function in a variety of settings, including an office, hospital, emergency room, nursing home, rural satellite clinic, and in the patient’s home.

In the traditional office setting, the PA sees patients, obtains histories, performs physical examinations, and orders 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 Physician Assistant Program at The University of Iowa is accredited by the Commission on Accreditation of Allied Health Educational Programs and is a member of the Association of the Physician Assistant Programs. Completion of the program qualifies students for the Master of Physician Assistant Studies degree and for the opportunity to take the National Certifying Examination for Primary Care Physician Assistants. Successful completion of the national certifying examination is a prerequisite for registration as a physician assistant in Iowa.

The demand for physician assistants in all types of health care settings is growing as their role expands into a variety of health care situations and the health care industry undergoes organizational changes. The educational program at The University of Iowa emphasizes primary care medicine, and in particular, family medicine. However, with increasing employment opportunities for physician assistants in specialty areas of medicine, the program also offers elective clinical rotations in selected subspecialties of medicine.

Master of Physician Assistant Studies

The Physician Assistant Program is an integral part of the College of Medicine. The first year of the program is provided at The University of Iowa Health Center. A major portion of the second-year clinical work takes place throughout the state in hospitals, clinics, and office practice settings.

The PA curriculum spans 25 months and is divided into two phases.

The first phase begins in late May with seven months of course work in a number of basic science areas, including anatomy, biochemistry, microbiology, pathology, pharmacology, and physiology. Whenever appropriate, related subjects are integrated to provide sequential lecture and laboratory experience. Also offered during this session are courses in interpretation of medical literature, and research methods and design. An introductory course on taking a medical history and performing a physical examination helps students expand their ability to perform selected elements of the history and exam.

A new curriculum has been developed in the area of patient assessment. It involves a sequence of didactic instruction coupled with practical experiences involving simulated and real patients. The level and intensity of the patient interactions systematically increase through the curriculum as the student gains confidence and clinical competence.

The first phase also includes a five-week interim session followed by a 12-week introduction to Clinical Medicine for Physician Assistant Students. In the five-week interim session, the microbiology and pharmacology courses continue, and students take a professional seminar course, in which they research and discuss professional issues that will impact their practice as physician assistants.

The spring semester consists of a 12-week introduction to clinical skills for physician assistant students, which includes three courses that are interrelated to each other. These courses involve the application of basic science knowledge to the understanding of clinical-pathologic correlations of common and/or catastrophic disorders encountered in the major disciplines of clinical medicine. They continue with instruction in obtaining a problem-oriented medical history and performing a physical examination. Approximately 65 percent of the first-year didactic curriculum is completed with sophomore medical students.

Two weeks prior to clinical rotations, students complete Foundations of Clinical Practice, which includes instruction in several skill areas (sutures, injections, prescription writing,
medical orders, and so forth), completion of the Advanced Cardiac Life Support Program, and a short course in clinical pathology.

The second phase consists of a 42-week core primary-care clinical curriculum, including six weeks each of family medicine I, family medicine II, general internal medicine, pediatrics, and surgery, and four weeks each of emergency medicine, gynecology, and psychiatry. Students select electives six weeks in length. These may include geriatrics, cardiology, dermatology, and orthopedics.

The clinical rotations are designed to provide instruction and experience in caring for patients in a way that facilitates effective integration of the knowledge, skills, behaviors, and attitudes derived from the basic science and preclinical phases of the program. Clinical training is provided by The University of Iowa Hospitals and Clinics, the Veterans Affairs Medical Centers in Iowa City and Des Moines, Broadlawns Medical Center in Des Moines, and other affiliated hospitals throughout the state. The program emphasizes primary care medicine, offering students additional clinical experience through placement with selected preceptors involved in office-based practices, typically in medically underserved rural areas.

The didactic and clinical phases of the PA program emphasize primary health care delivery and the use of physician assistants as members of the health care team. The program is integrated with the teaching of the College of Medicine, permitting interdisciplinary activities between various medical and health care professional students.

The curriculum’s independent study component (117:201) requires students to select a pertinent health question and apply an evidence-based medicine review of the data. Students then write a concise two-page summary and make a verbal presentation of their findings to their colleagues.

### Professional Curriculum

#### FIRST YEAR (PHASE I)

**Summer and Fall**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
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<tbody>
<tr>
<td>050:174</td>
<td>Foundations of Clinical Practice for Physician</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>Assistant Students</td>
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</tr>
<tr>
<td>060:111</td>
<td>Gross Human Anatomy for Physician Assistant</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Students</td>
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<tr>
<td>061:104</td>
<td>Principles of Infectious Diseases for Physician</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Assistant Students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>069:133</td>
<td>Introduction to Human Pathology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>071:125</td>
<td>Pharmacology for Health Sciences: Physician</td>
<td>6 s.h.</td>
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<tr>
<td>Assistant Students</td>
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<tr>
<td>072:164</td>
<td>Human Physiology for Physician Assistant</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Students</td>
<td></td>
<td></td>
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<tr>
<td>099:164</td>
<td>Biochemistry for Physician Assistant Students</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>117:101</td>
<td>Introduction to Medical History and Physical</td>
<td>3 s.h.</td>
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<tr>
<td>Examination for Physician Assistant Students</td>
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<tr>
<td>117:103</td>
<td>Introduction to Research Design and Methodology</td>
<td>1 s.h.</td>
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<tr>
<td>117:104</td>
<td>Interpretation of Medical Literature</td>
<td>1 s.h.</td>
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**Spring**

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<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>050:175</td>
<td>Foundations of Clinical Practice IV for Physician</td>
<td>15 s.h.</td>
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<tr>
<td>Assistant Students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>050:182</td>
<td>Health Law</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>117:107</td>
<td>Seminar for Physician Assistant Students</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>SECOND YEAR (PHASE II)</td>
<td></td>
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</tr>
<tr>
<td>069:130</td>
<td>Clinical Laboratory Medicine for Physician</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>Assistant Students</td>
<td></td>
<td></td>
</tr>
<tr>
<td>117:110</td>
<td>Introduction to Clinical Skills</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>The following are required clinical rotations.</td>
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<tr>
<td>066:105</td>
<td>Gynecology for Physician Assistant Students</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>070:555</td>
<td>Pediatrics for Physician Assistant Students</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>073:100</td>
<td>Psychiatry for Physician Assistant Students</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>075:100</td>
<td>Emergency Room Elective for Physician Assistant</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Students</td>
<td></td>
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<tr>
<td>075:555</td>
<td>General Surgery for Physician Assistant Students</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>078:555</td>
<td>Internal Medicine for Physician Assistant</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Students</td>
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<tr>
<td>115:555</td>
<td>Family Practice I for Physician Assistant</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Students</td>
<td></td>
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<tr>
<td>115:556</td>
<td>Family Practice II for Physician Assistant</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>Students</td>
<td></td>
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<tr>
<td>117:201</td>
<td>Independent Study</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>Elective clinical rotations are selected from the following.</td>
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<tr>
<td>062:005</td>
<td>Dermatology Elective for Physician Assistant</td>
<td>2 s.h.</td>
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<tr>
<td>Students</td>
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<tr>
<td>064:100</td>
<td>Neurology Elective for Physician Assistant</td>
<td>2 s.h.</td>
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<tr>
<td>Students</td>
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<tr>
<td>066:110</td>
<td>Obstetrics for Physician Assistant Students</td>
<td>arr.</td>
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<tr>
<td>068:108</td>
<td>Otolaryngology Elective for Physician Assistant</td>
<td>arr.</td>
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<td>Students</td>
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<tr>
<td>070:102</td>
<td>Pediatrics Elective for Physician Assistant</td>
<td>arr.</td>
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<tr>
<td>Students</td>
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<tr>
<td>070:106</td>
<td>Cardiology for Physician Assistant Students</td>
<td>arr.</td>
</tr>
<tr>
<td>074:005</td>
<td>Radiology Elective for Physician Assistant</td>
<td>2 s.h.</td>
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<tr>
<td>Students</td>
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<tr>
<td>075:110</td>
<td>Surgery Elective for Physician Assistant Students</td>
<td>arr.</td>
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<tr>
<td>075:111</td>
<td>Surgery Elective for Physician Assistant</td>
<td>arr.</td>
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<td>Students</td>
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<tr>
<td>075:112</td>
<td>Surgery Elective for Physician Assistant Students</td>
<td>arr.</td>
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<tr>
<td>075:113</td>
<td>Surgery-Cardiac Elective for Physician Students</td>
<td>arr.</td>
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<tr>
<td>076:102</td>
<td>Orthopaedics Elective for Physician Assistant</td>
<td>arr.</td>
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<td>Students</td>
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<tr>
<td>078:100</td>
<td>Internal Medicine Elective for Physician</td>
<td>4 s.h.</td>
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<tr>
<td>Assistant Students</td>
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<tr>
<td>078:110</td>
<td>Internal Medicine Elective (Cardiology) for</td>
<td>arr.</td>
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<tr>
<td>Physician Assistant Students</td>
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<tr>
<td>078:130</td>
<td>Internal Medicine Elective (EKG) for Physician</td>
<td>arr.</td>
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<tr>
<td>Assistant Students</td>
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<tr>
<td>078:140</td>
<td>Internal Medicine Elective (Gastroenterology)</td>
<td>arr.</td>
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<tr>
<td>for Physician Assistant Students</td>
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<tr>
<td>078:150</td>
<td>Internal Medicine Elective (Oncology) for</td>
<td>arr.</td>
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<tr>
<td>Physician Assistant Students</td>
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<tr>
<td>078:180</td>
<td>Internal Medicine Elective (Geriatrics) for</td>
<td>arr.</td>
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<tr>
<td>Physician Assistant Students</td>
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</tbody>
</table>

#### Admissions

In order to be considered for admission to the physician assistant professional program, applicants must meet the following requirements.

They must hold a baccalaureate degree from a regionally accredited institution in the United States. They must have a cumulative and science grade-point average of at least 3.00 (where A=4.00) and must have taken the Graduate Record Examination (GRE) General Test within the last 10 years. They must have at least six months health care and/or research experience.

In addition, they must have completed the following preparatory science courses: complete courses in inorganic and organic chemistry; a complete introductory course in animal biology or zoology; and general statistics or biostatistics.

They also must have completed the following upper division science courses:

- human or animal physiology (lower division, combined anatomy/physiology course(s) do not satisfy this requirement); a minimum of three upper division level courses (highly recommended are endocrinology and histology; also recommended are cell biology, cell physiology, genetics, molecular biology, microbiology, neurobiology, and parasitology); general introductory biochemistry (a combined organic/biochemistry course does not satisfy this requirement).

Applicants must have achieved a cumulative and science grade-point average of at least 3.00 on all course work completed at the college or university level. The admissions committee gives special attention to applicants’ performance in science courses. In the past, successful applicants have had cumulative and science grade-point averages of 3.50; a total of 132 semester hours of college credit, at least 65 of which were in the sciences; and more than 3,700 hours of clinical and/or research experience.

Satisfaction of the basic admission requirements does not ensure acceptance into the Physician Assistant Program. The admissions committee selects the applicants it considers best qualified. Applicants with previous health care experience involving direct patient contact receive preferential consideration. The committee requests interviews with the most qualified applicants.
Each new class begins in late May. Applications are accepted from September 1 to December 1. Each applicant must complete the Physician Assistant Program application and submit at least three letters of recommendation. Application materials, GRE scores, and the majority of prerequisite course requirements must be completed by the December 1 application deadline.

**Expenses**

In addition to general University student expenses, students in the Physician Assistant Program are responsible for the purchase of their medical uniforms and diagnostic equipment, approximately $2,000. Microscopes are not required.

**Courses**

- 117:001 Physician Assistant Clinical Second Year arr.
- 117:101 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.
- 117:103 Introduction to Research Design and Methodology
  - Design, implementation of research project, from conception of question to development of a study plan; literature review, formulation of research question, common research design presentation; types of sampling, measurement scales; design and administration of consent forms, questionnaires, interview protocols; use of secondary data sets. Open only to Physician Assistant Program students.
- 117:104 Interpretation of Medical Literature
  - Peer review process, format for research and clinical review article; library use, computerized searches; development of framework for analyzing research articles; article critique. Open only to Physician Assistant Program students.
- 117:105 Preventive Medicine for Physician Assistant Students
- 117:107 Seminar for Physician Assistant Students
  - Professional issues that affect the physician assistant’s practice of medicine.
- 117:110 Introduction to Clinical Skills
  - Suturing, injections, prescription and order writing medical records, patient confidentiality, Iowa Law governing physician assistant practice, completion of the Americans Heart Association’s Advanced Cardiac Life Support Program. Prerequisite: completion of Phases I and II of physician assistant curriculum.
- 117:201 Independent Study
  - Health care project; research, writing of clinical review paper, diagnostic or treatment article, case study, or research paper. Open only to Physician Assistant Program students.
- 117:210 Physician Assistant Internship Seminar
  - Supervised experience in program administration, student advising and admissions, teaching, program and student evaluation, health professions research; opportunities for clinical practice

**PHYSIOLOGY AND BIOPHYSICS**

**Head:** Robert E. Fellops

**Professors:** Francois M. Abboud (Internal Medicine), Kevin P. Campbell, Gerald DiBona (Internal Medicine), Robert E. Fellops, Carl V. Gisolfi (Exercise Science), Jeffrey Pessin, Andrew Russo, Thomas J. Schmidt, Deborah Segaloff, Michael J. Welsh (Internal Medicine)

**Associate professors:** E. Edgar Folk Jr., Charles C. Wunder

**Associate professors:** Nikolai Artemyev, Wayne Johnson, Toshinori Hoshi, Scott Moyle-Rowley, Jay Rubinstein (Otolaryngology-Head and Neck Surgery), Gun Sigmann (Internal Medicine), Erwin F. Shibata, M. Beito Soares (Pediatrics)

**Associate professor emeriti:** Gordon W. Searle

**Assistant professors:** Sarah England, Robert Piper, Mark Sturness

**Graduate degree:** Ph.D. in Physiology and Biophysics

**Web site:** http://www.physiology.uiowa.edu

The Department of Physiology and Biophysics offers graduate study leading to the Doctor of Philosophy; provides instruction in physiology and biophysics for medical, dental, pharmacy, and other health professional students; and participates in interdisciplinary graduate programs, including the Medical Scientist Training Program, a combined M.D.-Ph.D. program conducted under the auspices of the Graduate College and the College of Medicine. A summer research program provides research opportunities and fellowships for selected undergraduates.

Principle areas of interest represented in the department are cell biology, genetics, endocrinology, neuroscience, and membrane physiology and biophysics, with the unifying theme of understanding mechanisms of signal transduction involved in regulating function at the cellular and molecular levels.

**Doctor of Philosophy**

The physiology and biophysics graduate program 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 enter the graduate program through the Biosciences Program (see the Graduate College section of the Catalog) or directly through the Department of Physiology and Biophysics. Those who enter directly are advised by the director of graduate studies, who provides guidance in planning required course work and an introduction to research activities of departmental faculty members.

The core curriculum includes two semesters of cell biology, two semesters of molecular biology or neurophysiology, and one semester of human physiology. The department also offers advanced, specialized courses in membrane physiology, endocrine physiology, environmental and exercise physiology, and neurophysiology. Students elect courses in other departments appropriate to their educational and research objectives.

After successful completion of the course and comprehensive examination requirements, students devote full time to thesis research, which culminates in preparation of a doctoral dissertation and its defense in a final oral exam.

All degree candidates have experience as classroom instructors, under faculty supervision, as part of their training.

**Admission**

Applicants for graduate admission must complete undergraduate studies in an accredited institution prior to matriculation with an overall science grade-point average of at least 3.00, coupled with a combined verbal and quantitative score above 1200 on the Graduate Record Examination (GRE) General Test. The appropriate background for graduate study in cellular and molecular physiology and biophysics includes an undergraduate major in one of the biological, chemical, physical, mathematical, or engineering sciences with one or more years of course work in biology, physics, biochemistry, and calculus.

**Financial Support**

All full-time doctoral students receive financial aid in the form of tuition and stipend support from the Department of Physiology and Biophysics. Support is renewed annually based on satisfactory progress in meeting requirements for the Ph.D. degree.

**Research**

The department’s general research interests 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.

**Facilities**

Two floors of the Bowen Science Building are devoted to research and teaching in the Department of Physiology and Biophysics. Department faculty members also occupy laboratory facilities in the Eckstein Medical Research Building. In addition to specialized equipment in faculty research laboratories, the department has an extensive local area network with direct access to the University network, the Internet, and the multimedia education facility. The department also provides equipment for fluorescence microscopy, isotope analysis, cell culture, and molecular biology. Resources are available at the Hardin Library for the Health Sciences.

**Courses**

072:130 Systemic Physiology

072:150 Physiology for Pharmacy Students

Principles of organ system and cell function. Open only to pharmacy students. Offered spring semesters. Consent of course director required. Prerequisites: grades of C- or higher in 002:010, 004:121, and 004:122.
PSYCHIATRY

Head: Robert C. Robinson

Professors: Bruce Alexander, Arnold Andersen, Nancy Andreasen, Stephen Arndt, Donald Black, Kathleen Backwaltzer, William Corvell, Raymond Crowe, Michael Garvey, Samuel Kuperman, Michael Miller, Russell Noyes, Paul Perry, Bruce Plough

Associate professors: Reni Cadoret, Arthur Canter, Harold Mulford, Herbert Nelson

Adjunct professors: Roger Kandhal

Clinical assistant professor: James Beeghly, George Bower, David C. C. Chan, Brian Cook, Judith Crossett, Michael Flann, Gary Guffey, Laura Kenfield, Delwyn Miller, Peggy Nopoulos, Jane S. Paulsen, Joseph Piven, David Rosenthal, Susan Schultz, Scott Stuart, Victor Swayze, Scott Temple, Veronique Violand, Rafiq Waziri, Catherine Woodman

Associate professor emeritus: Richard Finn

Clinical associate professor: James C. N. Brown

Assitant professors: James Amos, John Bayless, Beth Cizadlo, Caroline Canev Doebeleng, Beng Choon Ho, Sharon Koehle, Douglas Langhens, David Moser, RobertPhillip, Debra Sads, Janette Tansey, Beth Trottman, Thomas Wassink, Nancy Williams

Adjunct assistant professors: Sam Cochran, John Barton, Cheryl Hetherington, Anne Marie Jensen

Consent of course director required.

072:151 Intermediate Physiology 4 s.h.

Principles of organ systems, cell function. Consent of course director required. Prerequisites: 002:010, and grades of C- or higher in 004:121 and 004:122.

072:152 Mammalian Physiology 4 s.h.

072:153 Physiology for Graduate Students 4 s.h.

Principles of organ systems, cell function. Open only to graduate students. Consent of course director required. Prerequisites: 002:010, and grades of C- or higher in 004:121 and 004:122.

072:154 Biomedical Engineering Physiology 4 s.h.

Principles of organ system and cell function. Open only to biomedical engineering students. Offered spring semesters. Consent of course director required.

072:164 Human Physiology for Physician Assistant 4 s.h.

Principles of organ system and cell function. Open only to physician assistant students. Offered summer sessions.


Open to students who are not advanced degree candidates in physiology and biophysics. Consent of instructor required.

072:209 Receptors and Signal Transduction 3 s.h.

Major receptor families: G-protein coupled receptors, ligand-regulated transmembrane enzymes, ligand-regulated ion channels, the steroid receptor superfamily; emphasis on description and interpretation of specific experiments. Experimental strategies that underlie current research. Consent of course director required. Prerequisites: 072:150 or 099:130 or equivalent. Same as 071:209, 132:209.

072:211 Selected Topics in Cellular Excitability 2 s.h.

Topics from current and published articles. Consent of instructor required.

072:212 Medical Physiology 4 s.h.

Principles of human physiology; organ system, cell function. Graduate standing in physiology and biophysics or consent of course director required.

072:220 Cell Biology 1 3 s.h.

Organization and function of the eukaryotic cell. Offered fall semesters. Consent of course director required. Same as 142:220.

072:225 Cell Biology II 3 s.h.

Organization, function of the eukaryotic cell. Offered spring semesters. Consent of course director required. Same as 142:225.

072:234 Medical Neuroscience 4 s.h.

Principles of neurophysiology, neuroanatomy, with emphasis on the human central nervous system; laboratory work on anatomoical study of spinal cord, brain. Offered spring semesters. Consent of course director required. Same as 060:234, 132:234.

072:243 Biophysics of Excitable Membranes 2 s.h.

072:245 Developmental Neurobiology 2 s.h.

Major developmental systems; their application in neurobiology; neurogenesis, synapse formation, axonal guidance, the cellular molecular aspects of neural differentiation; literature-based approach. Consent of course director required. Same as 132:246.

072:262 Environmental Physiology 2 s.h.

Physiological responses, including acclimatization of mammals to extreme heat, cold, light, high and low pressure, space; смог; laboratory emphasis on telemetry, meteorological measurements, activity recording. Consent of course director required. Prerequisite: 072:150 or equivalent.

072:265 Neuroscience Seminar 0-1 s.h.


072:270 Responsible Conduct of Research 1 s.h.

Ethical issues, including misconduct and fraud, proper handling of data, ethical responsibility, conflict of interest, research on animals and human subjects. Consent of instructor required.

072:290 Special Topics arr.

Consent of graduate studies director required.

072:302 Research Physiology and Biophysics arr.

Open only to advanced degree candidates in physiology and biophysics.

072:342 Graduate Physiology Seminar 1 s.h.

Open only to advanced degree candidates in physiology and biophysics.


Open only to advanced degree candidates in physiology and biophysics.

For Medical Students

The following courses are open only to medical students.

073:005 Clinical Psychiatry 4 s.h.

Open only to junior medical students.

073:031 General Hospital Psychiatry arr.

Supervised evaluation of patients at General Hospital Psychiatry, University Hospitals and Clinics.

073:033 Adult Psychiatry, Pappajohn Pavilion arr.


Roles of child psychiatry as a consultation service.

073:045 Adult Outpatient Psychiatry and Psychotherapy 4 s.h.

Diagnostic assessment, evaluation, treatment of psychiatric patients; exposure to both psychotherapeutic, psychopharmacologic treatments.

073:105 Research Psychiatry arr.

Experience, training in practical application of scientific methodology; work with research project at Psychiatric Service or affiliated, cooperating research centers. Open only to senior medical students.

073:998 Special Studies on Campus arr.

Arranged by student with departmental approval.

073:999 Special Studies off Campus arr.

RADIATION SCIENCES

Director:

Undergraduate degree: B.S. in Radiation Sciences

The Radiation Sciences Program is one of five academic units in the Division of Associated Medical Sciences. For detailed information on the division’s general academic policies, see “Division of Associated Medical Sciences” in this section of the Catalog

The Bachelor of Science in radiation sciences provides graduates with the knowledge they need to adapt to the increasing sophistication of the profession of radiation sciences and meet the multicrodential/multicompentency demands of the profession.

In addition to the advantages gained by combining general education with a specialized career preparation, The University of Iowa program offers students the advantages of full participation in the social, cultural, and recreational activities of a diverse campus community.

Radiation sciences professionals work with physicians in gathering accurate patient information for diagnosis and treatment of...
Radiation Sciences • College of Medicine 501

Radiation Sciences

ADVANCED COURSES

061:048 Introduction to Management (or equivalent) 3 s.h.
22S: 102 Introduction to Statistical Methods 3 s.h.
074: 191 Medical Informatics and Networking (or equivalent computer course) 3 s.h.

ELECTIVES

Students choose elective course work to complete the 124 semester hours required for the B.S. degree. Those who have not already taken 08G:001 Interpretation of Literature must take that course as an elective.

Advising

Pre-radiation science students are advised at the University’s Academic Advising Center. After admission to the Radiologic Technology Program, they are advised by the program’s director. Upon completion of the two-year program, students are advised by the Radiation Sciences Program’s degree coordinator.

Admission

Applicants to the Bachelor of Science program in radiation sciences should have completed high school courses in biology, chemistry, and algebra as well as other college preparatory course work. Applicants who wish to complete their entire program at Iowa must enroll in the College of Liberal Arts for their first year of study. Others may transfer from an institution that offers a one-year sequence of specific general education courses approved by The University of Iowa College of Medicine for the radiation sciences degree. To enroll at Iowa, students must meet general undergraduate admission requirements; contact the University’s Office of Admissions and the Radiation Sciences Program for detailed information.

Admission to the Radiologic Technology Program at The University of Iowa Hospitals and Clinics is competitive; only 25 students are admitted each year. The selection process for the program’s June starting date begins the previous October and continues until the class is full. To be considered for admission to the program, students must have completed at least 15 semester hours of the required General Education Program course work, must have a cumulative grade-point average of at least 2.50, and must have submitted their college transcripts.

Admission to a second specialty program is not guaranteed for radiation sciences students; each modality program makes its own admission decisions. Admission is competitive. Students must have completed the required General Education Program course work as well as the Radiologic Technology Program and must have a cumulative grade-point average of at least 2.50 before they can be considered for admission to a second modality program. Applicants also must be registry eligible or have scored above the mean on a nationally recognized certification examination. Students should plan carefully and consult with their advisers to assure that they meet the admission requirements for the second modality they wish
to pursue. For information about admission to specific modality programs, contact the individual program or the Radiation Sciences Program.

RADI OLOGY
Head: Michael W. Vannier
Professors emeriti: Robert C. Brown, Frank Cheng, Steven H. Cornell, Herbert L. Jackson, Charles C. Liu, Richard E. Peterson
Associate professors emeriti: J. Fred Doornbos, William E. Erkonen
Assistant professors: Rommel Dhadha, Frederic Domian, Joan Maley, Nina May, David E. Mellenberg, Brian Mullan, Arnold C. Paulino, Jerome Quets, Melinda Shurafuddin, G. Leonard Watkins, Matthew White, Khalil Yousef, Weining Zhen
Web site: http://www.radiology.uiowa.edu

Clinical Education
See “Nuclear Medicine Technology,” “Radiation Sciences,” and “Division of Associated Medical Sciences” in this section of the Catalog.

Courses
074:005 Radiology Elective for Physician Assistant Students 2 s.h.
074:006 Clinical Radiology 2 s.h.
Two-week clerkship. Open only to medical students.
074:100 Independent Study in the Radiologic Sciences 2 s.h.
Debit, credit, or research. Consent of instructor required.
074:101 Principles of Nuclear Medicine I 0, 6 s.h.
Didactic, laboratory work in radiopharmacy, patient care, radiation protection, math and Statistics, radiation physics, anatomy and physiology, radiochemistry and tracer techniques, medical terminology, computer applications. Open only to nuclear medicine technology students.
074:102 Introductory Clinical Nuclear Medicine 0, 6 s.h.
Experience in preparing radiopharmaceuticals, performing routine nuclear imaging and in vitro procedures; work with clinical instructors. Open only to nuclear medicine technology students.
074:103 Principles of Nuclear Medicine II 0, 3 s.h.
Didactic, laboratory work in nuclear medicine instrumentation, radiobiology, radiopharmacology, and immunology, administration and management, film processing, radiopharmacy laboratory introduction. Open only to nuclear medicine technology students.
074:104 Intermediate Clinical Nuclear Medicine 0, 9 s.h.
Progressive responsibility in radiopharmacy, nuclear imaging, radiopharmacology, procedures; rotations in magnetic resonance imaging, other related imaging areas. Open only to nuclear medicine technology students.
074:105 Advanced Clinical Nuclear Medicine 0, 6 s.h.
Proficiency in performance, quality control of all radiopharmacy and nuclear medicine procedures; opportunities for independent study, research. Open only to nuclear medicine technology students.
074:191 Medical Informatics and Networking 3 s.h.
Health care networking, computer-based patient records, network-based Imaging and physiological monitoring applications, information protocols and standards, network systems design, validation techniques; follows 059:283 Informatics Tools for Health Care Decision Support. Same as 051:189, 056:186.
074:201 Advanced Clinical Radiology arr.
Open only to medical students.
074:202 Introduction to Radiation Oncology 4 s.h.
Open only to medical students.
074:203 Vascular and Interventional Radiology arr.
Open only to medical students.
074:901 Community Radiology arr.
Open only to medical students.
074:998 Special Studies on Campus arr.
Open only to medical students.
074:999 Special Studies off Campus arr.
Open only to medical students.

Surgery
Head: Carol E.H. Scott-Conner
Clinical associate professors: Romeo S. Berardi, Alfred J. Helftizka, Donald W. Mooman
Clinical associate professors emeriti: Luke C. Faber, Samuel D. Porter
Web site: http://www.surgery.uiowa.edu
Courses in surgery provide a unique combination of experience oriented toward patient care with basic surgical research designed to promote students’ awareness of the place of surgery among the physician’s skills. These courses are available only to medical students and qualified students in associated health sciences.

Students of surgery develop awareness of surgical practice’s place in the treatment of disease. Emphasis is placed on basic emergency techniques, traumatology, oncology, burns, gastrointestinal and biliary tract disease, endocrine disease, transplantation, plastic surgery and reconstruction, peripheral vascular surgery, thoracic and cardiovascular surgery, and neurosurgery.

A majority of the courses involve patient-centered discussions and practical exercises interwoven with operating room experience. Lectures and conferences are scheduled regularly on specific topics.

Special courses in selected topics of surgical independent study, and clinical experiences are available to individual fourth-year students by special arrangement with the faculty.

Faculty
Special faculty strengths are centered in the fields of pathophysiology and problems of severe burns, organ transplantation, surgical control of morbid obesity, inflammatory bowel disease, biliary tract disease, pediatric surgery, and plastic surgery. The thoracic-cardiovascular and neurological surgeons have particular expertise in clinical management of the spectrum of diseases in their specialties.

Facilities
The department has more than adequate numbers of patients with a wide variety of surgical diseases for teaching. Special areas include the only burn unit of its kind in the state, providing adequate patient material for both clinical and basic science research.

Laboratories provide equipment, space, and technical expertise to support teaching and a wide spectrum of clinical and scientific research. These laboratories include animal surgery, tissue culture, gastroenterology, microbiology, peripheral vascular surgery, transplantation, organ preservation, cardiovascular surgery, neurosurgery, and oncology.

Courses
075:005 Clinical Surgery 6 s.h.
Experience as active member of surgical team; work on wards, in clinics and operating room; assistance in elective, emergency care.
075:100 Emergency Room Elective for Physician Assistant Students arr.
075:110 Surgery Elective for Physician Assistant Students arr.
075:111 Surgery Elective for Physician Assistant Students (Transplant/Organ Retrieval) arr.
Experience in care of patient with end-stage organ failure; participation in evaluation of potential transplant candidates and in surgical procedures of University transplant service.
075:112 Surgery Elective for Physician Assistant Students (Burn Unit) arr.
Burn care on unit and in the operating room; debridement, grafting techniques, skin storage techniques, dressing changes and tub baths, physical therapy procedures.
075:113 Surgery-Cardiac Elective for Physician Assistant Students arr.
Technical skills in operating room, essentials of preoperative evaluation and postoperative management; for students interested in becoming a cardiac surgical assistant. Prerequisite: 075:555.
075:161 Instrumentation in Perfusion Technology 3 s.h.
Electrical circuitry, filters, pressure transducers, thermistors, cardiac output computers, fluid dynamics, intra-aortic balloon pumps, blood gas analyzers. Open only to perfusion technology students. Prerequisites: biochemistry and physiology.
075:162 Pathophysiology of Perfusion Technology 5 s.h.
Hematology, acid base physiology, gas transfer, heart anatomy, heart embryology, congenital cardiac defects. Open only to perfusion technology students. Prerequisites: biochemistry and physiology.
UROLOGY

Head: Richard D. Williams


Associate professor: Michael A. O’Donnell

Assistant professor: Sean P. Hedican, Jay I. Sandlow

Professors: Michael B. Cohen, Bernard Fallon, Head: Richard D. Williams

In the first year of the M.D. program, the department cooperates with several basic science departments in demonstrating the relationship between urology and the basic sciences. The Departments of Microbiology and Urology collaborate in teaching and research in immunology of genitourinary cancers and renal transplantation.

During the second semester, second year of the M.D. program, the department participates in 050:165 Foundations of Clinical Practice IV (ICD), presenting illustrative lectures and demonstrations related to the diagnosis of diseases of the genitourinary tract in the male and the urinary tract in the female and child.

In the third and fourth years of the M.D. program the department offers courses that provide experience in all areas of urology. The required third-year clerkship covers the fundamentals of these areas through exposure to outpatient clinics and inpatient units at University Hospitals and Clinics and the Veterans Affairs Medical Center as well as daily interactive teaching seminars. The fourth year offers advanced elective courses of intensive study.

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, urologic oncology, urinary tract stone, 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

079:104 Clinical Urology

Work in urology unit, clinic; responsibility for patient care, working with residents.

079:108 Advanced Clerkship in Urology

Experience as integral member of urologic staff, junior resident level.

079:109 Advanced Clerkship In Pediatric Urology

Experience in evaluation and pre-, post-, intraoperative management of patients.

079:099 Individual Study and Research

Preclinical or clinical projects; may include research presentation, collaboration on a publication.

079:115 Urological Oncology

Experience in diagnosis, management of genitourinary neoplasms; participation in oncology protocols; may include collaboration on a publication.

079:119 Urodynamics

Clinical experience in voiding dysfunction, incontinence, urodynamics; full participation in all patient evaluation, urodynamics laboratory activities.

079:120 Urology Elective for Physician Assistant Students

Takins a urologic history, performing physical examinations, interpreting laboratory studies and data.

079:999 Special Studies Off Campus

Individually arranged by students with the departmental approval.
College of Nursing

Dean: Melanie C. Dreher
Associate dean, academic affairs: M. Patricia Donahue
Associate dean, research: Toni Tripp-Reimer
Chair, adult and gerontology study: Meridean L. Maas
Chair, biobehavioral study: Rita Frantz
Chair, organization, systems, and community study: Joanne McCloskey Dochtermann
Chair, parent, child, and family study: Martha Craft-Rosenberg
Professors: Kathleen Buckwalter, Gloria Bulechek, Martha Craft-Rosenberg, M. Patricia Donahue, Melanie C. Dreher, Rita Frantz, Marion Johnson, Meridean L. Maas, Joanne McCloskey Dochtermann, Toni Tripp-Reimer
Professors emeritae: Myrtle Aydelotte, Eva Erickson, Geraldene Felton, Rosemary McKeighen, Hope Solomon, Barbara Thomas
Associate professors: Mary Kathleen Clark, Toni Clow, Perle Slavik Cowen, Ken Culp, Connie Delaney, Janice Ann Denby, Joann Eland, Michele Eliason, Rose Marie Friedrich, Laura Hart, Keela Herr, Diane Huber, Leslie Marshall, Anne Marie McCarthy, Eleanor McClelland, Paula Mobily, Sue Moorhead, Sandra Powell, Elizabeth Swanson, Kay Weiler, Janet Williams
Associate professors emeritae: Mildred Freer, Orpha Glick, Nancy Jordison, Jean Lakin, Marjorie Lyford, Anna E. Overland, Eila H. Rasmussen, Jean Reese
Clinical associate professor: Edward S. Thompson
Assistant professors: Howard K. Butcher, Carolyn Crowell, Phyllis Cullen, Kristine Kwakkeboom, Sonja Lively, Frances Milde, Lavonne Rather, Beverly Saboe, Annette Scheffel, Julia Seng, Janet Specht, Mary Stewart-Dedmon, Janette Taylor
Assistant professors emeritae: Merle Heick, Louise Kruse
Clinical assistant professors: Patricia Clinton, Teresa Judge-Ellis, Deborah Schoenfelder, Pamela Willard
Lecturers: Pam Ballard, Mary Berg, Teresa Boese, Veronica Brighten, Debra Buene, Kathleen Fleming, Karen Griffith, Todd Ingram, Louise Jones, Jean King, Susan Lehmann, Nicollet Markovetz, Sheryl Miller, Patricia Nelson, Anita Nicholson, Kelly Smith, Connie Trowbridge, Karin Zuehls
Undergraduate degree: B.S.N.
Graduate degrees: M.S.N., Ph.D. in Nursing
Graduate nondegree programs: certificate in nursing informatics, advanced practice nursing
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 health center provides an unusually fine setting for nursing preparation because the educational and clinical resources that are needed to educate nurses are available on or near the campus. Faculty and students participate fully in University life and contribute their time, interest, and abilities to the many general and special activities of a major research university.

The college’s baccalaureate and master’s degree programs are accredited by the Commission on Collegiate Nursing Education (CCNE), an autonomous accrediting arm of the American Association of Colleges of Nursing (AACN). The baccalaureate and master’s programs also are approved by the Iowa Board of Nursing. The anesthesia nursing program is accredited by the Council on Accreditation of Nurse Anesthesia Educational Programs.

Graduates of the baccalaureate program qualify to take the licensure examination required for practice as registered nurses. Graduates of advanced practice majors in the graduate program are eligible to take certification examinations and apply for ARNP licensure.

**Undergraduate Program**

The Bachelor of Science in Nursing (B.S.N.) at The University of Iowa is designed to provide preparation for careers in the hospital care of patients and in community agencies such as public health services, schools, homes, and industries. It also serves as the base for graduate study in nursing.

In addition to the advantages of combining general education with specialized career preparation, a college or university program offers the advantages of full participation in the social, cultural, and recreational activities of a highly diverse campus community. In nursing, no less than in other pursuits, a college or university background enables people not only to be prepared for a career but to be able to achieve a life of thought and action informed by knowledge, introspection, and contemplation.

The nursing major provides a basis for nurses’ roles in wellness and health promotion, in acute care, and in long-term care for chronic illness. The professional nurse provides 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 program’s goal is to produce graduates who are competent, committed, creative, and compassionate.

The 128-semester-hour course of study consists of 63 semester hours of liberal arts General Education courses and supportive prenursing courses, and 65 semester hours of course work in the nursing major. Students can expect to complete the program in four or four-and-a-half academic years.

Nursing courses are based on the concepts of health, deviations from health, and nursing intervention and are presented at progressive levels of complexity from the sophomore through the senior year. 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 clinical experiences that are selected from more than 60 agencies in the state.

**Approaches to the College of Nursing**

Students may complete their entire program at Iowa, enrolling during their first year-and-a-half in the College of Liberal Arts. Or they may transfer from another institution that offers a two-year sequence of specific courses approved by The University of Iowa College of Nursing.

Highly qualified students may be admitted early to the College of Nursing if they have an ACT composite score of 29 or above or SAT scores of 1250 or above, graduate in the top 10 percent of their high school class, and have no high school unit deficiencies. For more information, contact the college.

Cooperating state institutions and independent colleges that participate in the transfer-plan include Iowa State University; the University of Northern Iowa; Upper Iowa University; and Briar Cliff, Morningside, Loras, Luther, Clarke, Simpson, and Warburg colleges. Participating community colleges are located in Ankeny, Bettendorf, Boone, Calmar, Carroll, Cedar Rapids, Clarinda, Clinton, Davenport, Des Moines, Estherville, Fort Dodge, Marshalltown, Mason City, Muscatine, Ottumwa, Sheldon, and Waterloo.

Completion of the transfer sequence at a cooperating institution does not guarantee admission to the College of Nursing; admission standards for transfers are the same as for all other College of Nursing applicants. Prospective transfer students who want more information about this plan should contact the cooperating institution of their choice.

**Cooperative Education Summer Clinical Internship**

High-achieving undergraduates have the opportunity to develop clinical skills through placement in a summer employment setting. Internships are available in hospitals, community health settings, and occupational health services in Iowa and surrounding states. This program affords undergraduates the opportunity to work closely with a preceptor while being employed, and with a faculty member in pre- and post-internship seminars.

Internships are available to qualified undergraduate students who have completed three semesters of clinical nursing courses and have maintained a nursing grade-point average of 3.00 or higher. Interested students should contact the College of Nursing coordinator of the Cooperative Education Summer Clinical Nursing Internship Program.

**Study Abroad**

The College of Nursing advocates study abroad as a rich educational experience for students. Nursing students have the opportunity to encounter another culture directly through the college’s cultural nursing experiences abroad. The intent of these regular programs is to introduce students to health care systems in other countries. In addition, students learn about health conditions and circumstances not widely prevalent in the United States (e.g., diphtheria, nutritional deficiencies). For more information, contact the College of Nursing’s Office of Student Services.

**Aging Studies**

Students in the College of Nursing may participate in the Aging Studies Program, which is designed to provide undergraduate students a multidisciplinary approach to gerontology. Students plan their course of study with their academic adviser in close cooperation with the Aging Studies Program coordinator. Nursing students who successfully complete 18 semester hours of acceptable coursework in aging studies are awarded a certificate of completion by the University. Nursing students also have the option of completing a minor in aging studies by taking 15 semester hours outside of the major in courses approved by the program. See “Aging Studies Program” in the College of Liberal Arts section of the Catalog.

**Honors**

The University of Iowa College of Nursing Baccalaureate Honors Program provides seminars and independent study experience for qualified students. To be eligible, students must have completed the first year of nursing coursework and maintain a cumulative grade-point average of at least 3.25 and a nursing major grade-point average of at least 3.50. The honors program 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.

**Registered Nurses**

The R.N.-B.S.N. progression program offers registered nurses the opportunity to build on their nursing knowledge and experience base. The nursing major sequence is designed specifically for registered nurses, with a focus on nursing process and health assessment; community health care clinical settings; leadership, management, and research opportunities; and nursing professionalism. Each R.N.-B.S.N. student is assigned to a College of Nursing faculty member for continued academic advising and curriculum planning.
The College of Nursing participates as a receiving institution in the Iowa Statewide Articulation Plan for Nursing Education: R.N. to baccalaureate. At the time of admission to the College of Nursing, students declare one of the four options available within the plan. Plans of study are developed and credit is awarded according to the option the student declares.

Students may transfer previous course work completed at another college or university to satisfy some prerequisites to the nursing major. They may complete the balance of prerequisites at The University of Iowa and at many other colleges and universities in Iowa.

Once prerequisites are met, students may complete the R.N.-B.S.N. nursing major sequence in one calendar year in a sequence that includes three clinical and five nonclinical nursing courses. R.N.s may study on campus and at designated satellite sites. Registered nurses planning to enter the baccalaureate program should obtain special information and advising from the College of Nursing.

Faculty Advisers
Advisers from the Undergraduate Academic Advising Center advise premuring students. After admission to the College of Nursing, each student is assigned a College of Nursing faculty adviser.

Student Organizations
College of Nursing undergraduate students are eligible for membership in the state and national associations of nursing students, but they also have their own organization, The University of Iowa Association of Nursing Students (UIANS), which provides opportunity for professional growth and development in nursing. UIANS representatives are members of The University of Iowa Student Government (UISG), and there is a UIANS representative on the Academic Council of the College of Nursing.

College of Nursing graduate students also have an organization, the Association of Graduate Nursing Students (AGNS). AGNS provides opportunities for professional growth, sharing of research, and representation on various college and University committees.

Expenses
Students pay the general University fees throughout the program. They also must purchase uniforms, white shoes, a stethoscope, a watch with a full-sweep second hand, and supplies and materials for required nursing courses. Students arrange for their own health screening requirements, health insurance, professional liability insurance, and transportation once they are enrolled in clinical nursing courses.

Mandatory Health Insurance
All students in the College of Nursing must show annual verification that they have obtained and currently hold health insurance sufficient to satisfy the following minimal standards of coverage (or an equivalent alternative 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 both physician services for treatment of emergencies, illness, accident, injury, X-ray, and lab services.

Professional liability Insurance
All students in the College of Nursing are required to carry professional liability insurance throughout the duration of their program. Agencies in which students are involved in clinical practicums require that students have insurance coverage. Entering students in the College of Nursing are provided information about this requirement and must show verification that they have purchased and currently hold professional liability insurance with a minimum coverage of $1 million per single occurrence.

Financial Aid
In addition to general assistance available to University students, there are assistance programs specifically for nursing students. Information about financial assistance is available from the University’s Office of Student Financial Aid.

Admission
High School Background
The College of Nursing strongly recommends four years of English, three years of social science, three years of mathematics, two years of one foreign language, and one year each of biology and chemistry, and one-half year of physics, plus other college preparatory courses selected with the help of the high school counselor.

College Background
APPLICATION AND ADMISSION REQUIREMENTS
To apply for admission to the undergraduate program in nursing, each student must qualify for admission to The University of Iowa and meet these requirements:

- completion of all prerequisites (or current enrollment in any remaining prerequisites);
- a grade-point average of at least 2.50 on a 4.00 scale.

Applicants whose first language is not English are required to present a score of at least 550 on the Test of English as a Foreign Language (TOEFL). Registered nurses educated outside of the United States are required to present verification of having passed the CGFNS examination and specified ACT/PEP baccalaureate nursing examinations.

Core Performance Standards
Applicants to the College of Nursing are expected to be capable of completing the entire nursing curriculum and of earning a Bachelor of Science in Nursing. The nursing curriculum requires demonstrated proficiency in a variety of cognitive, problem-solving, manipulative, communicative, and interpersonal skills. Therefore, College of Nursing students must meet the following performance standards.

- Possess and use critical thinking skills sufficient for clinical judgment (e.g., identify cause-effect relationships in clinical situations, develop nursing care plans)
- Demonstrate interpersonal abilities sufficient for interaction with individuals, families, and groups from a variety of social, emotional, cultural, and intellectual backgrounds (e.g., establish rapport with patients, clients, colleagues)
- Possess and use communication skills sufficient for interacting with others (e.g., explain treatment procedures, initiate health teaching, observe patient/client responses, document and interpret nursing actions and patient/client responses)
- Administer cardiopulmonary procedures and other clinical procedures necessary for nursing care; calibrate and use equipment, position patients and clients
- Possess the tactile abilities (with or without an assistive device) sufficient for performing physical assessment (e.g., perform palpation functions of physical exam and those related to nursing interventions)

The examples above are not all-inclusive. Applicants who may not meet these standards are encouraged to contact the associate dean for academic affairs for a personal interview.

Preclinical Background
In addition to the biological and behavioral science courses required for admission to the college, students must satisfy the following requirements before beginning clinical course work.

Rhetoric: 8 semester hours (may be satisfied by testing for advanced standing); a student who has earned 6 semester hours of credit in English composition may complete the speech component after admission.

Mathematics: three years of high school mathematics, or a score greater than or equal to 26 on the mathematics battery of the ACT, or completion of a college course in mathematics comparable to or more advanced than Intermediate Algebra (22M:002).

Physics: one-half year of high school physics or equivalent.

Other course work: animal biology, microbiology, human anatomy, psychology,
STANDARDS
To be considered for admission to the College of Nursing, the applicant must have completed all prerequisites satisfactorily.

American College Tests
All entering first-year and undergraduate transfer students who present fewer than 24 semester hours 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 on the ACT, write to the American College Testing Program, Box 45 1, Iowa City, Iowa 52243.

Selection Factors
The college’s admission committee recommends to the dean the applicants who appear to be best qualified. However, fulfillment of minimum admission requirements does not guarantee admission to the College of Nursing. The committee may require personal interviews. A physical examination report and specific health screening requirements must be on file at Student Health Service 10 days before the class opens for the first clinical nursing course.

Application Deadlines
Fall semester: March 1
Summer session (for R.N. students only): January 15
Spring semester: October 1

Graduate Programs
Master of Science
The master of science curriculum is designed to build on general and professional baccalaureate study. Graduation from an approved baccalaureate degree program is one of the admission requirements. Options are available for registered nurse applicants with a non-accredited B.S.N., a non-nursing B.A. or B.S., or a B.S.N. from a foreign country.

The curriculum consists of a core component and areas of specialization enhanced by supporting course work in the College of Nursing or in related disciplines. The number of semester hours required for graduation ranges from 40 to 51, depending on the concentration area.

Students may take two to three supporting courses related to the nursing specialization in the social, behavioral, or biological sciences or in business administration, law, or health management and policy.

Degree Requirements
The curriculum ordinarily requires four semesters of full-time study for completion. Part-time study is available for some specializations. The M.B.A./M.S.N. and Anesthesia Nursing programs require a minimum of six semesters of full-time study. Students must maintain a grade-point average of at least 2.50 and must successfully complete a master’s thesis, master’s project, or master’s portfolio.

The master’s curriculum consists of the following components.

ADVANCED NURSING CORE
Core courses are taken by all students in the program. The core consists of 12 semester hours of course work in leadership in nursing (3 semester hours), research application (3 semester hours), health policy and economics (3 semester hours), and nursing informatics and technology (3 semester hours).

NURSING SPECIALIZATION
Specialization allows students to build a special area of knowledge, practice, and performance that extends beyond the advanced nursing core. Clinical specialization may be in any of the following options: adult and gerontological nursing, child health nursing, genetics nursing, community health nursing, psychiatric/mental health nursing, anesthesia nursing, pediatric nurse practitioner, adult/gerontological nurse practitioner, and family nurse practitioner.

Nonclinical options include nursing administration, the M.B.A./M.S.N. joint degree program, and informatics. Some options require special acceptance procedures. Students with unique career goals have the option of modifying their plans of study under the direction of their academic advisers.

Students in the practitioner programs take an advanced clinical core that includes advanced physiology, pharmacology, health assessment, health promotion, and a professional role course. Students in other clinical options may be required to take one or more of these courses. Some of the clinical core courses are open to other students. Students in a clinical or management specialization develop their knowledge and practice through course work and fieldwork.

SUPPORTING COURSES
Available semester hours for supporting courses vary with each specialization area. Supporting course work can be selected from various academic departments at the University and should relate to the student’s interest and specialization area.

Some areas of specialization require some course work to be taken in other departments. For example, students in the community health nursing specialization must complete an upper-division or equivalent course in epidemiology and a management course; students in the management option select supporting courses from business, health management and policy, or allied study areas. Students select supporting course work in collaboration with their faculty adviser.

THESIS/PROJECT PORTFOLIO
All master’s students at the University must take a final examination. Students in the College of Nursing satisfy this requirement by completing a thesis, a master’s project, or a portfolio. Students, with their advisers, select the option that best serves their individual career objectives.

The thesis is a systematic inquiry into a nursing problem. Methodologies may include historical research, case studies, analytical literature review, surveys, or experimental studies that meet the requirements of the Graduate College. Students earn a total of 5 semester hours of credit for the thesis.

The master’s project is an in-depth synthesis and analysis of a chosen topic in nursing. The 15- to 20-page paper of publishable quality may not replicate previous course assignments. Students earn 2 semester hours for the master’s project.

The master’s clinical portfolio is a written description of the clinical experiences that contributed to the development of the advanced practice role and a self-assessment of clinical competencies and areas for future growth. Students in the nurse practitioner, nurse anesthesia, and clinical specialty tracks are eligible to complete the clinical portfolio. The professional portfolio is a written description of practicum experiences and competencies. Students in the nonclinical tracks are eligible to complete the professional portfolio. Students earn no semester hours for the portfolio.

Admission
Students seek admission to the master’s program in nursing through direct application to The University of Iowa Graduate College.

Minimum requirements for admission to the Graduate College include a completed application; official transcripts from other institutions attended; Graduate Record Examination (GRE) General Test scores: a passing score on the Test of English as a Foreign Language (TOEFL), when appropriate; and a grade-point average of at least 2.50 for regular admission or 2.30 for conditional admission.

In addition to the general requirements for admission to the Graduate College, the College of Nursing requires that applicants must provide or have fulfilled the following:

- a bachelor’s degree with a major in nursing from an accredited program; options are available for registered nurse applicants with a non-accredited B.S.N., a non-nursing B.A. or B.S., or a B.S.N. from a foreign country.
- the legal requirements for the practice of nursing in Iowa; an undergraduate grade-point average of 3.00 or higher or a demonstrated ability to do graduate work;
- current written recommendations from three persons familiar with the applicant’s competence in the practice of nursing and potential for leadership and scholarship (forms required);
- completion of an upper-division nursing research course in the undergraduate program; and
- successful completion of an upper-level (or equivalent) statistics course within five years of registering for 096:206 Nursing Science and Inquiry.
Students whose first language is not English must earn a score of at least 215 on the Test of English as a Foreign Language (TOEFL) computer-based test.

Applications for admission to the master’s degree program are reviewed on a continuing basis. For review, the applicant’s file must be complete, with all relevant materials submitted. Application deadlines are February 1 for fall admission, October 1 for spring admission, and February 1 for summer admission. Initial course enrollment may begin any term. Practitioner programs and the anesthesia program admit students for initial enrollment in fall semester only. The anesthesia program’s application deadline is October 1.

All Graduate College regulations pertaining to academic standing, probation, and dismissal are applicable to graduate students in nursing. Transfer credits applicable to the master’s degree program are limited and must be approved by the director of the graduate program in nursing and by the student’s adviser. Course work taken 10 years or more before the final examination must be updated, according to University policy.

Joint Master’s Program in Nursing, Business

The joint M.B.A./M.S.N. program is designed for students with previous clinical and administrative experience. Applicants to this program must be accepted for graduate study in both programs. The joint program requires a total of 61 semester hours. For more information, contact the Office of Student Services.

Post-M.S.N. Certificate

A post-M.S.N. certificate is available for the pediatric, adult/gerontology, and family practitioner specializations, the psychiatric/mental health specialization, and informatics for nurses with a master’s degree. Students are not required to take the master’s degree core courses. Each student’s graduate course work is evaluated to determine which courses the student must take to earn the certificate.

Doctor of Philosophy

The Ph.D. in nursing program prepares scientists to conduct research in nursing, extend the knowledge base relevant to nursing, and contribute to the body of knowledge in the discipline of nursing. Study requires expertise in clinical nursing and competence in research that relates to the practice of nursing and the delivery of health care.

The curriculum has three focal areas from which students choose: nursing in aging, nursing administration, and child and family nursing. Graduates of the program aspire to careers as researchers, college and university faculty members, consultants, and as leaders in the nursing profession, in health policy-making agencies, and in health care delivery systems.

**Degree Requirements**

All candidates must take the following courses.

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>096:300</td>
<td>Classics in the Social Evolution of Modern American Nursing</td>
<td>3 s.h.</td>
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<tr>
<td>096:310</td>
<td>Advanced Nursing Informatics</td>
<td>3 s.h.</td>
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<tr>
<td>096:320</td>
<td>Economics of Health Care and Nursing</td>
<td>3 s.h.</td>
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<tr>
<td>096:330</td>
<td>Nursing’s Role in Health Care Policy</td>
<td>3 s.h.</td>
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<tr>
<td>096:340-341</td>
<td>Nursing Theory Construction I-II</td>
<td>6 s.h.</td>
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<tr>
<td>096:405</td>
<td>Family Nursing Research</td>
<td>3 s.h.</td>
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<tr>
<td>096:410</td>
<td>Research of Biological Phenomena and Interventions for the Elderly</td>
<td>3 s.h.</td>
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<tr>
<td>096:420</td>
<td>Geriatric Mental Health Research</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>096:430</td>
<td>Nursing Research in Sociocultural Phenomena and Interventions for the Elderly</td>
<td>3 s.h.</td>
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<tr>
<td>096:440</td>
<td>Research Utilization Residency in Care of the Elderly</td>
<td>3 s.h.</td>
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<tr>
<td>096:450</td>
<td>Research Seminar in Nursing Administration I: Organizational Systems Concepts</td>
<td>3 s.h.</td>
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<tr>
<td>096:451</td>
<td>Research Seminar in Nursing Administration II: Health Care System Concepts</td>
<td>3 s.h.</td>
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<tr>
<td>096:460</td>
<td>Innovations in Nursing Management</td>
<td>3 s.h.</td>
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<tr>
<td>096:480</td>
<td>Residency in Nursing Service Administration</td>
<td>3 s.h.</td>
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<td>096:405</td>
<td>Family Nursing Research</td>
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</tr>
<tr>
<td>096:445</td>
<td>Research Residency in Child and Family Nursing</td>
<td>3 s.h.</td>
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<tr>
<td>096:415</td>
<td>Genetic Nursing Research</td>
<td>3 s.h.</td>
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<tr>
<td>096:425</td>
<td>Research in Sociocultural Perspectives for Family and Women’s Health</td>
<td>3 s.h.</td>
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<tr>
<td>096:435</td>
<td>Research in Cognitive and Behavioral Interventions for Children</td>
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**Aging Focus**

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<td>Geriatric Mental Health Research</td>
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<td>096:430</td>
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<td>096:460</td>
<td>Innovations in Nursing Management</td>
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</tr>
<tr>
<td>096:480</td>
<td>Residency in Nursing Service Administration</td>
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**Child and Family Nursing Focus**

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<td>3 s.h.</td>
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<tr>
<td>096:445</td>
<td>Research Residency in Child and Family Nursing</td>
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<tr>
<td>096:435</td>
<td>Research in Cognitive and Behavioral Interventions for Children</td>
<td>3 s.h.</td>
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</table>

**COMPREHENSIVE EXAM, DISSERTATION**

All students must complete a written comprehensive examination. Candidates earn 12 semester hours for work on the dissertation by completing 096:497 Dissertation Research Seminar: Research Application and Advanced Design, a dissertation prospectus, the dissertation, and an oral defense.

**Admission**

Students applying to the Ph.D. program must provide or have fulfilled the following requirements:

- completion of an accredited basic nursing program;
- completion of a master’s degree program;
- current R.N. licensure to practice nursing;
- GRE General Test, preferably within the past five years;
- a minimum of one graduate-level, 3-semester-hour course in research and inferential statistics;
- a two- or three-page statement describing educational objectives and identifying a focal area for doctoral study;
- three recommendations from professionals in the field; and
- a current curriculum vitae.

One year of nursing experience is preferred.

Students whose first language is not English must earn a score of at least 215 on the Test of English as a Foreign Language (TOEFL) computer-based test.

Graduate Certificate in Informatics

A certificate in nursing informatics is available for graduate students. Course work for the certificate focuses on methods and technologies of information handling in nursing. Certificate students must earn 20 semester hours in courses that cover the development, support, and evaluation of applications, tools, processes, and structures used to manage data for patient care and administrative support.

Professional Improvement

Some registered nurses may wish to take University of Iowa course work to fulfill professional or personal improvement objectives. Such individuals may request admission in the professional improvement (P.I.) category. This admission status allows students to take some graduate courses at the University without commitment 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 must be submitted to fulfill the University requirement before the end of first semester registration. 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 professional improvement student has no direct bearing on acceptance as a master’s or doctoral candidate, P.I. students are required to follow the application procedure described in the preceding section if they seek admission as master’s or doctoral degree candidates. Only 6 semester hours or two required nursing core courses taken under the professional improvement status may be used to fulfill the M.S.N. requirements. P.I. students may not enroll in doctoral courses.

Continuing Education

Through continuing education, the college offers nonacademic, short-term programs for registered nurses. Continuing education units (CEUs) are
awarded for each program on the basis of one unit per 10 clock hours of instruction. The College of Nursing is approved by the Iowa Board of Nursing as an approved provider, number 1, and is accredited by the American Nurses’ Association Board of Accreditation and the National Association of Pediatric Nurse Associates and Practitioners.

Facilities

The Nursing Building is centrally located on the University’s main campus, in close proximity to the Colleges of Medicine, Pharmacy, and Dentistry and The University of Iowa Hospitals and Clinics, Bowen Science Building, and the Hardin Library for the Health Sciences.

Completed in 1971, the building consists of five floors with varied and specialized facilities. Administrative offices are located on the first floor. Faculty offices are located on every floor except the second, which is used entirely for classrooms, laboratories, and Learning Resource Services, which includes a technology laboratory. Additional classrooms and laboratories are located throughout the building. Conference rooms, student lounges, and meeting rooms are conveniently located. Research and computer facilities in the building provide direct access to the University’s computing facilities and to college-owned microcomputers.

Courses

Primarily for Undergraduates

096:030 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. Prerequisite: 031:001. Same as 155:030.

096:050 Perspectives on Health Care Systems 3 s.h.
Health care delivery modes, resources, economics; contemporary problems and policies that influence health care; emphasis on the context of health care delivery. Facility with e-World Web required.

096:051 Art and Science of Nursing 3 s.h.
Integrated view of theories from nursing, the arts, the sciences; principles of health promotion, maintenance, and restoration of health; integration and application of knowledge and skills to design, implement, and evaluate health care for individuals, families, and communities. Prerequisites: 096:135 and 096:136.

096:083 Diversity and Oppression is Health Care 1-2 s.h.
Messages about oppressed minority groups, how these messages relate to health care.

096:114 Human Pathophysiology I 3 s.h.
Normal and abnormal function of human cells, tissues, and organ systems. Focus on cardiovascular, respiratory, renal, gastrointestinal, endocrine, and reproductive systems, and on processes of metabolism and homeostasis. Prerequisites: approved course in biology, microbiology, or anatomy, or consent of instructor.

096:115 Human Pathophysiology II 3 s.h.
Normal and abnormal function of human cells, tissues, and organ systems over the lifespan; focus on processes of communication, control, defense, and repair. Prerequisites: approved courses in biology, microbiology, and human anatomy; or consent of instructor.

096:124 Pharmacotherapeutics in Nursing 1 s.h.
Basic principles of pharmacotherapeutics and pharmacologic interventions; focus on mechanism of drug actions in patient treatment. Prerequisite: 096:110. Pre- or corequisite: 096:119.

096:126 Communication for Health Professionals 2 s.h.
The communication process in health care settings; emphasis on theory-based strategies to improve communication with individuals, families, other health care professionals.

096:127 Health Assessment Across the Life Span 4 s.h.
Knowledge and skills needed to perform holistic health assessments of individuals across the life span; emphasis on history taking, physical assessment skills; laboratory procedures. Prerequisites: courses in anatomy, human development and behavior, and animal biology.

096:128 Seminar: Socialization into Nursing Practice 2 s.h.
Professional socialization and nursing issues related to the work setting; enhancement of nursing knowledge and skills through employment in a health care setting. Admission to College of Nursing required.

096:134 Basic Concepts of Nursing Care 4 s.h.
Physiological and behavioral concepts, nursing interventions, and activities across settings and populations. Based on nursing interventions classification taxonomy. First in a two-semester sequence. Open only to nursing majors. Pre- or corequisites: 096:114 or 096:115, and 096:127.

096:135 Complex Concepts of Nursing Care 4 s.h.

096:136 Core Clinical Practicum 4 s.h.
Acute care of adult clients in the clinical setting; in-depth practicum experience applying basic and complex concepts of nursing care; focus on clinical decision making skills. Prerequisites: 096:126, 096:127, and 096:134. Corequisite: 096:135.

096:139 Parent-Child Nursing 3 s.h.
Health promotion, maintenance, and restoration for parents, infants, children, and adolescents in childhood and child-rearing families. Prerequisite: 096:135.

096:140 Parent-Child Nursing Practicum 3 s.h.
Principles of health promotion, maintenance, and restoration applied among parents, infants, children, and adolescents in childbearing and child-rearing families. Prerequisite: 096:135.

096:142 Gerontological Nursing 3 s.h.
Nurse’s role in promoting, maintaining, and restoring the health of aging adults; nursing science applied to care of older adults in diverse settings. Prerequisite: 096:135.

096:143 Research for Nursing Practice 2 s.h.
The research process and its application to nursing. Prerequisite: an approved statistics course.

096:153 Public Health Nursing 3 s.h.
Nursing’s role in the relationship between community conditions and public health: impact of significant historical, social, political, economic, and legal factors on development of the nursing discipline. Senior standing or consent of instructor required.

096:158 Clinical Nursing Internship 8 s.h.
Independent internship in one of a variety of health care settings to promote role transition, lifelong learning; emphasis on integration and application of knowledge and skills to design, provide, manage, and coordinate care. Open only to seniors in nursing.

096:159 Contemporary Nursing Practice Issues 3 s.h.
Identification, exploration, analyses of selected issues in nursing and health care: impact of significant historical, social, political, economic, and legal factors on development of the nursing discipline. Senior standing or consent of instructor required.

096:160 Dimensions of Professional Nursing 3 s.h.
The nursing discipline; identification, exploration, analysis of contemporary issues and trends in nursing, professional roles and responsibilities; the health care environment; importance of nursing science, theory, and research to nursing practice. Computer literacy and R.N.B.S.N. student status or consent of instructor required.

096:191 Health Assessment 4 s.h.
Health assessment of adults; experience demonstrating assessment skills, compiling a health history, conducting a physical exam, and developing nursing diagnoses for clients. R.N.B.S.N. student status or consent of instructor required.

096:192 Community Health Nursing 3 s.h.
Nursing’s role in the relationship between community conditions and public health: impact of significant historical, social, political, economic, and legal factors on development of the nursing discipline. Senior standing or consent of instructor required. Prerequisites: 096:190 and 096:191.

096:193 Community Health Nursing Practicum 3 s.h.
Experience applying principles of public health and nursing skills and knowledge to primary, secondary, and tertiary disease prevention problems of individuals, families, and groups. R.N. licensure in state of practicum required. Prerequisites: 096:190 and 096:191, or consent of instructor. Pre- or corequisite: 096:192.

096:194 Leadership and Care Management in Professional Nursing Practice 3 s.h.
Nursing leadership and management in a dynamic practice environment; focus on context in which nurses practice, leadership and management principles in changing health care system. Prerequisites: 096:192, 096:193, and 096:197; or consent of instructor.

096:195 Practicum for Leadership and Care Management In Professional Nursing 3 s.h.
Experience applying concepts of leadership, management, and evidence-based practice in a variety of settings, development of individualized plan of study for the experience. Prerequisites: 096:192, 096:193, and 096:197; or consent of instructor. Pre- or corequisite: 096:194.

096:196 Special Studies in Nursing 3 s.h.
Identification, exploration, and analysis of contemporary issues that confront the professional nurse; the practice of nursing, regulation of health care systems, available resources. Prerequisite: 096:192 or consent of instructor.

096:197 Research for Practicing Nurses 3 s.h.
Research process, its application to nursing practice for RN students; conceptual basis, methodology, data collection, data analysis, presentation and utilization of research. Prerequisite: an approved statistics course; and 096:190 or consent of instructor.

Primarily for Graduates

The College of Nursing is revising its courses in adult-gerontology and child health nursing. For more information, contact the college.

Courses are offered only if minimum enrollments are maintained.

096:170 Introduction to Case Management 2 s.h.
Purpose and models of case management; role and work redesign for effective outcomes of care; efficient resource use; critical paths, care management.

096:184 Epidemiology in Health Care 3 s.h.
Application of epidemiological concepts to health care; epidemiological concepts and methods, design and analysis of data sets; experience using epidemiological software and critiquing epidemiological research designs; and an upper-level statistics course, or consent of instructor.

College of Nursing 509
Admission to practitioner program required. Pre- or corequisites: planning, implementing, and evaluating interventions designed across the lifespan. Graduate standing or consent of instructor required.

096:202 Children with Chronic Health Conditions 3 s.h.
Assessment and management of children with chronic health conditions, and their families. Prerequisites: 096:206, 096:208, and 096:214

096:203 Practicum: Children with Chronic Health Conditions I 3 s.h.

096:204 Practicum: Children with Chronic Health Conditions II 3 s.h.
Continuation of 096:203, which is prerequisite; emphasis on management of complex health care problems.

096:205 Practicum: Daily Management of Children with Chronic Health Conditions 1 s.h.
Management of normal, routine activities in context of child’s chronic health condition Consent of instructor required.

096:206 Nursing Science and Inquiry 3 s.h.
Research design and analysis for examining, applying, and using nursing science. Prerequisites: 096:143 or equivalent, and an upper-level statistics course within past five years.

096:208 Leadership for Advanced Nursing Practice 3 s.h.
Roles and behaviors for leading others and influencing health care delivery.

096:209 Context for Advanced Nursing Practice 3 s.h.
Global, economic, organizational, political, and technological contexts for advanced nursing practice.

096:213 Physiology for Advanced Clinical Practice 3 s.h.
Regulation of cellular, organ, and system function; regulation of internal milieu; functional interrelationships among body systems; cellular and bodywide mechanisms of self-defense; illustrative examples of pathological phenomena Prerequisites: anatomy, physiology, microbiology, and pathophysiology Courses or equivalents; or consent of instructor.

096:214 Advanced Health Assessment for Clinical Practice 3 s.h.
Knowledge and skills necessary for advanced health assessment of individuals and families across the life span. Graduate standing in nursing or consent of instructor required.

096:219 Primary Care: Infants, Children, and Adolescents I 3 s.h.

096:220 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 Prerequisite: 096:219 or 096:200. Same as 096:219.

096:221 Primary Care: Pediatric Nurse Practitioner I Intensive Practicum 4 s.h.
In-depth practicum synthesizing clinical management and role enactment; opportunity for discussion and analysis of practice and role issues. Prerequisites: 096:220 and 096:285.

096:222 Health Promotion and Intervention for Care: Adult Practice 3 s.h.
Theories of health promotion in primary care, levels of prevention, epidemiological principles and methods; specific interventions designed to maintain, promote, optimize health across the lifespan. Graduate standing or consent of instructor required.

096:223 Clinical Applications for Health Assessment and Health Promotion 3 s.h.
Advanced health assessment and promotion skills applied to planning, implementing, and evaluating interventions designed to maintain, promote, and optimize health across the lifespan. Admission to practitioner program required. Prerequisites: 096:214 and 096:222.

096:224 Pharmacotherapeutics for Advanced Clinical Practice 3 s.h.
Pharmacology, pharmacokinetic, and pharmacodynamic principles of advanced clinical practice; classes of drugs frequently used in management of common clinical conditions; legal considerations in prescriptive authority. Prerequisite: 096:213 or consent of instructor.

096:225 Adults and Older Adults with Chronic Health Conditions 3 s.h.
Diagnoses, interventions, and outcome evaluation for adults with chronic illness; analysis of research base regarding common life style alterations. Prerequisites: 096:206 and 096:222.

096:226 Practicum: Adults and Older Adults with Chronic Health Conditions 3 s.h.
Advanced knowledge and skill in a specialty area, with focus on adult or elderly client. Prerequisite: 096:225.

096:227 Clinical Special Practicum: Adults and Older Adults 3 s.h.
Experience in clinical specialist role, caring for adults or elderly clients. Prerequisites: 096:226 and 096:232.

096:228 Advanced Practice Genetic Nursing Practicum I 2 s.h.
Integration and application of advanced practice in genetic nursing assessment and counseling skills with individuals and families. Corequisite: 096:228 or consent of instructor.

096:229 Advanced Practice Genetic Nursing Practicum II 2 s.h.
Application of advanced practice in genetic nursing; emphasis on conditions that present in the adult years and the nurse’s role in an interdisciplinary genetic delivery system. Prerequisite: 096:229. Corequisite: 096:229.

096:230 Advanced Practice Genetic Nursing II 3 s.h.
Genetic conditions that present in adult years; gene detection, ethical and social aspects of genetic health care delivery, professional issues in the delivery of genetic care. Prerequisites: 096:228 and 096:229. Corequisites: 07C:278 and 096:231.

096:231 Advanced Practice Genetic Nursing Practicum II 2 s.h.
Application of advanced practice in genetic nursing for infants, children, and role issues. Prerequisites: 096:228 or consent of instructor.

096:232 Professional Aspects of Advanced Nursing Practice 3 s.h.
Advanced nursing role competencies and related settings in which advanced nursing practice occurs; history and development, core competencies, advanced practice roles, practice management issues. Prerequisite: 096:208.

096:234 Advanced Community Health Assessment 3 s.h.
Health of communities, process of assessment; emphasis on conceptual models from public health that focus on select populations, community assessment. Offered fall semesters of even years. Prerequisite: course in epidemiology.

096:235 Advanced Community Health Nursing Practicum I 2 s.h.
Integration and application of advanced community health assessment knowledge, skills; nurse’s role in population-focused practice. Open only to M.S.N. students. Prerequisite: a course in epidemiology. Corequisite: 096:234.

096:236 Advanced Community Health Intervention and Evaluation 3 s.h.
Development, implementation, evaluation of health promotion and disease prevention strategies for select populations, communities. Offered spring semesters of odd years. Prerequisite: 096:224.

096:237 Advanced Community Health Nursing Practicum II 2 s.h.
Application of knowledge and skill for advanced community health intervention, outcome evaluation. Open only to M.S.N. students. Offered spring semesters of odd years. Pre- or corequisite: 096:236.

096:238 Advanced Practicum in Advanced Community Health 3 s.h.
Synthesis of advanced public health theory, nursing knowledge; in-depth experience synthesizing clinical management, role enactment. Offered summer sessions of odd years. Prerequisites: 096:235 and 096:237.

096:241 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: 096:214, 096:222, and 096:224.

096:242 Primary Care: Adult/GNP Clinical Practice I 3 s.h.

096:243 Primary Care: Adult/GNP Clinical Practice II 3 s.h.
Continuation of 096:242, which is prerequisite; clinical management of health care problems related to gastrointestinal, genitourinary, endocrine, immune systems. Corequisite: 096:284.

096:244 Primary Care: Adult/Genetic Nurse Practitioner III Intensive Practicum 4 s.h.
Transition from student to advanced adult/genetrical nurse practitioner; in-depth primary care experience synthesizing aspects of clinical management and role enactment. Prerequisite: 096:243.

096:246 Nursing Education: Process, Roles, and Strategies 3 s.h.
Role of the educator through study, application of teaching/learning theories; learning tasks of students in nursing education programs. Offered fall semester of odd years. Pre- or corequisite: 096:208 or consent of instructor.

096:247 Curriculum Development in Nursing Education 3 s.h.
Societal, educational, professional factors in undergraduate curriculum design; evaluation of components in basic nursing education programs. Offered spring semester of even years. Prerequisite: 096:246.

096:250 Psychiatric/Mental Health Nursing Theory 3 s.h.
Basic psychological principles, theories related to mental health and interactions between physical and mental health; psychological theory viewed through framework of lifespan development, infancy through adulthood. Graduate student standing or consent of instructor required.

096:251 Psychiatric/Mental Health Nursing: Advanced Practice 3 s.h.
Advanced psychiatric nursing practice with selected populations; definition and expansion of practice based on the integration of theory, standardized languages, research, self-evaluation. Prerequisite: 096:250.

096:252 Psychiatric/Mental Health Nursing Practice with Individuals 3 s.h.
Therapeutic models that guide clinical practice with individuals; major psychological and biological theories applied to nursing process with individuals in a variety of settings. Admission to psychiatric/mental health nursing programs required. Prerequisites: 096:224 and 096:225.

096:253 Psychiatric/Mental Health Nursing Practice with Families 3 s.h.
Experience using family therapy as a treatment modality; relevance of group intervention models for meeting mental health needs of families. Admission to psychiatric/mental health nursing program required. Prerequisite: 096:251.

096:254 Psychiatric/Mental Health Nursing Practice with Groups 3 s.h.
Experience using group process as a treatment modality; relevance of group intervention models for meeting mental health needs of clients across the life span. Admission to psychiatric/mental health nursing program required. Prerequisite: 096:251.

096:255 Psychiatric/Mental Health Care Management 3 s.h.
Indirect care responsibilities, including clinical supervision, evaluation of treatment environments, program development, interdisciplinary collaboration: development of goals for future professional development and contributions to nursing. Prerequisites: 096:251 and 096:252.

096:260 Nursing Administration: Process, Roles, and Strategies 3 s.h.

096:261 Nursing Administration: Process, Roles, and Strategies II 3 s.h.
Analysis of functions, responsibilities of nurse administrator. Prerequisite: 096:260 or consent of instructor.
Informatics In Nursing and Health Care 3 s.h.

Philosophy, theory, analysis, and evaluation of nursing informatics innovations, research, issues. Prerequisites: 096:263 and 096:310, or consent of instructor.

Master’s Project 3 s.h.

Genetic Nursing Research 3 s.h.

For Doctoral Candidates

Open only to doctoral students or to others with consent of instructor.

Classic and Modern American Nursing 3 s.h.

From 1870 to present; writings, classic books, documents; influence of societal conditions on expansion of nursing services, education.

Nursing Informatics Theory applied to design, modification, implementation, and evaluation of nursing and health information systems; supervised clinical preceptorship.

Prerequisites: 096:263 and 096:310, or consent of instructor.

Economics of Health Care and Nursing 3 s.h.

Economic principles: demand, supply for health manpower, insurance; costs, financing of health care services; contemporary hospital structures, organization; role of government.

Nursing’s Role in Health Care Policy 3 s.h.

Impact of federal health policy on nurses, nurse manpower projections, trends in hospital nursing, challenges of long-term care, frontiers of nursing practice, strategies for increasing nurses’ autonomy, federal nursing priorities.

Nursing Research Theory Construction 3 s.h.

Foundation of theory for professional practice; history, philosophy, sociology of science; development of a scientific community in nursing; relationship between theory construction, research; methods for generating specific theories.

Nursing Theory Construction II 3 s.h.

Generation, testing, reformulation of theory for professional practice; focus on legal, ethical, political forces that shape and influence research, scholarship; how research and scholarship contribute to society. Prerequisite: 096:340 or consent of instructor.

Family Nursing Research 3 s.h.

Family theories and empirical research from nursing and related disciplines; mid-range family theories; issues in research methodology.

Nursing Research of Biological Phenomena and Interventions for the Elderly 3 s.h.

Analysis, evaluation of research on health of elderly, aging process; emphasis on methodological issues, instrumentation appropriate for study of biological phenomena. Same as 153:410.

Genetic Nursing Research 3 s.h.

Concepts in human genetics integrated with nursing research; methodological issues in study of populations with specific genetic problems; genetic counseling, screening, research methods. See 153:420.

Geriatric Mental Health Research 3 s.h.

Analysis, evaluation; emphasis on primary prevention, evaluation, geriatric mental health services research, methodological issues. Same as 153:420.
096:425 Research in Sociocultural Perspectives for Family and Women’s Health 3 s.h.
Health experiences of U.S. women and families from oppressed, marginalized cultural and social groups; approaches to developing and testing interventions, outcomes promoting and enhancing health of women and families; mid-range theory related to health care access and utilization.

096:430 Nursing Research in Sociocultural Phenomena and Interventions for the Elderly 3 s.h.
Sociocultural issues for aging clients, corresponding nursing interventions; theoretical orientations to dynamics of aging, transitions and role changes, social/environmental issues. Same as 123:430.

096:635 Research in Cognitive and Behavioral Interventions for Children 3 s.h.
Research on cognitive and behavioral problems in children, research designs and data analysis, evaluation of instruments, areas that need further development, development of testable research questions.

096:440 Research Utilization Residency in Care of the Elderly 3 s.h.
Project based on relevant gerontological nursing research. Prerequisites: two from 096:410, 096:420, 096:430.

096:445 Research Residency in Child and Family Nursing 3 s.h.
Research or research utilization project based on relevant child and/or family nursing research; guided by preceptor.

096:450 Research Seminar in Nursing Administration I: Organizational Systems Concepts 3 s.h.
Health care organization, nurses in the organization; data collection instruments; directions for further research, implications for model building, research methods, practice.

096:451 Research Seminar in Nursing Administration II: Health Care System Concepts 3 s.h.
Management concepts, health care factors that influence delivery of care systems; patient outcomes; measurement of quality nursing care. Prerequisite: 096:450 or consent of instructor.

096:460 Innovations in Nursing Management 3 s.h.
Current and emerging issues that affect functions, responsibilities of nurse administrator; research base for recent innovations in nursing management; delivery of care systems for high-risk populations.

096:470 Methods and Issues in Nursing Interventions Effectiveness Research 3 s.h.
Issues in conducting research on nursing management and on clinical interventions cost effectiveness; methods and issues in classification of nursing, health, health systems phenomena. Doctoral or postdoctoral standing in nursing or consent of instructor required.

096:480 Residency in Nursing Service Administration 3 s.h.
Application of administrative skills in a practice setting. Prerequisites: 3 s.h.

096:490 Research Practicum 0 s.h.
Participation in ongoing investigative team as research assistant; followed by 096:491. Consent of adviser required.

096:491 Research Practicum 0 s.h.
Continuation of 096:490. Consent of adviser required.

096:497 Dissertation Research Seminar: Research Application and Advanced Design 0 s.h.

096:499 Dissertation Research 0-3 s.h.
Opportunity for high-achieving undergraduates to enhance clinical skills, work closely with faculty member and preceptor. Prerequisites: three semesters of clinical nursing courses and 3.00 grade-point average in clinical nursing.

096:500 Independent Study 0 s.h.
Study and/or clinical practice. Open only to students in undergraduate honors program.

096:515 Honors Independent Study 3-6 s.h.
Project or experience related to the course objectives of a required nursing course. May be repeated. Open only to students in undergraduate honors program.

096:522 Humane Sexuality 3 s.h.
Abnormal physical, psychological and social aspects of sexuality; etiology, treatment and prevention of sexual problems. Students with consent of instructor.

096:570 Medical and Surgical Nursing 3 s.h.
Clinical experiences in medical-surgical nursing for the adult client with alterations in body systems. Patients with chronic and/or malignant conditions. Consent of instructor required. Same as 152:570.

096:580 Macintosh Computer Application for Clinical Nursing Practice 3 s.h.
Preparation for using selected computer software to create professional manuscripts and group presentations, and to manage data from clinical projects; Microsoft Word, Superpoint, Aldus Persuasion, End note, Hypercard, Microphone, 4th Dimension. Open only to College of Nursing students, registered nurses, or others with permission of instructor.

096:581 Nursing Management of the Adult Client 3 s.h.
Management concepts, health care factors that influence delivery of care systems; patient outcomes; measurement of quality nursing care. R.N. status or consent of instructor required.

096:582 Independent Study arr.
Open only to doctoral students.

096:175 Issues in International Nursing and Health Care 3 s.h.
Same as 152:175.

096:179 Selected Topics in Nursing 1, 2 s.h.
In-depth study of topics in professional nursing practice and health care; workshop format.

096:180 Nursing Intervention for Substance Abuse 1-2 s.h.
Major substances of abuse, criteria for diagnosis and treatment; concepts related to addiction, etiology and treatment, abuse in special populations, nurses’ roles in identifying substance abuse, current issues. Open only to registered nurses, nursing students, or prenursing students with consent of instructor or College of Nursing adviser.

096:182 Alternative and Complementary Medicine 3 s.h.
Same as 046:105, 078:210.

096:188 Advanced Technological Nursing Applications 3 s.h.
Content and application of technological nursing skills; physiological concepts related to critically ill patient, with focus on complex multi-system involvement, implications for nursing care. R.N. status or consent of instructor required.

096:216 Group Leadership in Human Sexuality 0-3 s.h.
Emphasis on goal-setting and the influence of gender, role transition, socialization, and intergenerational development on human sexuality.

096:283 Informatics Tools for Health Care Decision Support 3 s.h.
Technological tools that support health care administration, management, and decision making. Graduate standing or consent of instructor required. Same as 06K:225, 021:275, 050:283, 056:287, 174:226.

096:296 Independent Study arr.
Supervised study and/or clinical practice adjusted to needs of master’s degree students. Open only to master’s students.

096:496 Independent Study arr.
Supervised study adjusted to needs of doctoral degree students. Open only to doctoral students.

Electives

The Schedule of Courses lists nursing electives being offered during a particular semester. Not all courses are offered each semester.

096:031 Adult Development and Aging 1 s.h.
Physical, cognitive, personality development in the adult; emphasis on the aging process. Prerequisites: a course in general psychology or one in child/adolescent development.
Dean: Jordan L. Cohen
Associate dean, professional program: Lloyd E. Matheson
Assistant to the dean: Michael T. Sullivan
Director, Pharmaceutical Service: Rolland I. Poust
Director, Iowa Drug Information Service: Hazel H. Seaba
Laboratory Director, Center for Advanced Drug Development: Alta Botha
Head, medicinal and natural products chemistry: John P. Rosazza
Head, pharmaceuticals: Dale Eric Wurster
Head, clinical and administrative pharmacy: William A. Miller
Professors emeriti: Gilbert S. Banker, Joseph G. Cannon, David P. Carew, J. Keith Guillery, Robert A. Wiley, Dale E. Wurster
Professor (clinical): Bruce Alexander
Adjunct professor: Edward R. Howell
Clinical professors: James A. Ponte, Hazel H. Seaba
Associate professors: Karen Baker, Maureen D. Donovan, William R. Doucette, Lee E. Kirsch, Michael E. Klepser, Lloyd E. Matheson, Gary Milavetz, David I. Min, Bernard A. Sorofman
Associate professor emeritus: Ting-Fong Chin
Associate professors (clinical): Jay Currie, Michael W. Kelly, Randall McDonough, Shane Scott
Adjunct associate professors: Lois Garland-Patterson, Douglas Geraets, Mark Jones, Alan Mutnick
Assistant professors: John Brooks, Steve Campion, William Crow, William Doucette, Vicki Ellingrod, Erika Ernst, Julie Ganther, Ronald Herman, Zhengdong Jin, Michael Klepser, Vijay Kumar, Elizabeth Lotspiech, Paul Luner, Horatio Olivo, Bradley Phillips, Thomas Redford
Assistant professors (clinical): Nancy Bronehuis, Michael Ernst, Lucinda Buys, James Hoehns, Teresa Klepser, Craig Logemann, Cindy Marek, Kevin Moore, Julie Ford, John Swegle
Assistant professors (clinical): Nancy Bronehuis, Michael Ernst, Lucinda Buys, James Hoehns, Teresa Klepser, Craig Logemann, Cindy Marek, Kevin Moore, Julie Ford, John Swegle
Degrees: B.S.Ph., Pharm.D., M.S., Ph.D. in Pharmacy
Web site: http://www.uiowa.edu/~ pharmacy/index.html
The pharmacy profession is concerned with a wide variety of activities, from developing new drug products to dispensing medicines to patients. A recent concept in the delivery of pharmaceutical services is pharmaceutical care—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. Implementation of the pharmaceutical care model is expected to enhance health care in rural settings and in primary care among the elderly, who are by far the heaviest users of drugs and drug information. In order to carry out these responsibilities, pharmacists specialize in the science of drugs and drug information.

The familiar picture of the pharmacist in the corner pharmacy is only one part of the mosaic. Pharmacists also are active in research, clinical practice, teaching, and counseling. While training in science and drug preparation, they also learn the business and communication skills necessary for their multifaceted careers.

Demand for qualified pharmacists is high. Iowa’s graduates enjoy a 100-percent placement rate. Iowa’s pharmacy students study with professors who, in many cases, are pioneering the development of new drugs 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.

Accreditation
The University of Iowa College of Pharmacy is accredited by the American Council on Pharmaceutical Education. Graduates of the college are qualified to take the national licensure examination given by the Iowa Board of Pharmacy Examiners.

Doctor of Pharmacy (Pharm.D.)
Students enroll in pharmacy in the Doctor of Pharmacy program. They receive professional education in a number of areas, including pharmaceutical technology, biopharmaceutics, medicinal chemistry and natural products, pharmaceutical economics, and clinical and hospital pharmacy. Aspects of biotechnology are a common part of pharmacy education.

The Colleges of Liberal Arts, Business Administration, Dentistry, and Medicine contribute to the education of pharmacy students by providing instruction in the physical sciences, basic medical sciences, business, the humanities, and social sciences.

The Doctor of Pharmacy program in pharmacy consists of two years of prepharmacy study, taken in the College of Liberal Arts at The University of Iowa or at any accredited community or liberal arts college, and four years of pharmacy studies in the College of Pharmacy. Deadline for admission is December 1.

Graduation from the Doctor of Pharmacy program in pharmacy requires satisfactory completion of the required courses, 26 semester hours of general education electives, and a pharmacy grade-point average and a total cumulative grade-point average of at least 2.00. The pharmacy grade-point average is computed from grades earned in all required (nonselective) courses that students have completed while enrolled in the College of Pharmacy.

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 correspondence study are provided in the College of Pharmacy section of the current Schedule of Courses and the Handbook for Pharmacy Students.

Professional Curriculum
Students must be enrolled in the College of Pharmacy before they may take College of Pharmacy courses. Graduate students in other majors may take College of Pharmacy courses with the instructor’s consent.

In addition to the specific courses listed here, students must complete 26 semester hours of general education courses chosen from the behavioral, social, humanistic, and business disciplines.

FIRST YEAR
First Semester
046:022 Pharmaceutical Socioeconomics: Health Care Systems 4 s.h.
046:050 Pharmacy Practice I 2 s.h.
046:123 Pharmaceutical Technology: Solutions (lecture) 3 s.h.
061:112 Health Sciences Microbiology 4 s.h.
099:162 Biochemistry for Pharmacy Students 4 s.h.

Second Semester
046:035 Pharmaceutical Socioeconomics: Practice Management 3 s.h.
046:051 Pharmacy Practice II 2 s.h.
046:055 Career Options 1 s.h.
046:124 Pharmaceutical Technology: Solids (lecture) 3 s.h.
046:128 Medicinal and Natural Products Chemistry I: Biotechnology and Chemotherapy 5 s.h.
072:150 Physiology for Pharmacy Students 4 s.h.

SECOND YEAR
First Semester
046:116 Pharmacy Practice III 2 s.h.
046:125 Introduction to Pharmacotherapy and Health Care 1 s.h.
046:126 Pharmacotherapy: Endocrinology, Women’s and Men’s Health 2 s.h.
046:127 Pharmacotherapy: Respiratory and Dermatology 2 s.h.
046:131 Medicinal and Natural Products Chemistry II: Pharmacodynamic Agents 5 s.h.
069:133 Introduction to Human Pathology 4 s.h.
071:190 Pharmacology and Toxicology for Health Sciences I 4 s.h.

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Second Semester
046:116 Pharmacy Practice IV 2 s.h.
046:132 Medicinal and Natural Products Chemistry III: Medicinal Neurochemistry 5 s.h.
046:138 Introduction to Pharmacokinetics 3 s.h.
046:139 Pharmacotherapy: Cardiovascular Diseases 2 s.h.
046:140 Pharmacotherapy: FEN, GI, and Renal Disease 3 s.h.
071:191 Pharmacology and Toxicology for Health Sciences II 4 s.h.

THIRD YEAR
First Semester
046:118 Pharmacy Practice Lab V 2 s.h.
046:136 Physical Assessment 2 s.h.
046:141 Jurisprudence 2 s.h.
046:143 Professional Practice 4 s.h.
046:145 Therapeutic and Diagnostic Systems 2 s.h.
046:152 Pharmacotherapy: Immunology, Rheumatology, Transplantation, Hematology, Oncology 2 s.h.
046:153 Pharmacotherapy: Psychiatric and Neurology 3 s.h.
046:172 PharmaStatistics 2 s.h.

Second Semester
046:115 Clinical Pharmacy: Drug Literature Review and Evaluation 3 s.h.
046:119 Pharmacy Practice Lab VI 2 s.h.
046:167 Pharmacotherapy: Infectious Diseases 3 s.h.
046:168 Pharmacotherapy: Ophthalmology, Pediatrics, Toxicology 1 s.h.
046:169 Pharmacotherapy: Multi-Organ System Cases 2 s.h.
046:170 Clinical Pharmacokinetics 3 s.h.
046:171 Nonprescription Pharmacotherapy 2 s.h.
046:195 Clinical Professional Skills 2 s.h.

FOURTH YEAR-EXTERNSHIPS, CLINICAL CLERKSHIPS
During the fourth year, students are required to take seven 5-week clinical clerkships and two 5-week externships—one in community pharmacy and one in hospital pharmacy. These experiences give students opportunities to work in a variety of settings with pharmacists providing pharmaceutical care to their patients. The emphasis in these experiences is the provision of primary care, which is especially important in rural areas of Iowa.

Students earn a total of 36 semester hours, as follows.
046:059 Hospital Pharmacy Externship 4 s.h.
046:060 Community Pharmacy Externship 4 s.h.
046:179 Community Pharmaceutical Care Clerkship 4 s.h.
046:180 Medicine Clerkship 4 s.h.
046:181 Family Practice Clerkship 4 s.h.
Four clinical clerkships (4 semester hours each) 16 s.h.

The clinical clerkships are chosen from a large number of clerkship offerings; up to three of them may consist of research experience. Students may take additional courses during this year to prepare for graduate school.
Preprofessional Course Work

Rhetoric: 8 semester hours, or 6 semester hours of transfer credit in English composition and rhetoric, and 2-3 semester hours in speech

Anatomy: 3 semester hours

General biology: 8 semester hours [02:010-011 Principles of Biology I-II]

General chemistry: 6-8 semester hours

Organic chemistry: 6 semester hours

Mathematics: 3-4 semester hours of a satisfactory differential and integral calculus course

Microeconomics: 3-4 semester hours

Physics: one year of high school physics or one semester of college-level physics

Physiology: 3-4 semester hours

General education electives: at least 15 semester hours

Each student must complete 26 semester hours of general education courses in order to graduate. Courses in statistics, moral reasoning or ethics, communications, computer science, and business are recommended. Courses in the behavioral and social sciences and the humanities are acceptable.

Transfer students also must have earned 3-4 semester hours in microbiology.

Transfer Students

Students who plan to obtain their prepharmacy education at another college or university before transferring to The University of Iowa should consult the Office of Professional Programs before beginning the prepharmacy year.

Students who want to satisfy required or elective credit at other institutions must have the consent of the academic counselor for professional programs before enrolling in such courses.

A grade of C or higher is required for transfer work applied toward the pharmacy degree.

Financial Support

A number of awards are available to students working toward the Pharm.D. degree. To be eligible for awards, students must have completed at least one year in The University of Iowa College of Pharmacy. Each award goes to only one student, unless noted otherwise. Scholarship application forms are available from the College of Pharmacy.

American Drug-Osco Scholarship: For a pharmacy student with a grade-point average of at least 2.00 who is employed in a community pharmacy and resides in Iowa, Minnesota, Missouri, Nebraska, South Dakota, or Wisconsin. Two awards.

Melissa Arborgast Scholarship: For a pharmacy student with a cumulative grade-point average of at least 3.00 who has demonstrated financial need and a strong desire to pursue a pharmacy career.

Seymour M. Blaug Memorial Award: For a pharmacy student with above-average academic achievement.

B.P. Bogan Memorial Award: For a junior pharmacy student with a grade-point average of at least 2.50 and an interest in the practice of community pharmacy.

Buse O. Buckner Scholarship: For a needy pharmacy student who maintains satisfactory academic progress. Nonrenewable; number varies.

Burroughs Wellcome Co. Scholarships: For selected pharmacy students; financial need is considered. Number varies.

Eugene Challed Scholarship: For selected pharmacy students.

Conzemius Scholarships: For selected pharmacy students. Number varies.

Ben M. Cooper Memorial Award: For an academically outstanding undergraduate student; preference is given to students from Scott County, Iowa; financial need is considered.

Charles E. Greger Memorial Award: For a sophomore student; based on professional attitude and need.

Lori A. Grimes Memorial Scholarship: Based on financial need.

Thomas D. Hill Scholarship: For any pharmacy student in good academic standing. Number varies.

Frances T. and Charles Holub Memorial Awards: For selected third-year pharmacy students; financial need is considered. Number varies.

Iowa Pharmacists Association Women’s Auxiliary Scholarship: For a female pharmacy student who is a resident of Iowa; financial need is considered.

Iowa Pharmacy Foundation Scholarships: For selected pharmacy students who are residents of Iowa and who demonstrate outstanding academic ability; financial need is considered. Number varies.

Kuever Scholarship Fund: For a pharmacy student from Iowa in good academic standing. Nonrenewable.

Ronald Madden Scholarship: For an Iowa high school graduate with a B average or better in high school.

Charles J. Malecek Pharmacy Scholarship: For a third-year pharmacy student.

Miller-Ruegnitz Scholarships: Based on financial need. Nonrenewable.

Pharmacists Mutual Scholarship: For a student who intends to become a community practitioner; must be from a midwest state where Pharmacists Mutual operates; based on academic achievement and need.

Gordon H. Sheffield Scholarships: For selected junior or senior pharmacy students who are residents of Iowa, who have demonstrated outstanding academic ability, leadership, financial need, and who have contributed...
service to the University community. Three awards.

Shutt Pharmacy Scholarship: Based on financial need; preference given to Iowa residents.

H. Curtis Snyder Award: Preference given to a student interested in a sales position.

Wilbur J. Teeters Scholarship: For a pharmacy student who has completed at least one year in the college; financial need is considered.

Teeters/Wahl Scholarships: For selected pharmacy students based on need, outstanding academic ability, and U.S. citizenship. Number varies.

John Stanley Thor Memorial Award: For a pharmacy student in good standing; financial need is considered.

Wal-Mart Scholarship: For a junior pharmacy student with high scholastic standing who demonstrates strong leadership, financial need, and the desire to enter a community pharmacy practice. Nonrenewable.

Louis C. Zopf Memorial Awards: For selected pharmacy students who are academically qualified; financial need is considered. Two awards.

John and Betts Zuelke Scholarship: Preference given to an Ottumwa, Iowa, area resident.

Graduate Programs

The college has graduate programs in each of its three academic divisions. Master of Science and/or Doctor of Philosophy programs are available in pharmaceutics, medicinal and natural products chemistry, and clinical and administrative pharmacy.

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 a number of health-related institutions and organizations.

The application deadlines, grade-point average for admission, Graduate Record Examination (GRE) Aptitude Test scores, and necessary letters of recommendation are the same as those for the Graduate College. Academic requirements for maintaining graduate registration are determined by individual divisions of the College of Pharmacy.

More information about graduate study in the college is available on the College’s World Wide Web site.

Facilities

The Pharmacy Building is located in the health center complex on the University’s main campus, in close proximity to the Colleges of Dentistry, Medicine, Nursing, and Public Health. The University of Iowa Hospitals and Clinics, the Bowen Science Building, and the Hardin Library for the Health Sciences also are nearby.

The 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 building also houses the Learning Resource Center (LRC), with current texts and periodicals useful to professional and graduate pharmacy students. The LRC has state-of-the-art computer terminals available to students and provides on-line computer searches for pharmacy students and faculty.

The Pharmaceutical Service Division of the college serves as a teaching unit as well as a service division. Here, pharmacy students learn methods of large-scale pharmaceutical product development and production. The division’s equipment and its licensure by the U.S. Food and Drug Administration make it an outstanding facility.

The Iowa Drug Information Service (IDIS) also is a service division of the college. IDIS serves as a central repository and distribution center of specialized information related to drugs and drug therapy. IDIS not only reaches subscribers throughout the world but plays an important educational role for undergraduate and graduate pharmacy students as well.

In the clinical pharmacy program, students work with other health professionals and have the opportunity to monitor drug therapy in hospitalized and nonhospitalized patients under the supervision of clinical professors in pharmacy, medicine, and dentistry. The various clerkships/externships in which students are enrolled include many areas of the University of Iowa Hospitals and Clinics; the College of Dentistry; the Veterans Affairs Medical Center; the family practice centers at Iowa City, Cedar Rapids, and Davenport; Iowa City Mercy Hospital; Mercy and St. Luke’s hospitals in Cedar Rapids; Covenant Medical Center in Waterloo; the Burlington Medical Center in Burlington; St. Joseph’s Mercy Hospital in Mason City; the Marian Health Center and St. Luke’s Hospital in Sioux City; Mary Greeley Hospital in Ames; St. Luke’s and Mercy hospitals in Davenport; Mercy Health Center in Dubuque; Ottumwa Regional Health Center in Ottumwa; the Indian Health Service hospitals in Arizona and New Mexico; St. Mary’s Hospital in Streator, Illinois; some pharmaceutical companies; and numerous selected community pharmacies.

Courses

For Doctor of Pharmacy Students

Pharmaceutics

046:050 Pharmacy Practice I 2 s.h.
Prescription interpretation, aseptic technique in the preparation of parenteral products, patient counseling, applications of drug information and law. Prerequisite: 046:049.

046:051 Pharmacy Practice II 2 s.h.
Continuation of 046:050, which is prerequisite.

046:101 Pharmacy Projects 1-3 s.h.
Basic and applied research problems of pharmaceutical interest.

046:116 Pharmacy Practice Lab III 2 s.h.

046: 117 Pharmacy Practice Lab IV 2 s.h.
Continuation of 046:116, which is prerequisite.

046: 118 Pharmacy Practice Lab V 2 s.h.
Continuation of 046:117, which is prerequisite.

046: 119 Pharmacy Practice Lab VI 2 s.h.
Continuation of 046:118, which is prerequisite.

046:123 Pharmaceutical Technology: Solutions 3 s.h.
Application of physical, chemical laws to formulation, preparation of liquid dosage forms, including solution, colloidts, ointments, emulsions. P2 standing required. Prerequisite: 046:122.

046:124 Pharmaceutical Technology: Solids 3 s.h.
Properties of solids; formulation, preparation, evaluation of solid dosage forms. P2 standing required. Prerequisites: 046:122 and 046:123.

046:133 Pharmaceutical Technology: Solutions Laboratory 1 s.h.

046:134 Pharmaceutical Technology: Solids Laboratory 1 s.h.

046:138 Introduction to Pharmacoekinetics 3 s.h.
Qualitative, quantitative description of kinetics of drug absorption, distribution, elimination, including physiological factors that influence each process; adjustment of dosing regimens for optimizing therapeutic drug levels in the body. Prerequisites: 046:123 and 046:124.

046:143 Professional Practice 4 s.h.
Extremponous compounding, dispensing of medications, use of computers, intravenous admixtures; development of communication skills necessary for delivery of pharmaceutical care. P4 standing required.

046:145 Therapeutic and Diagnostic Systems 2 s.h.
Design, selection, use of traditional and novel dosage forms; applications of physical pharmacy and biopharmaceutic principles to dosage form performance; diagnostics and mechanical delivery systems. P4 standing required. Prerequisite: 046:138 or consent of instructor.

046:172 PharmaStatistics 2 s.h.
Introduction to the use of statistics. P4 standing required.

Medicinal and Natural Products

Chemistry

046:128 Medicinal and Natural Products Chemistry I: Biotechnology and Chemotherapy 5 s.h.
First of a three-semester sequence; 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 biochemical activity and toxicity; detoxication mechanisms; functional group chemistry; nomenclature; chemistry of radiodiagnostic and therapeutic agents; introduction to biopharmaceutical analysis. P2 standing required. Prerequisites: 004:122, and 009:162 or equivalent; and 061:112 or equivalent.

046:131 Medicinal and Natural Products Chemistry II: Pharmacodynamic Agents 5 s.h.
Continuation of 046:128, which is prerequisite. P3 standing required.

046:132 Medicinal and Natural Products Chemistry III: Medicinal Neurochemistry 5 s.h.
Continuation of 046:131, which is prerequisite. P3 standing required.

046:155 Perspectives in MCNP Research 1 s.h.
Contemporary research in medicinal chemistry and natural products.

Clinical and Administrative Pharmacy

046:022 Pharmaceutical Socioeconomics: Health Care Systems 4 s.h.
Overview of the U.S. health care delivery system, with emphasis on socioeconomic and political factors affecting health care delivery, role of pharmacy and the pharmaceutical industry. P1 standing required. Prerequisite: 046:049.
046:035 Pharmacological Socioeconomics 3 s.h.
Practice Management
Procedures necessary for good management of human and financial resources in pharmaceutical organizations; case-study approach, with principles applied to real-life situations.
P2 standing required. Prerequisite: 046:022.

046:049 Introduction to Pharmaceutical Care 2 s.h.
Patient-centered care, patient communication, information retrieval and analysis, clinical problem-solving skills. Open only to first-year pharmacy students.

046:055 Career Options 1 s.h.
Practices and nonpractice opportunities available to pharmacy graduates. P2 standing required.

046:061 Drug Information 3 s.h.

046:102 Pharmacy Honors Seminar 1 s.h.
Scientific, philosophical, economic, ethical issues of importance to the practice of pharmacy.

046:105 Alternative and Complementary Medicine arr.
P4 standing required. Same as 078:210, 096:182.

046:115 Clinical Pharmacy: Drug Literature Review and Evaluation 3 s.h.
Literature of hospital pharmacy practice, including clinical aspects; emphasis on techniques of evaluating biomedical literature; randomized, stratification, controls, blinding; requires an understanding of statistics. P4 standing required. Prerequisites: 046:136, 046:141, 046:143, 046:145, 046:152, 046:153, and 046:172.

046:125 Introduction to Pharmacotherapy and Health Care 1 s.h.
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. P3 standing required.

046:126 Pharmacotherapy: Endocrinology, Women's and Men's Health 2 s.h.
Pharmacotherapy for endocrine disorders; related issues in adults and children; review of disorder, therapeutic goals, treatment plans, patient counseling, monitoring patient outcomes. P3 standing required.

046:127 Pharmacotherapy: Respiratory and Dermatology 2 s.h.
Pharmacotherapy for respiratory and dermatologic disorders; review of disorders, therapeutic goals, treatment plans, patient counseling, monitoring patient outcomes. P3 standing required.

046:136 Physical Assessment 2 s.h.
Skills in health assessment. P4 standing required. Prerequisite: 046:126.

046:139 Pharmacotherapy: Cardiovascular Diseases 2 s.h.
Pharmacotherapy for cardiovascular disorders; review of disorder, therapeutic goals, treatment plans, patient counseling, monitoring patient outcomes. P3 standing required.

046:140 Pharmacotherapy: FEN, GI, and Renal Disease 3 s.h.
Pharmacotherapy for fluid/electrolyte/nutrition disorders, GI and renal diseases; review of disorders, therapeutic goals, treatment plans, patient counseling, monitoring patient outcomes. P3 standing required.

046:141 Jurisprudence 1.2 s.h.
Overview of U.S. legal systems, with emphasis on contract, torts, related areas of civil law; federal food, drug, and cosmetic law; federal laws regulating narcotics, other dangerous drugs; state and federal laws regulating pharmacy practice, drug distribution. P4 standing required.

046:152 Pharmacotherapy: Immunology, Rheumatology, Transplantation, Hematology, Oncology 2 s.h.
Pharmacotherapy for immunology, rheumatology, transplantation, hematology, oncology; review of disorders, therapeutic goals, treatment plans, patient counseling, monitoring patient outcomes. P4 standing required.

046:153 Pharmacotherapy: Psychiatric and Neurology 3 s.h.
Pharmacotherapy for psychiatric and neurologic disorders; review of disorders, therapeutic goals, treatment plans, patient counseling, monitoring patient outcomes. P4 standing required.

046:167 Pharmacotherapy: Infectious Diseases 3 s.h.
Pharmacotherapy for infectious disorders; review of disease, therapeutic goals, treatment plans, patient counseling, monitoring patient outcomes. P4 standing required.

046:168 Pharmacotherapy: Ophthalmology, Pediatrics, Toxicology 1 s.h.
Pharmacotherapy for ophthalmology, pediatrics, toxicology; review of disorders, therapeutic goals, treatment plans, patient counseling, monitoring patient outcomes. P4 standing required.

046:169 Pharmacotherapy: Multi-Organ System Cases 2 s.h.
Pharmacotherapeutic management of patients with multiple diseases, disorders; case-based approach in a variety of patient care settings. P4 standing required.

046:170 Clinical Pharmacokinetics 3 s.h.
Application of pharmacokinetics to the clinical setting. P4 standing required.

046:171 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. P4 standing required.

046:195 Clinical Professional Skills I-2 s.h.
Topics vary. P4 standing required.

For Graduate Students

Pharmaceutics

046:148 Pharmacokinetics and Biopharmaceutics 3 s.h.
Kinetics of drug absorption, distribution, and elimination; including development of mathematical models. Prerequisites: two semesters of calculus and one semester of statistics, or consent of instructor.

046:157 Quantitative Research Methods in Pharmaceutics 4 s.h.
Lecture and laboratory; collection and interpretation of analytical data; instrumental analysis as applied to pharmaceutical quality control; separation techniques.

046:202 Pharmacy: Selected Topics 1-4 s.h.
Recent advances and contemporary research in pharmaceutics. May be repeated.

046:206 Stability of Pharmaceuticals 3 s.h.
Mechanisms of degradation of pharmaceuticals; prediction of shelf life of pharmaceuticals, stabilization. Prerequisite: 046:132.

046:207 Polymers in Pharmaceutics 3 s.h.
Polymer science, its implications in pharmaceutics; polymer used as excipients in design of controlled and/or sustained release products.

046:208 Characterization of Solid-State Systems 3 s.h.
Solid-state chemistry and properties of drugs and excipients; theory and application of physical characterization methods for raw materials, dosage forms; identification and analysis of polymorphism, hygroscopicity, amorphous solids; impact of processing and formulation on solid state; solving solid-state problems.

046:225 Product Development 3 s.h.
Application of physico-chemical principles to formulation and design of pharmaceutical dosage forms.

046:229 Advanced Pharmacokinetics and Pharmacodynamics 2 s.h.
Selected topics, including nonlinear curve fittings. Prerequisite: 046:148.

046:231 Pharmacy Seminar 1-2 s.h.
May be repeated.

046:232 Drug Delivery: Principles and Applications 3 s.h.
Design and development of drug delivery systems; mathematical analysis of dosage form performance; applications of advanced technology in emerging systems. Prerequisites: 046:145 and 046:237, or consent of instructor.

046:233 Pharmacy: Research arr.

046:235 Equilibria Processes 3 s.h.
Equilibria pertaining to ionic systems, complexation, partitioning, solubility. Prerequisite: 046:131.

046:236 Surface Phenomena 3 s.h.
Behavior of matter in phase boundaries, especially adsorptive processes at liquid-solid and vapor-solid interfaces. Prerequisite: 046:131.

046:237 Transport Phenomena 3 s.h.
Diffusion and mass transport phenomena related to pharmaceutical systems. Prerequisite: 046:131.

Medicinal and Natural Products Chemistry

046:137 Enzymatic Basis of Drug Metabolism 2 s.h.
Current literature on catalytic and physical properties, distribution, and substrate specificity of enzymes involved in mammalian drug metabolism. Prerequisites: 046:122 and 099:162, or consent of instructor.

046:150 Synthetic Strategies in Medicinal Chemistry 2-3 s.h.
Special relevance to medicinal chemistry and drug design. Prerequisites: 046:122 and 046:132.

046:151 Pentapeptide and Peptide-Directed Drug Design 2 s.h.
Chemical nature, conformation, synthesis of peptides; inhibition of receptors of medicinal importance; computational methods for inhibitor design, examples from current literature; stability of peptides. Prerequisite: 046:132 or consent of instructor.

046:205 Stereochemistry and Conformational Analysis 2 s.h.
Basic concepts of conformational analysis; selected recent references; application of this science to design and synthesis of biologically active molecules. Prerequisite: 046:172.

046:211 Heterocycles 3 s.h.
Selected heterocyclic ring systems of medicinal importance; special reference to synthesis, mechanisms, and stereochemistry as related to biological effects; primarily from current literature. Prerequisites: 046:172 and 046:205.

046:212 Aspects of Drug Design 3 s.h.
Use of modern concepts of structural chemistry in the rational design and creation of new therapeutic agents; applications of chemical principles to investigation, understanding of molecular-level interactions of endogenous and exogenous organic molecules with receptor sites on macromolecules. Consent of instructor required. Prerequisites: 046:132 or 046:205 or equivalent; and biochemistry.

046:215 Medicinal Chemistry: Survey 3 s.h.
Current literature on modern theoretical organic chemistry applied to study and understanding of biological phenomena; chemical and stereochemical aspects of autonomic nervous system and the chemical agents that influence it. Prerequisite: 046:132 or consent of instructor.

046:217 Medicinal and Natural Products Chemistry Research arr.

046:219 Separation Methods in Medicinal and Natural Products Chemistry 3 s.h.
Extraction, distribution, isolation of primary and secondary natural products: techniques of handling and storing biological materials; emphasis on methods of isolation and partition, including solvent extraction, chromatography, electrophoresis, and centrifugation.

046:223 Reaction Mechanisms of Biological Molecules 3 s.h.
Mechanistic approach to enzyme-catalyzed biological processes; emphasis on drawing detailed mechanisms of a variety of biochemical reactions and how this approach helps in designing and understanding drugs. Prerequisites: 046:122 and 099:110, or consent of instructor.

046:224 Biocatalysis in Natural Products Chemistry 3 s.h.
Microbial systems, fermentation conditions, principles of biocatalysis; applications such as biocatalysts as reagents in organic synthesis, microbial models of mammalian metabolism, microbial enzymatic transformations in natural products chemistry and biochemistry.

046:227 Medicinal and Natural Products Chemistry Seminar 1.2 s.h.

046:230 Selected Topics in Medicinal and Natural Products Chemistry 1-3 s.h.

046:275 Perspectives in Biocatalysis 1 s.h.
Applied enzymology, protein design, structure-activity relationships, biosensor technology, microbial transformations, biodegradation of environmental pollutants. Graduate standing required. May be repeated. Same as 046:275, 052:275, 053:275, 061:275, 099:275.

Clinical and Administrative Pharmacy

046:100 Health Promotion in Pharmacy 2 s.h.
Creation of health promotion programs in community pharmacies. P2 or higher standing and consent of instructor required.
046:122 Pharmaceutical Economics 4 s.h.
Economic environments of the pharmaceutical industry, all levels of drug distribution chain, relevant sectors of health care system; use of economic theory, methods, models in studying these environments.

046:147 Introduction to Research Methods 3 s.h.
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. Preference given to students who have had introductory statistics. Consent of instructor required.

046:160 Advanced Problems in Pharmaceutical Socioeconomics 1-4 s.h.
Independent study of problems in pharmaceutical socioeconomics, under supervision of faculty member; data collection, literature review.

046:190 Medications in International Perspective 2 s.h.
Role of drugs in health care systems, from sociocultural perspective; geographic, cultural, technological diversity. Same as 125:190.

046:213 Pharmaceutical Socioeconomics: Seminar 1-2 s.h.
Recent research in pharmacy administration. May be repeated.

046:243 Clinical Hospital Pharmacy Practice Seminar 1 s.h.
Current topics in clinical and hospital pharmacy specialty. May be repeated.

046:246 Population Pharmacokinetics/ Pharmacodynamics 1 s.h.
Theory and techniques necessary for pharmacokinetic/pharmacodynamic research using population approaches to sparse data. Prerequisites: 046:148 and 046:170.

046:247 Clinical Pharmacy-Neurology 1 s.h.
Evaluation of medications used to treat neurological diseases.

046:248 Pharmacotherapy in Organ Transplantation 1 s.h.
Pharmacotherapeutic issues relevant to organ transplantation. Consent of instructor required.

046:249 Chemotherapy of Parasitic Diseases 1 s.h.
Overview: emphasis on treatment of parasitic helminths, protozoa. Consent of instructor required.

046:251 Pharmaceutical Socioeconomics: Research 1 s.h.
Issues in health care survey research studies. Consent of instructor required. Prerequisite: 046:147 or equivalent.

046:253 Pharmaceutical Socioeconomics: Research Methods 3 s.h.
Scientific approaches to solving problems in pharmacy administration; emphasis on research problems and design. Prerequisite: 228:102 or equivalent.

046:254 Advanced Health Behavior Seminar 2 s.h.
How human behavior applies to health care; focus on patient behavior, health professional and organization behavior; health behavior modeling and research related to compliance. Prerequisites: 046:255, 096:174, and 172:150; or consent of instructor.

046:255 Social Pharmacy 3 s.h.
Behavioral and social aspects of drug use in society; emphasis on therapeutic uses of medications, pharmaceutical care systems, pharmacy-related health behaviors.

046:256 Marketing and Health Care 2 s.h.
Research on marketing’s impact on delivery and consumption of health care, and on changes in marketing that result from evolution of health care systems. Graduate standing required.

046:257 Foundation Literature in Pharmaceutical Socioeconomics 1 s.h.
Issues related to pharmacy administration, social and behavioral pharmacy, pharmacy education.

046:258 Advanced PSE Research Techniques I 3 s.h.
Application of advanced research methods (e.g., multiple regression, longitudinal data analysis, discrete dependent variable models, simultaneous equation models) to analysis of secondary databases within pharmaceutical socioeconomic research. Consent of instructor required. Prerequisite: 046:253.

046:259 Advanced PSE Research Techniques II 3 s.h.
Application of pharmaceutical socioeconomic theories and methods to advanced problems, with emphasis on primary data collection, analysis, interpretation; reliability and validity assessment of measures, survey design, ANOVA, factor analysis, nonparametric techniques. Prerequisite: 046:258 or consent of instructor.

046:260 Economic Evaluation of Pharmaceuticals 3 s.h.
Methods for evaluating economic consequences of pharmaceutical interventions, including cost minimization, cost effectiveness, cost utility, cost-benefit analyses; discussion of policy issues, including potential for bias, use for reimbursement, role of FDA.

046:261 Workshop: Analysis of Claims Data 3 s.h.
Hands-on instruction in health insurance claims data; evaluating economic consequences of pharmaceutical interventions; strengths and limitations of administrative data. Prerequisite: 046:260 or consent of instructor.

046:262 Workshop: Cost-Utility Analysis 3 s.h.
Hands-on experience in health state preference, willingness-to-pay assessment; cost-utility and cost-benefit analyses. Prerequisite: 046:260 or consent of instructor.

046:263 Theory in Pharmaceutical Socioeconomics 3 s.h.
Theoretical models used to describe behavior and choice in pharmaceutical sociocentric research; models from economics, health services research, health behavior, clinical decision making.

046:280 Clinical Pharmacy Research Seminar 1-2 s.h.
Research by faculty, graduate students.

046:282 Advanced Pharmacokinetic/ Pharmacodynamic Topics 2 s.h.
Basic concepts, computer fitting. Prerequisite: 046:170.

046:284 Research Design for Clinical Studies 2 s.h.
Developing, writing clinical trials. Consent of instructor required.

Clerkships and Externships

046:059 Hospital Pharmacy Extenship 4 s.h.
Instruction and practicum experience in components of hospital pharmacy, emphasis on hospital organization, outpatient services, N additives, unit dose, clinical services; many sites available. P4C standing and consent of instructor required.

046:060 Community Pharmacy Extenship 4 s.h.
Conducted primarily in community pharmacies; emphasis on communication skills with practitioners and didactic education in nonprescription drug use. P4C standing and consent of instructor required.

046:161 Drug Information Clerkship 1 s.h.
Drug information knowledge applied to service and research projects. P4C standing and consent of instructor required.

046:162 Pharmaceutical Care Implementation Research Rotation 4 s.h.
Development and expansion of students’ knowledge and understanding of system components of pharmaceutical care that help ensure successful implementation in a community practice setting. P4C standing required.

046:163 Public Health Pharmaceutical Care Clerkship 4 s.h.
Application of public health knowledge to practice of primary care pharmacy. P4C standing and consent of instructor required.

046:175 Clinical Investigation 1-4 s.h.
Development of research skills through completion of a research project.

046:179 Community Pharmaceutical Care Clerkship 4 s.h.
Delivery of pharmaceutical care in ambulatory primary care environment. P4C standing required.

046:180 Medicine Clerkship 1 s.h.
Advanced application of therapeutic skills necessary for the pharmaceutical management of patients in general medicine or other subspecialties. P4C standing required.

046:181 Family Practice Clerkship 1 s.h.
Advanced clinical experience in primary care environment involving drug therapy management of a wide variety of acute and chronic medical problems in patients of all ages. P4C standing required.

046:182 Pediatrics Clerkship 1 s.h.
Advanced application of clinical pharmacology/toxicology principles to optimize disease management in the inpatient and outpatient pediatric population. P4C standing required.

046:184 Psychiatry Clerkship 1 s.h.
Advanced application of clinical pharmacotherapeutics and pharmacokinetic psychopharmacology to the care of inpatient and outpatient psychiatric patients using a consultant role model. P4C standing required.

046:185 Neurology Clerkship 1 s.h.
Lecture and advanced clinical practice of pharmacotherapeutics related to neurological diseases. P4C standing required.

046:186 Surgery Clerkship 1 s.h.
Advanced application of therapeutic skills necessary for the pharmacotherapeutic management of general surgery patients P4C standing required.

046:187 Clinical Nuclear Pharmacy Clerkship 1 s.h.
Advanced clinical instruction in the uses of radiopharmaceuticals, radiopharmaceutical drug interactions, pharmacological intervention in nuclear medicine studies, radiopharmaceutical drug information. P4C standing required.

046:188 Dental College Clerkship 1 s.h.
Advanced clinical experience involving general and local anesthesia, conscious sedation and pain control, rational antibiotic therapy, participation in management of medically compromised patients. P4C standing required.

046:189 Pharm.D. Elective Clerkship 1 s.h.
Advanced clinical experience in a nontraditional setting. P4C standing required.

046:190 Research Clerkship 1 s.h.
Comprehensive view; includes protocol writing, patient contact, data entry, presentations. P4C standing required.

046:192 Long Term Care Clerkship 4 s.h.
Practice in consulting and providing services to various long-term patient care environments. P4C standing required.

046:193 Home Health Care Clerkship 4 s.h.
Team approach to delivery of health care in hospital setting: total parental nutrition, chemotherapy, intravenous antibiotics, lab analysis, hospice care, pain management. P4 standing required.

046:194 Managed Care Clerkship 4 s.h.
Practice experience in providing pharmaceutical care in managed care settings. P4 standing required.

046:196 Ambulatory Care Clerkship 4 s.h.
Pharmaceutical care in outpatient settings such as internal medicine clinics, diabetes education centers, other specialty clinics. P4 standing required.

046:197 Hematology/Oncology Clerkship 4 s.h.
Drug therapy management of adult oncology patients and patients with hematologic malignancies, aplastic anemia, sickle cell disease, hemophilia. P4 standing required.

046:199 Research Clerkship 4 s.h.
Practice experience in basic pharmaceutical or clinical research, proposal, study design, data collection and analysis, presentation of results. P4 standing required.
College of Public Health

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Dean: James A. Merchant
Associate dean, academic and faculty affairs:
Leon F. Burmeister
Associate dean, education and student affairs:
J. Jackson Barnette
Associate dean, research: Robert F. Woolson
Assistant dean, public health practice:
Christopher Atchison
Assistant dean, external relations: Larry Prybil
Graduate degrees: M.H.A., M.P.H., M.S., Ph.D.
Web site: http://www.public-health.uiowa.edu
The College of Public Health, established in 1999, is a partner with the University’s Colleges of Dentistry, Medicine, Nursing, and Pharmacy in striving to improve the health and well-being of all people. Consistent with the interdisciplinary traditions of public health, the college also collaborates with non-health science colleges, schools, and departments across the University, such as engineering, law, and social work; with other Iowa Regents institutions; with state and local agencies; and with the private sector.

The emphasis on 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. Analytical methods to identify and describe health problems, education and prevention programs, and formulation of sound public policies are some of the tools commonly used by public health professionals to improve and enhance quality of life. 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, reduced the number of deaths from coronary heart disease and stroke, improved motor vehicle production, and created effective health systems to provide care to those who need it. In the future, public health professionals will 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 emerging infectious diseases, food safety, and nutrition.

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 and the Colleges of Dentistry, Education, Engineering, Law, Medicine, Nursing, and Pharmacy who enroll in public health classes. Undergraduate liberal arts students and graduate students from programs such as anthropology, microbiology, and statistics also register for public health courses. Collegiate faculty and staff members as well as 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, Community and Behavioral Health, Epidemiology, Health Management and Policy, and Occupational and Environmental Health. It offers 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.). Majors include biostatistics, epidemiology, occupational and environmental health, and health management and policy. Opportunities for distance learning and certificate programs in public health at the undergraduate and graduate levels are being developed.

Two programs in the college currently are accredited: the industrial hygiene program is accredited by the Accreditation Board for Engineering and Technology (ABET)/American Board of Industrial Hygiene (ABIH), and the Master of Health Administration and the Ph.D. in health management and policy are accredited by the Accrediting Commission on Education for Health Services Administration (ACHESA). The college has submitted a request for pre-accreditation to the Council on Education in Public Health (CEPH), the accrediting body for the nation’s schools and colleges of public health.

**Admission**

Detailed information about graduate study at The University of Iowa, including application requirements and procedures, is provided in Rules and Regulations of the Graduate College; see the Graduate College section of the Catalog.

Each department in the College of Public Health has a committee that selects candidates for admission. Admission criteria usually include a satisfactory cumulative grade-point average, with special emphasis on science and math courses, Graduate Record Examination scores on the Test of English as a Foreign Language (TOEFL) for international applicants, references, and resumes. Other evaluation criteria include oral and on-campus interviews, written statements, and a match of available faculty mentor with student interests. Application deadlines vary and are published by individual departments.

**Nondegree Students**

Individuals who meet departmental application requirements but do not want to work toward an advanced degree may be admitted on a professional improvement status. Students who wish to register for one or two courses may do so if they meet all of the prerequisites for the courses, have the instructor’s consent, and apply for special student status in the Graduate College.

**Faculty**

The faculty of the College of Public Health includes members with single appointments in the college as well as those who have joint appointments in other colleges at the University, including the Colleges of Engineering, Law, Liberal Arts, and Medicine. In addition, the college’s faculty includes adjunct members from Drake University, the Iowa State Department of Public Health, the Iowa State Hygienic Laboratory, the Iowa Heart Center (in Des Moines), and the National Institutes of Health.

### Specialized Laboratories

The Inhalation Toxicology Facility (ITF), located at the Institute for Rural and Environmental Health on the Oakdale Campus, provides a full array of inhalation toxicology, aerosol science, and bioaerosol assay services. A primary focus of the ITF is the study of toxicants found in the agricultural environment and related exposure situations. The ITF is particularly well-equipped for studying organic dusts and bioaerosols.

The Occupational Hygiene Laboratory (OHL) provides expertise and equipment for exposure assessment in occupational settings. The OHL, also located at the Institute for Rural and Environmental Health on the Oakdale Campus, provides a range of sample collection capabilities and an extensive inventory of sampling equipment. The field and laboratory services available through the OHL support exposure-response studies and control technology development studies in a variety of occupational arenas, including agriculture, construction, and indoor environments [home and office].

### Resources and Affiliations

Some examples of collegiate resources and activities in which students can participate include the Biostatistical Consulting Service: the Clinical Trials Statistical and Data Management Center; the Environmental Health Sciences Research Center; the Great Plains Center for Agricultural Health; the Injury Prevention Research Center; the Lipid Research Center; the Preventive Intervention Center; the Women’s Health Initiative; the Heartland Center for Occupational Health and Safety; and WORKSAFE IOWA. Collegiate programs are enhanced through affiliations with the Iowa Department of Public Health; the University Hygienic Laboratory—the state’s only public health laboratory; the State Health Registry of Iowa; the University of Iowa Hospitals and Clinics—the state’s tertiary health care facility; the Colleges of Dentistry, Medicine, Nursing, and Pharmacy; the University of Iowa Clinical Research Center; the Center for International Rural and Environmental Health; the Department of Internal Medicine’s division of clinical epidemiology; the Hazardous Substance Research Center; the Center for Global and Regional Environmental Research; the Center for the Health Effects of Environmental Contamination; and the Environmental Engineering and Science Program in the Department of Civil and Environmental Engineering. In addition, the college enjoys many strong relationships with private sector employers in the state of Iowa and the Midwest, which provide experiential learning opportunities for students.
Facilities

The college’s administrative offices are housed in the Steindler Building, on the University’s health sciences campus. Faculty offices are located in Steindler and Westlawn, the Medical Education Building, and the Institute for Rural and Environmental Health (on the Oakdale Campus). Specialized laboratories also are located on the Oakdale campus.

Three student computer laboratories are housed within the college. Available software includes Microsoft Office; word processing, SAS; S-PLUS; Mini-tab; Egret; and Epi Info. Staff monitors are available to assist students with software problems.

The college holds special collections of journals unique to The University of Iowa.

BIOSTATISTICS

Head: Robert F. Woolson
Interim deputy head: William R. Clarke
Professors: Stephan Amdt (Psychiatry), Leon Burmeister, Trudy Burns, William Clarke, Charles Davis, Michael Jones (Statistics and Actuarial Science), Bruce Pfitz (Epidemiology/Psychiatry), George Woodworth (Statistics and Actuarial Science), Robert Woolson (Statistics and Actuarial Science), Veronica Veland (Psychiatry), Dale Zimmerman (Statistics and Actuarial Science)

Assistant professors: Jeffrey Dawson, Jian Huang (Statistics and Actuarial Science), Jon Lemke, Jane Pendergast
Adjunct associate professor: Rahul Parsa
Assistant professors: Kathryn Cowles (Statistics and Actuarial Science), Douglas Langbehn (Psychiatry), Kai Wang
Adjunct associate professor: Jude Igboke
Adjunct associate: Martha Jones
Visiting associate: Colin West

Graduate degrees: M.S., Ph.D. in Biostatistics
Web site: http://www.public-health.uiowa.edu/biosta/BIOWEB.html

The Department of Biostatistics prepares students for professional and academic careers in biostatistics. Students are guided by faculty members whose research interests include general statistics, statistical computing, design of sample surveys, repeated measures analysis, design and analysis of clinical trials, categorical data analysis, quantitative epidemiological methods, survival analysis, and statistical methods in genetics. Biostatistics faculty members work closely with both clinical and basic science investigators at the University of Iowa Health Sciences Center in the design and analysis of research projects.

The department offers two graduate degrees: Master of Science and Doctor of Philosophy. In addition, a biostatistics subtrack is available in the M.P.H. degree; see “Master of Public Health (M.P.H.)” in this section of the Catalog.

Master of Science

The M.S. program provides training in the design and analysis of experiments and sample surveys and in analysis of data related to biomedical or public health problems. Mathematical, statistical, and computer methods for dealing with quantitative information are emphasized, and there are opportunities for students to gain statistical consulting experience on a variety of problems.

Graduates find career opportunities in many areas, including pharmaceutical, health care, and research companies and institutions, consulting firms, universities, and government agencies.

The program requires a minimum of 38 semester hours of course work. Students must maintain a grade-point average of at least 3.00. Those who receive a grade of C on 7 or more semester hours of course work may be dismissed from the program.

All master’s degree students are required to complete an in-depth preceptorship under the direction of a departmental faculty member and a final comprehensive-style examination.

REQUICKED COURSES

22S:153-154 Mathematical Statistics I-II 6 s.h.
096: 114 Human Pathophysiology I 3 s.h.
096: 115 Human Pathophysiology II 3 s.h.
171:173 Intermediate Design of Sample Surveys 3 s.h.
171:201-202 Biostatistical Methods I-II 8 s.h.
171:241 Statistical Methods in Epidemiology 3 s.h.
171:266 Statistical Methods in Clinical Trials 3 s.h.
173:140 Epidemiology I: Principles 3 s.h.

ELECTIVES

Students select at least 6 semester hours.

22S:138 Bayesian Statistics 3 s.h.
22S:161 Applied Multivariate Analysis 4 s.h.
22S:255 Linear Models 4 s.h.
171:164 Research Data Management 3 s.h.
171:242 Statistical Methods in Epidemiology II 3 s.h.
171:261 Survival Data Analysis 3 s.h.
171:262 Analysis of Categorical Data 3 s.h.
171:263 Statistical Genetics 3 s.h.
171:264 Longitudinal Data Analysis 3 s.h.
171:267 Intervention and Clinical Trials 3 s.h.
173:240 Epidemiology II: Methods 3 s.h.

Doctor of Philosophy

The Ph.D. program prepares students for professional and academic careers in biostatistics, especially for positions in which there is an emphasis on developing and applying statistical methodology to solve important biological and public health problems.

The doctoral degree requires a minimum of 79 semester hours of course work. Doctoral students must maintain a grade-point average of at least 3.00. Those who receive a grade of C on 7 or more semester hours of course work may be dismissed from the program.

All doctoral students are required to complete an in-depth preceptorship under the direction of a departmental faculty member. They also must successfully complete a qualifying examination, a comprehensive examination, and a dissertation—a substantial scholarly treatise. 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 departmental and other University of Iowa courses.

Requirements for the Ph.D. are as follows.

REQUICKED COURSES

22S:153-154 Mathematical Statistics I-II 6 s.h.
096: 114 Human Pathophysiology I 3 s.h.
096: 115 Human Pathophysiology II 3 s.h.
171:173 Intermediate Design of Sample Surveys 3 s.h.
171:201-202 Biostatistical Methods I-II 8 s.h.
171:241 Statistical Methods in Epidemiology 3 s.h.
171:266 Statistical Methods in Clinical Trials 3 s.h.
173:140 Epidemiology I: Principles 3 s.h.

In addition, courses are required from the following lists.

List A

All of these:
22S:255 Linear Models 4 s.h.
171:251-252 Theory of Biostatistics I-II 8 s.h.
171:290 Advanced Biostatistics Seminar 1 s.h.

List B

Three of these:
22S:256 Multivariate Analysis 4 s.h.
171:261 Survival Data Analysis 3 s.h.
171:262 Analysis of Categorical Data 3 s.h.
171:264 Longitudinal Data Analysis 3 s.h.

List C

Two of these:
22S:138 Bayesian Statistics 3 s.h.
22S:161 Applied Multivariate Analysis 4 s.h.
22S:248 Computer Intensive Statistics 4 s.h.
171:263 Statistical Genetics 3 s.h.

List D

Three semester hours from these:
22S:156 Applied Time Series Analysis 3 s.h.
22S:195 Probability and Stochastic Processes I 3 s.h.
171:243 Cohort Data Analysis 1 s.h.
171:265 Advanced Topics in Genetic Data Analysis 3 s.h.
171:280 Preceptorship 1 s.h.
171:290 Advanced Biostatistics Seminar 1 s.h.
Any course not already taken from List B or C, above

ELECTIVES

Students must complete at least 6 semester hours of electives chosen from the following list or from other graduate-level health science courses, in consultation with their advisors.

Biostatistics

171:260 Genetics and Epidemiology 4 s.h.
171:267 Intervention and Clinical Trials 3 s.h.

Community and Behavioral Health

172:150 Health Behavior and Health Education 3 s.h.
Environmental Health
175:202 Environmental Health 3 s.h.
175:209 Rural Health and Agricultural Medicine 3 s.h.
175:230 Occupational Health 3 s.h.
175:252 Theories of Environmental Policy and Assessment 3 s.h.
175:260 Environmental Toxicology 3 s.h.

Epidemiology
173:240 Epidemiology II: Methods 3 s.h.
173:251 Injury Epidemiology 3 s.h.
173:255 Epidemiology of Infectious Disease 4 s.h.
173:256 Hospital Epidemiology 2 s.h.
173:260 Chronic Disease Methods 1 s.h.
173:261 Epidemiology of Aging 1 s.h.
173:262 Neuroepidemiology 1 s.h.
173:263 Epidemiology of Reproductive Diseases 2 s.h.
173:265 Cardiovascular Disease Epidemiology 3 s.h.
173:267 Psychiatric Epidemiology 3 s.h.
173:270 Cancer Epidemiology and Control 3 s.h.
173:291 Pharmacoepidemiology 3 s.h.

PRECEP/SHIP
171:280 Preceptorship in Biostatistics 3 s.h.

DISSERTATION
171:300 Thesis/Dissertation (at least two semesters in residence) 10 s.h.

Admission
Detailed information about graduate study at The University of Iowa, including application requirements and procedures, is provided in Rules and Regulations of the Graduate College; see the Graduate College section of the Catalog.

The biostatistics faculty takes several factors into consideration when evaluating applications for admission, including GRE 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 master’s and doctoral program applicants must hold a baccalaureate degree and have a cumulative grade-point average of at least 2.70 (for master’s applicants) and at least 3.00 (for doctoral applicants). Applicants must have taken the Graduate Record Examination (GRE) General Test. International applicants who do not hold a baccalaureate degree from an accredited college or university in the United States, the United Kingdom, Canada [except Quebec], Australia, or New Zealand are required to take the Test of English as a Foreign Language (TOEFL) earning a score of at least 600 on the paper-based exam or at least 250 on the computer-based exam. International applicants whose TOEFL scores fall below those ranges are not considered for admission.

All applicants and continuing students are required to have strong written and oral communication skills.

All master’s program applicants must be able to program in at least one computer language, preferably Fortran or C. They also must have mathematical sciences training in methods and techniques of simple variable and multivariable differential and integral calculus, and in linear algebra.

Although direct enrollment in the Ph.D. program is possible, prior completion of the M.S. program is generally required.

APPLICATION DEADLINES FOR M.S.
For fall entrance: January 15 (early) and March 15 (late)
For spring entrance (not encouraged): October 1

APPLICATION DEADLINES FOR PH.D.
For fall entrance: January 15 (early) and March 15 (late)
For spring entrance (not encouraged): October 1

Financial Support
A limited number of teaching and research assistants and a predoctoral fellowship are available. Assistantships offer financial support and resident tuition and provide valuable on-the-job training experiences.

The University’s Office of Student Financial Aid offers information on financing education through jobs, grants, and loans.

A variety of opportunities for funded postdoctoral fellowships exist and are available for further scientific training in the disciplines represented in the college. Programs exist in cardiovascular disease, cancer, mental health, otolaryngology, speech pathology and audiology, pharmacoepidemiology, epidemiology of voice disorders, agricultural health and safety, and injury prevention. Fellowships sponsored by federal agencies are available only to U.S. citizens and permanent residents.

The Department of Biostatistics has spurred development of the Center for Statistical Genetics Research, a joint research center of the Colleges of Medicine and Public Health. Faculty and students from across the university are expected to interact through the center’s programs, which will focus on statistical genetics research.

Courses
171:161 Introduction to Biostatistics 3 s.h.
Application of statistical techniques to biological data; descriptive statistics; probability; binomial, Poisson, and normal distributions; sampling distribution; test of significance; confidence intervals; analysis of frequency data; simple linear regression. Offered fall and spring semesters. Prerequisite: college algebra.

171:182 Design and Analysis of Experiments in Biomedical Sciences 3 s.h.
Linear, polynomial, multiple regression; correlation analysis; regression diagnostics; model-building; analysis of covariance; one- and two-way layouts for fixed, random, and mixed effects models; multiple comparison procedures; orthogonal contrasts; use of the computer for data analysis. Offered spring semesters. Prerequisite: 171:161 or equivalent. Same as 22S:140.

171:163 Introduction to the Design of Sample Surveys 3 s.h.
Techniques of constructing and analyzing sample surveys, including general methods of estimation, properties of estimators, simple random sampling, stratified sampling, ratio and regression estimators, systematic sampling, cluster sampling. Offered fall semesters of odd years. Prerequisite: 171:161 or equivalent.

171:164 Research Data Management 3 s.h.
Skill in gathering, processing, and managing biomedical research data, especially large databases; form design; data editing; system utilities; data management computer systems, statistical packages. Offered fall semesters of odd years. Prerequisite: Fortran, Pascal, or C programming capability.

171:173 Intermediate Design of Sample Surveys 3 s.h.
Basic sample survey designs with emphasis on construction and number of strata, unbiased ratio estimators, multistaged sampling, estimation of variance in complex surveys, double sampling, sampling frame construction problems, panel studies, and problems due to nonresponse. Offered spring semesters of even years.

171:201 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. Prerequisites: two semesters of calculus; consent of instructor.

171:202 Biostatistical Methods II 4 s.h.
Continuation of 171:201, which is prerequisite; linear regression and correlation, multiple linear regression, single and multiple factor experiments, multiple comparisons, orthogonal contrasts, analysis of covariance, life table analysis, rate adjustment, analysis of odds ratios, parametric and nonparametric method; emphasis on computer use. Offered spring semesters. Prerequisite: 171:201.

171:241 Statistical Methods in Epidemiology 3 s.h.
Methodologic techniques for epidemiologic studies: estimation of rates and risks, standardization mortality ratios; Poisson regression for cohort data. Offered spring semesters of odd years. Prerequisites: 171:162 and 171:241.

171:243 Cohort Data Analysis 1 s.h.
Methods of computing direct and standardized rates, indirect standardized rates, and standardized mortality ratios: Poisson regression for cohort data; rationale for cohort data analysis methods; and completing the preceding course on real data using a computer. Offered spring semesters of odd years. Consent of instructor required. Prerequisite: 171:162 or 171:241.

Resources
Examples of ongoing departmental resources and activities include the Biostatistical Consulting Center, the Clinical Trials Statistical and Data Management Center, and the Center for Public Health Statistics. The Biostatistical 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, including studies of new treatments for acute ischemic stroke and use of hypothermia in aneurysm surgery. 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.
COMMUNITY AND BEHAVIORAL HEALTH

Head: John B. Lowe
Professors: Elizabeth Altmaier (Psychological and Quantitative Foundations); John B. Lowe, Paul Pompeu
Associate professors: James Jackson Barnett, Kristi Ferguson, James Hall (Social Work); Nancy Thompson
Adjunct lecturers: Phyllis Stumbo
Web site: http://www.public-health.uiowa.edu/cbh

The Department of Community and Behavioral Health’s primary focus areas are tobacco control, alcohol and other drug use, clinical prevention and early detection of cancer, and education program evaluation.

Courses

172:130 Social Sciences and Health 2 s.h.
Social and behavioral science concepts and methods relevant to effective development, implementation, improvement of health programs. Offered spring semesters.

172:150 Health Behavior and Health Education 3 s.h.
Usual theories of health behaviors and health education, application to a variety of settings. Offered spring semesters.

172:210 Independent Study Community and Behavior Health
Self guided study under direction of mentor; topic selected by student from previous or special course work.

172:215 Community Preventive Programs and Services 2 s.h.
Overview of recommended community preventive programs and services, information useful in their development and implementation. Offered fall semesters.

172:220 Research in Community and Behavior Health
Research in selected topics.

Epidemiology

Head: James C. Torner
Professors: Elizabeth Christichelles, Michael Cohen (Pathology), Gary Doern (Pathology), James Hanson (Pediatrics), Susan Johnson (Obstetrics and Gynecology), Ronald Lauer (Pediatrics), Steve Levy (Preventive and Community Dentistry), Charles Lynch (Pathology), Larry Maloney (Pediatrics), Jeffrey Murray (Pediatrics/Biological Sciences/Pediatric Dentistry), Michael Pfaffer (Pathology), Bruce Pföh (Psychiatry), Helmut Schott (Internal Medicine), Elaine Smith (Pathology), Robert Wallace (Internal Medicine)

The Department of Epidemiology focuses on health care organization and delivery, risk factors for disease in the general population, behavioral factors in disease, 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, adverse reproductive outcome epidemiology, anatomic pathology, cardiovascular disease, nutrition, smoking cessation, epidemiology of reproduction, dental epidemiology, neuroepidemiology, meta-analysis, intervention trials, international health, and effects of aging.

The department offers two graduate degrees: Master of Science and Doctor of Philosophy. In addition, an epidemiology subtrack is available in the M.P.H. degree; see “Master of Public Health [M.P.H.]” in this section of the Catalog.

Master of Science

The M.S. 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.

The degree is offered with or without thesis. It requires 38 semester hours. Students must maintain a grade-point average of at least 3.00. Those who receive a grade of C on 7 or more semester hours of course work may be dismissed from the program.

REQUISITED COURSES

All of these:

069:133 Introduction to Human Pathology 3 s.h.
171:161 Introduction to Biostatistics 3 s.h.
171:162 Design and Analysis of Experiments in Biomedical Sciences 3 s.h.
The degree requires a minimum of 74 semester hours of course work. Doctoral students must maintain a grade-point average of at least 3.00. Those who receive a grade of C on 7 or more semester hours of course work may be dismissed from the program.

All doctoral students must successfully complete a qualifying examination, a comprehensive examination, and a dissertation—a substantial scholarly treatise. 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 departmental and other University of Iowa courses.

In addition to the following course work, students are required to attend departmental seminars and a journal club.

**REQUIRED COURSES**

- 069: 133 Introduction to Human Pathology 3 s.h.
- 072: 151 Intermediate Physiology 4 s.h.
- 171: 161 Introduction to Biostatistics 3 s.h.
- 171: 162 Design and Analysis of Experiments in Biomedical Sciences 3 s.h.
- 171: 163 Introduction to the Design of Sample Surveys 3 s.h.
- 171: 164 Research Data Management 3 s.h.
- 172: 150 Health Behavior and Health Education 3 s.h.
- 173: 140 Epidemiology I: Principles 3 s.h.
- 173: 160 Introduction to Epidemiology 3 s.h.
- 173: 250 Epidemiology of Infectious Diseases 4 s.h.
- 173: 256 Hospital Epidemiology 2 s.h.
- 173: 260 Chronic Disease Methods 1 s.h.
- 173: 261 Epidemiology of Aging 1 s.h.
- 173: 262 Neuroepidemiology 1 s.h.
- 173: 263 Epidemiology of Reproductive Diseases 2 s.h.
- 173: 265 Cardiovascular Disease Epidemiology 3 s.h.
- 173: 267 Psychiatric Epidemiology 3 s.h.
- 173: 270 Cancer Epidemiology and Control 3 s.h.
- 173: 285 Outcomes Research 2 s.h.
- 173: 290 Intervention and Clinical Trials 3 s.h.
- 173: 291 Pharmacoepidemiology 3 s.h.

**OTHER ELECTIVES**

Students work with their adviser to select at least 7 semester hours of course work appropriate to their educational goals. Selections may be made from the following list or from other graduate-level courses in the General Catalog.

- 171: 163 Introduction to the Design of Sample Surveys 3 s.h.
- 171: 164 Research Data Management 3 s.h.
- 173: 150 Introduction to Clinical Epidemiology 2 s.h.
- 173: 200 Independent Study in Epidemiology 3 s.h.
- 173: 253 Epidemiology of Occupational Injuries 3 s.h.
- 174: 251 Planning and Market Research for Health Systems 3 s.h.
- 175: 209 Rural Health and Agricultural Medicine 3 s.h.
- 175: 230 Occupational Health 3 s.h.
- 175: 260 Environmental Toxicology 3 s.h.

**ELECTIVES**

In choosing elective courses, students may take departmental courses, including any from the list above that the student did not use to fulfill the "Application" requirement. Students also may take courses offered by other departments, subject to approval by their faculty adviser and the course director.

**DISSERTATION**

All doctoral students must successfully complete a Ph.D. thesis.

173: 300 Thesis 10-18 s.h.

**Admission**

Detailed information about graduate study at The University of Iowa, including application requirements and procedures, is provided in Rules and Regulations of the Graduate College; see the Graduate College section of the Catalog.

The epidemiology faculty takes several factors into consideration when evaluating applications for admission, including GRE 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 grade-point average of at least 2.70. Undergraduate preparation must have included two semesters of biological sciences and mathematics course work through calculus.

Ph.D. program applicants must hold a baccalaureate degree, and an M.S. or M.P.H. degree is recommended. A cumulative grade-point average of 3.00 is required. Courses in the biological, physical and mathematical sciences provide important background course work; one semester of calculus and two semesters of biological sciences are highly recommended. Computing skills also are desirable.

All applicants must have taken the Graduate Record Examination (GRE) General Test. International applicants who do not hold a baccalaureate degree from an accredited college or university in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand are required to take the Test of English as a Foreign language (TOEFL), earning a score of at least 600 on the paper-based exam or at least 250 on the computer-based exam. International applicants whose TOEFL scores range from 550 to 599 (paper-based) or 213 to 249 (computer-based) are required to take English fluency courses. Applicants whose TOEFL scores fall below those ranges are not considered for admission.

All applicants and continuing students are required to have strong written and oral communication skills.

**APPLICATION DEADLINES FOR M.S.**

For fall entrance: July 1 for U.S. citizens; April 15 for international applicants.

For spring entrance (not encouraged): December 1 for U.S. citizens; October 1 for international applicants.

**APPLICATION DEADLINES FOR PH.D.**

For fall entrance: April 1

For spring entrance (not encouraged): October 1
Courses

173:111 International Health 3 s.h.

Urgent health needs 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. Offered fall semesters. Same as 152:111, 175:11.

173:140 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; application of epidemiology to public health practice; communication and dissemination of epidemiological findings. Offered fall semesters.

173:150 Introduction to Clinical Epidemiology 2 s.h.

Concepts, methods, and examples of clinical measurement, clinical diagnosis, risk, prognosis, study design, biologic markers, decision analysis, meta-analysis. Pre or corequisites: 171:161 and 173:140.

173:160 Introduction to Epidemiologic Data Analysis With Computers 2 s.h.

Organization, collection, management, and analysis of epidemiological data using computer programs. Offered fall semesters. Pre or corequisites: 171:161 and 173:140.

173:190 Problems and Special Topics in Epidemiology arr.

Didactic material in epidemiology; may include tutorial, seminar, faculty-directed independent work (e.g. literature search, project, short research project).

173:195 Preceptorship in Epidemiology arr.

Work experience using knowledge and skill acquired in class room; arranged in conjunction with ongoing department or college activities or with governmental agencies or private industry.

173:200 Independent Study in Epidemiology arr.

In-depth pursuit of an area of special interest in epidemiology requiring substantial creativity and independence.

173:205 Research in Epidemiology arr.

Research that may lead to a dissertation.

173:225 Genetics and Epidemiology 4 s.h.

Basic human genetic and population genetics principles; methods of integrating genetic principles into epidemiological studies; use of genetic and family data. Offered spring semesters of odd years. Prerequisites: introductory biology, 171:161, and 173:140; or consent of instructor. Same as 171:230.

173:230 Principles of Dietary Assessment 1 s.h.

Evaluation of nutritional assessment methods; experience designing and carrying out a study using nutrition assessment methods, including nutrient and statistical analysis. Offered fall semesters. Prerequisite: 3 s.h. of college nutrition.

173:235 Nutritional Epidemiology 2 s.h.

Epidemiological research, diet, nutrition variables; analysis of articles regarding nutrition, epidemiology research; focus on group work. Offered spring semesters. Recommended: a basic nutrition course.

173:266 Nutrition Intervention in Clinical Trials Research 2 s.h.

Clinical trial research with focus on nutrition interventions; how to evaluate current nutrition findings from clinical trial research; nutrition-related clinical trials, assessments of nutrient intake generated by these trials; behavioral change strategies used to accomplish diet interventions. Offered fall semesters. Recommended: a basic nutrition course.

173:240 Epidemiology II: Methods 3 s.h.

Epidemiologic study design; bias, confounding, effect modification; matching; vital statistics; descriptive studies; case-control studies; cohort studies; intervention studies; measurement principles; data sources; questionnaire design; conduct of surveys, relation to disease classification; examples from acute, communicable, chronic, and genetic diseases as well as medical care organization and delivery. Offered spring semesters. Prerequisites: 171:161 and 173:140.

173:251 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. Prerequisite: 173:140 or consent of instructor. Same as 173:251.

173:253 Epidemiology of Occupational Injuries 3 s.h.

Aspects of epidemiological literature on occupational injuries. Offered spring semesters of even years. Prerequisite: 173:140 or consent of instructor. Same as 173:253.

173:255 Epidemiology of Infectious Disease 4 s.h.

Underlying epidemiological concepts of infection and disease, causation, transmission, surveillance, sero-epidemiology, molecular epidemiology; prevention and control of infectious diseases; case studies. Offered spring semesters of even years. Prerequisite: 173:140 or equivalent. Same as 173:257.

173:256 Hospital Epidemiology 2 s.h.

Infectious and noninfectious adverse outcomes of medical care and appropriate investigative methods; surveillance, resistant organisms, molecular epidemiology, tuberculosis control, device-associated infections, latex allergies, isolation, construction, sterilization, regulatory agencies. Offered spring semesters of odd years. Prerequisite: 173:140 or equivalent.

173:260 Chronic Disease Methods 1 s.h.

Survey and biologic methods for exposure measurement in epidemiologic studies of chronic disease; measurement of disease, life-style, nutrition, occupation, family history. Offered spring semesters. Prerequisite: 173:140 or consent of instructor.

173:261 Epidemiology of Aging 1-2 s.h.

Epidemiologic methods for assessing and interpreting the health status of older persons through life span studies, research studies, health programs. Offered fall semesters. Prerequisite: 173:140. Same as 155:261.

173:262 Neuroepidemiology 1 s.h.

Basic epidemiologic concepts applied to neurologic disease; concepts, methods, examples of neuroepidemiology; various diseases, methods. Offered spring semesters. Prerequisite: 173:140.

173:263 Epidemiology of Reproductive Diseases 2 s.h.

Introduction; evaluation of current epidemiologic findings regarding underlying etiology, behavioral, genetic causes and known preventive measures for reproductive diseases, conditions. Offered spring semesters. Prerequisite: 173:140.

173:265 Cardiovascular Disease Epidemiology 3 s.h.

Natural history of atherosclerotic disease and human factors affecting its development; atherosclerotic disease in various populations worldwide and in men and women of varied ages; clinical trials to delay onset, reduce incidence, improve outcome of cardiovascular disease. Offered fall semesters of odd years. Prerequisites: 171:161 and 173:140.

173:267 Psychiatric Epidemiology 3 s.h.

Population-based studies of mental 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 fall semesters. Prerequisite: 173:140 or consent of instructor. Recommended: 173:240 or two years of resident training in psychiatry. Same as 173:255.

173:276 Health Care Utilization Outcomes 3 s.h.

Research tools to assess changes in health care use “se and cost as outcomes of treatments: evidence-based medicine; meta-analysis methods; decision trees, cost-of-illness analysis, cost effectiveness models. Same as 174:268.

173:279 Cancer Epidemiology and Control 3 s.h.

Incidence, mortality, survival, risk factors, cancer control options for major cancer sites; principles and methods of cancer registration in Iowa. Offered spring semesters. Prerequisites: 171:161 and 173:140.

173:280 Introduction to Health Care Organization 3 s.h.

Basic arrangements of services in the United States; social, political, psychological, economic forces that shape health services; determinants of use, amounts, types of health resources available, financing methods, government regulation; current issues. Same as 174:200.

173:285 Outcomes Research 2 s.h.

Conceptual understandings and collection of valid outcomes and data, use of outcomes data in clinical and population based care management; intricacies of research methodology and health-related quality-of-life assessment. Offered spring semesters. Prerequisite: introductory research methods (e.g., 173:140).

173:290 Intervention and Clinical Trials 3 s.h.

Methodologic introduction to rationale, design, conduct, analysis, and presentation of clinical trials; basics of clinical trial design, variety of designs, examples from clinical trials; bio-statistical methods, including sample size determination. Offered fall semesters of even years. Prerequisites: 171:161 and 173:140, or equivalents. Same as 171:267.

173:291 Pharmacoeconomics 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 pharmacoeconomics, pharmacoeconomics. Offered fall semesters of even years. Prerequisite: 173:140.


4-6.

173:340 Epidemiology III: Theories 3 s.h.

How epidemiology fits into the wider context of scientific inquiry. Offered fall semesters of odd years. Prerequisites: 173:140 and 173:240.
hospital and health administration, today is carried out by the Department of Health Management and Policy. The department, whose programs consistently are ranked among the foremost in the field, has produced graduates who hold key positions in all areas of health management and policy, both in the United States and abroad.

The department’s Master of Health Administration (M.H.A.) program is accredited by the Accrediting Commission on Education for Health Services Administration. In addition to the M.H.A. and the Ph.D. in health management and policy, the department also offers joint degree programs with the Tippie College of Business, the College of Law, and the department of Urban and Regional Planning. See “Joint Master’s Degrees” in this section of the Catalog.

Master of Health Administration

The M.H.A. program prepares students for a wide variety of positions in health care management. The curriculum is designed to help students attain a comprehensive understanding of issues involved in patient-centered service organizations, and strong business skills.

A total of 60 semester hours of graduate credit (generally 21 months of full-time study) are required to complete the master’s degree. Transfer credit and course waivers are allowed, but all students are expected to complete a minimum of 54 semester hours during their course of study.

Students work carefully with their advisers to create plans of study that incorporate required courses and further individual students’ career goals. Through elective course work, students may develop an emphasis in areas of special interest such as operations management, rural health, managed care, financial management, or aging.

During the first year, students are introduced to the social, political, economic, and financial environments of health care organizations. The concepts, tools, and techniques of effective managerial decision making, planning, and control also are presented.

During the second year, students pursue in-depth applications of management concepts and develop skills in areas relating to their special interests and career objectives.

Core courses in management, economics, law, managerial finance, and financial accounting provide students with necessary business skills. Students also may take course work in other areas of business and in urban and regional planning.

 REQUIRED COURSES

- 174:205 Issues in Health Management and Policy 3 s.h.
- 174:206 Health Services Information Systems 3 s.h.
- 174:212 Health Economics I 1 s.h.
- 174:213 Health Economics II 3 s.h.
- 174:214 Financial Accounting for Health Care Organizations 3 s.h.
- 174:215 Managerial Finance 3 s.h.
- 174:216 Financial Management of Health Institutions 3 s.h.
- 174:224 Human Resources Management 2 s.h.
- 174:237 Legal Aspects of Health and Medical Care 3 s.h.

ELECTIVES

Students choose 21 semester hours of course work, which must include 12 semester hours taken in the Department of Health Management and Policy.

Summer Internships, Fellowships, Residencies

The department facilitates placement of master’s degree students in optional summer internships the summer between the first and second years of study. Summer internships offer students the opportunity for practical experience outside the classroom, observing and interacting with executives in a health care setting. Internships are full-time positions that usually last 10-12 weeks. Students normally receive a salary or stipend, and in some cases, assistance with living arrangements. Internships may carry 3 semester hours credit.

Many master’s degree students choose to complement their academic training with a postgraduate fellowship or residency. Such experiences afford a valuable means of observing, developing, and demonstrating practical management techniques and skills as well as developing connections with colleagues. The department takes an active role in helping students identify and secure fellowship and residency positions.

Joint Master’s Degrees

Students who wish to pursue an integrated program combining a graduate degree in health management and policy with a degree in another field should discuss their plans with both academic units and indicate their interest when submitting application materials.

Business

Students interested in combining the traditional strengths of health management and policy with greater exposure to advanced management techniques should consider the joint master’s degree program with the Tippie College of Business.

This combination leads to an M.H.A. in health management and policy and an M.B.A. in business administration. It requires 72 semester hours and can be completed in two and a half years. Separate admission to each degree program is required.

L.aw

The joint program with the College of Law is highly individualized, allowing students to gain in-depth exposure to and training in both health care management and law.

A minimum of 126 semester hours must be earned in order for both degrees to be awarded. Students register only for law courses during their first year. Completion of the program usually requires four years, but students who enroll in the accelerated law program may complete it in less time. The program leads to an M.H.A. in health management and policy and a J.D. in law. Separate admission to each degree program is required.

Urban and Regional Planning

Students interested in developing special expertise in community and health planning may pursue a joint master’s degree with the program in Urban and Regional Planning. The M.A. in urban and regional planning prepares students to develop public policy alternatives that help improve the quality of life in cities and throughout regions.

The program leads to an M.H.A. in health management and policy and an M.A. in urban and regional planning. Separate admission to each degree program is required.

Doctor of Philosophy

The Ph.D. program, established in 1950, was the nation’s first doctoral program in health care management. Students earn the Ph.D. in health management and policy and prepare for work in health services research and education and for leadership roles in universities, government agencies, and health organizations. The program draws upon faculty members from across the University who are committed to interdisciplinary research. Students develop mastery of theories and research methodologies necessary to study the complex American health system.

All doctoral students must pass a preliminary examination, which tests the student’s mastery over core material covered in the first year of course work in the department, including American health systems and health services research methods. It is administered after completion of the first two semesters of course work.

The comprehensive examination is taken at or near the end of formal course work. It focuses on the second-year courses in the student’s chosen track.
CORE COURSES
The content covered in the courses listed below encompasses the core content area expected of all graduates of the Ph.D. program. Depending on their background, students may waive specific courses.

173:140 Epidemiology I: Principles 3 s.h.
174:200 Introduction to Health Care Organization 3 s.h.
174:201 Health Care Management 3 s.h.
174:212-213 Health Economics I-II 4 s.h.
174:251 Planning and Market Research for Health Systems 3 s.h.
174:253 Seminar: Health Systems Management 3 s.h.
174:255 Seminar in Contemporary Health Issues 0 s.h.
174:254 Advanced Organizational Theory in Health Care 3 s.h.
174:261 Health Services Research 3 s.h.
174:263 Independent Research Project 3 s.h.
174:270 Seminar in Health Management Instruction 3 s.h.

TRACKS
After the core courses are completed, the Ph.D. student chooses an area of specialization (track). The organizational studies track provides an emphasis on health care management. The community health systems track focuses on population-based health services. Students also may design their own area of emphasis. All tracks are subject to faculty approval. Each consists of content area courses and statistics or research methods courses.

Four content area courses 12 s.h.
Four methodology or statistics courses 12 s.h.

ELECTIVES
Students take up to 12 semester hours of elective course work.

DISSERTATION
Doctoral candidates prepare dissertations based on original research that tests, extends, or applies concepts or principles to a problem in health care. Students earn 9-15 semester hours for the Ph.D. thesis.

Applicants to the Ph.D. program are expected to hold a master’s degree. Experience in health care and a master’s degree in health administration, public health, or health planning are excellent preparation for the program. A graduate degree in social science, management, or law also may be acceptable, depending on the applicant’s background. Finance, economics, and statistics course work is recommended. A cumulative grade-point average of at least 3.25 (on a 4.00 scale) is generally required for Ph.D. applicants.

All applicants are required to submit academic transcripts, GRE or GMAT scores, three letters of recommendation, and a statement of objectives form (available from the department). Applicants to the Ph.D. program are also required to submit a sample of scholarly writing.

A combined verbal and quantitative score of 1100 on the Graduate Record Examination (GRE) General Test or a score above 600 on the Graduate Management Admission Test (GMAT) is preferred. International applicants who do not hold a baccalaureate degree from an accredited college or university in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand are required to take the Test of English as a Foreign Language (TOEFL) earning a score of at least 600 on the paper-based exam or at least 250 on the computer-based exam. International applicants whose TOEFL scores range from 550 to 599 (paper-based) or 213 to 249 (computer-based) are required to take English fluency courses. Applicants whose TOEFL scores fall below those ranges are not considered for admission.

Generally, admission is made for fall semester only. Campus visits are encouraged and personal interviews are required prior to admission. For applicants unable to interview on campus, the admissions committee conducts telephone interviews.

Financial Support
Every effort is made to provide financial support to students who demonstrate need and maintain satisfactory academic standards. In addition, some awards are offered in recognition of outstanding scholarship and experience, regardless of need. Financial assistance is available in a variety of forms, including scholarships and awards, student loans, and research assistantships.

Research assistantships generally are awarded each academic year 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. Appointment as a research assistant provides a stipend and entitles students to resident tuition.

Opportunities also exist for part-time employment both on and off campus. Further information and application forms for financial aid are available from the Office of Student Financial Aid.

Alumni Association
An active alumni association supports the program in a number of ways, including scholarships, consultation on curriculum, continuing education, research, and fund development. The association also functions as a network for persons entering the profession. Alumni serve as visiting faculty, consultants, and preceptors for summer internships, residencies, and fellowships.

The department’s alumni association also publishes the Alumni Directory and a monthly career opportunity newsletter. Graduates maintain their Iowa connection and learn about news of their classmates, the department, and faculty members and students through the Alumni Newsletter.

The Department of Health Management and Policy and its alumni association jointly sponsor the Annual Executive Symposium each fall. Renowned speakers from around the country present a variety of symposium topics. Health care leaders, alumni, educators, students, and friends of the department attend the two-day symposium, which offers students a high quality educational experience in addition to the opportunity to network with faculty and alumni.

Center for Health Policy and Research
The Center for Health Policy and Research is an expansion of the former Center for Health Services Research. The center is the research arm of the Department of Health Management and Policy and a University-wide interdisciplinary research facility. Faculty members from the Tippie College of Business and the Colleges of Dentistry, Liberal Arts, Medicine, Nursing, Pharmacy, and Public Health serve as investigators in a variety of studies. Master’s and doctoral students may be asked to assist with ongoing research projects.

The Center also 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.

Courses
174:100 Executive Seminar Series 0 s.h.
174:155 U.S. Health Care System Global Perspective 3 s.h.
174:170 Comparing Health Systems: Russia, Eastern Europe, and Eurasia 3 s.h.
174:200 Introduction to Health Care Organization 3 s.h.

The management of services in the United States; social, political, psychological, economic forces that shape health services; determinants of use, amounts and types of health resources available, methods of financing, government regulation, current issues. Same as 173:200.

174:201 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. Consent of instructor required.

174:202 Hospital Organization and Management 3 s.h.

Role of hospitals, governance, organizational structure, medical staff organization, departmental operations. Prerequisites: 174:200 and 174:201, or consent of instructor.


174:204 Quantitative Management in Health Care 3 s.h.

Quantitative decision making in the health field: utility of model-building approach in managerial decision making; formulation, solution, interpretation of management science models; application of models to health field. Consent of instructor required.

174:205 Issues in Health Management and Policy 3 s.h.

Integration and application of theories, concepts, principles; case studies. Consent of instructor required. Prerequisite: 174:201.

174:207 Group Practice and Ambulatory Care Administration 3 s.h.

Delivery of ambulatory health care services, for-profit, and not-for-profit organizations; emphasis on personal administration, education, and training; clinic scheduling; financial accounting; other internal issues. Prerequisites: 174:200, 174:201, and 174:202; or consent of instructor.

174:208 Health Services Information Systems 3 s.h.

Conceptual, practical aspects of analysis, development, and use of computer-based information systems; emphasis on application to the health sciences environment.

174:210 Long-Term Care Management 3 s.h.

Options, organization, delivery in the United States; needs of the long-term care patient; emphasis on management of facilities, such as nursing homes, hospices, specialized care units. Offered by Saturday & Evening Classes. Same as 153:210.

174:212 Health Economics I 1 s.h.

Intermediate-level demand theory, production theory, industrial organization; analysis of health care markets. Consent of instructor required.

174:213 Health Economics II 3 s.h.

Health insurance, hospitals, physicians services, cost effectiveness, analysis, public policy. Prerequisite: 174:212 or consent of instructor.

174:214 Financial Accounting for Health Care Organizations 3 s.h.

Introduction to financial accounting practices in health care delivery organizations.

174:215 Managerial Finance 3 s.h.

Asset valuation, capital structure, capital budgeting under uncertainty, intertemporal efficiency, mergers and acquisitions.

174:216 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. Consent of instructor required.

174:217 Health Insurance and Managed Care History and theory of insurance; comparative health systems; health systems and networks, HMOs, public health insurance, care for uninsured; emphasis on public policy. Prerequisite: 174:212 or consent of instructor. Same as 152:217.

174:218 Topics in Health Administration 1-3 s.h.

Topics related to contemporary problems that concern health care students, administrators. May be repeated.

174:220 Advanced Topics in Managed Care 3 s.h.

Skill development for managed care; risk management, rate setting, reimbursement evaluation in managed care; managed care and regulatory issues; for advanced students. Prerequisite: 174:216 or consent of instructor.

174:221 Evaluation and Outcomes in Health Care 3 s.h.

Qualitative and quantitative methods for evaluating health care quality, effectiveness, program evaluation, health outcomes, clinical and cost effectiveness, evaluation across health care delivery systems. Consent of instructor required.

174:223 Managerial Ethics of Health Delivery 1 s.h.

Implications of ethical standards for health care management; administrative issues, organizational strategies for resolving conflicts. Consent of instructor required.

174:224 Human Resources Management 2 s.h.

Overview of human resource management theories and practices regarding organization for health care; line and staff perspectives on equal employment, staff, training and development, appraisal, compensation. Prerequisite 174:201 or consent of instructor.

174:225 Topics in Health Care Information Systems 3 s.h.

Use of information technology in the health care system; computerized patient records, community health networks, patient confidentiality requirements, software for medical centers, current issues facing information systems executives. Consent of instructor required.

174:226 Informatics Tools for Health Care Decision Support 3 s.h.

Technological tools that support health care administration, management, and decision making. Graduate standing or consent of instructor required. Same as 068:225, 021:375, 050:283, 056:287, 096:283.

174:234 Administrative Internship 3 s.h.

174:235 Administrative Residency/Fellowship 3 s.h.

174:236 Administrative Practicum 3 s.h.

Experience with operational and planning matters in a health care setting. Second-year standing and two consecutive semesters of 3.00 or above g.p.a. required.

174:240 Mental Health Services and Policy I 3 s.h.

Contemporary mental health services and policy: characteristics of mental health services, historical background, evolution, future prospects.

174:251 Planning and Market Research for Health Systems 3 s.h.

Conceptual framework, empirical base for analyzing organization and delivery of medical care; literature, policy regarding accessibility, productivity, program benefits, quality, assessment of need and supply, Consent of instructor required. Prerequisite: 174:200 or equivalent.

174:253 Seminar: Health Systems Management 3 s.h.

Case studies highlighting management as the primary integrative force in health organizations; major areas of executive action in the development of policy, organization, planning, information systems, control. Prerequisite: 174:251.

174:254 Advanced Organizational Theory in Health Care 3 s.h.

Key concepts and their application to health care organizations and health services; perspectives from theoretical writings, empirical studies. Consent of instructor required.

174:255 Seminar in Contemporary Health Issues 0 s.h.

Review of literature on methodological and substantive issues in health services research. Consent of instructor required.

174:261 Health Services Research I 3 s.h.

Fundamentals of problem formulation, design, methodology; emphasis on evaluation of health systems. Consent of instructor required.

174:263 Independent Research Project 3 s.h.

In-depth pursuit of an area in health management and policy. Consent of supervising faculty metier required. May be repeated.

174:266 Advanced Case Management: An Interdisciplinary Approach 3 s.h.

Management of health care outcomes for cost, quality: advanced topics in health care management, interdisciplinary case management; managed care; financial, legal, ethical considerations; outcomes or case management practice. Prerequisite: 096:170 or consent of instructor. Same as 096:266.

174:268 Health Care Utilization Outcomes 3 s.h.

Research tools for assessing how treatment affects health care use and cost; evidence-based medicine, meta-analysis, decision trees, cost-of-illness analysis, cost-effectiveness models. Same as 173:276.

174:270 Seminar in Health Management Instruction 15 s.h.

Opportunity to develop basic teaching skills through presentations, syllabus development, readings and workshops. Open only to Ph.D. students. Prerequisite: completion of preliminary exams.

174:280 Independent Study and Research 1-3 s.h.

Supervised tutorial. Consent of instructor required.

174:285 Ph.D. Dissertation 1-3 s.h.

Research for preparation of dissertation; seminar presentation. Consent of instructor required.

**OCCUPATIONAL AND ENVIRONMENTAL HEALTH**

Head: Craig Zwerling

Professors: Peter Blanck (Law/Psychology), Thomas Cook (Physical Therapy), William Hauser (Oral Pathology, Radiology, and Medicine), Gene Parkin (Civil and Environmental Engineering), Stephen Reynolds, Jerald Schnoor (Civil and Environmental Engineering), Nancy Schembri (Internal Medicine), Peter Thome (Civil and Environmental Engineering), Craig Zwerling (Internal Medicine)

Associate professors: John Frederic Green, George Hallberg

Associate professors: Laurence Fuortes (Internal Medicine), David Wilder (Biomedical Engineering)

Associate professor emeritus: Franklin Kilpatrick

Adjunct associate professors: George Breuer, Mary Gilchrist, Burton Kron

Assistant professors: Patrick O'Shaunnessy (Civil and Environmental Engineering), John Rosecrance (Physical Therapy)

Clinical assistant professor: Frank LaMarte

Clinical instructor: Craig Bainbridge

Associate: Shannon Marquez

Graduate degrees: M.S., Ph.D. in Occupational and Environmental Health

Web site: [http://www.public-health.uiowa.edu/ocheg.html](http://www.public-health.uiowa.edu/ocheg.html)

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, aerosols, physics, air and water quality, environmental chemistry, analytical toxicology, and environmental health in developing countries.

The department offers two graduate degrees: Master of Science and Doctor of Philosophy in Occupational and Environmental Health. Both provide an optional emphasis in industrial hygiene. A joint master’s degree program with the Urban and Regional Planning program also is available. Individuals who are not pursuing a degree in the department but who wish to register for departmental courses may apply for professional improvement status. The
department also offers an occupational medicine residency training program.

WORKSAPE IOWA, administered through the department, offers continuing education outreach programs throughout the year.

**Master of Science**

The M.S. degree requires 38 semester hours and is offered with thesis and nonthesis options.

**REQUIRED COURSES**

One of these:

- 069:133 Introduction to Human Pathology 3-4 s.h.
- 096:114 Human Pathophysiology I 3 s.h.
- 096:115 Human Pathophysiology II 3 s.h.

All of these:

- 171:161 Introduction to Biostatistics 3 s.h.
- 173:140 Epidemiology I: Principles 3 s.h.
- 175:180 Occupational and Environmental Health Seminar (taken twice, for 1 s.h. the first time and 0 s.h. the second) 1 s.h.
- 175:202 Environmental Health 3 s.h.
- 175:230 Occupational Health 3 s.h.
- 175:260 Environmental Toxicology 3 s.h.

**ELECTIVES**

Elective courses fill the semester-hour requirement for the degree. Students and their advisers select courses appropriate to the student’s professional goals. Any courses offered by the College of Public Health that the student has not already taken as a required course may be used as an elective, with the adviser’s approval.

**Industrial Hygiene Emphasis**

The department offers an industrial hygiene emphasis in the M.S., to prepare students for professional careers in industrial hygiene as well as the broad field of occupational and environmental health. Career opportunities are available in the health and safety departments of industries; in consulting firms; in academic institutions; and in local, state, and federal public health agencies.

The M.S. industrial hygiene emphasis requires a minimum of 43 semester hours. Students elect to take specialty and comprehensive exams or to write a thesis. Students who choose the exam option are encouraged to complete an individual project demonstrating problem-solving skills using laboratory, field, and/or library investigations.

Requirements for the M.S. with industrial hygiene emphasis are as follows.

**REQUIRED COURSES**

One of these:

- 069:133 Introduction to Human Pathology 3-4 s.h.
- 096:114 Human Pathophysiology I 3 s.h.
- 096:115 Human Pathophysiology II 3 s.h.

All of these:

- 171:161 Introduction to Biostatistics 3 s.h.
- 173:140 Epidemiology I: Principles 3 s.h.
- 175:180 Occupational and Environmental Health Seminar (taken twice, for 1 s.h. the first time and 0 s.h. the second) 1 s.h.
- 175:190 Occupational Ergonomics I 3 s.h.
- 175:192 Occupational Safety 3 s.h.
- 175:230 Occupational Health 3 s.h.
- 175:252 Theories of Environmental Policy and Assessment 3 s.h.
- 175:260 Environmental Toxicology 3 s.h.

**Dissertation**

All doctoral students must successfully complete a Ph.D. thesis.

**Industrial Hygiene Emphasis**

The department offers an industrial hygiene emphasis in the Ph.D., to provide doctoral students with specialized knowledge in industrial hygiene in addition to their expertise in the broad field of occupational and environmental health.

Requirements for students working toward the Ph.D. with industrial hygiene emphasis are as follows.

**REQUIRED COURSES**

- 171:161 Introduction to Biostatistics 3 s.h.
- 173:140 Epidemiology I: Principles 3 s.h.
- 175:180 Occupational and Environmental Health Seminar (taken twice, for 1 s.h. the first time and 0 s.h. the second) 1 s.h.
- 175:190 Occupational Ergonomics I 3 s.h.
- 175:192 Occupational Safety 3 s.h.
- 175:202 Environmental Health 3 s.h.
- 175:260 Rural Health and Agricultural Medicine 3 s.h.
- 175:230 Occupational Health 3 s.h.
- 175:231 Industrial Hygiene I 3 s.h.
- 175:232 Industrial Hygiene II: Evaluation 4 s.h.
- 175:233 Industrial Hygiene III 3 s.h.
- 175:260 Environmental Toxicology 3 s.h.

**Electives**

Elective courses fill the semester-hour requirement for the degree. Students and their advisers select courses appropriate to the student’s professional goals. Any courses offered by the College of Public Health that the student has not already taken as a required course may be used as an elective, with the adviser’s approval.

**Doctor of Philosophy**

The Ph.D. program prepares students for professional and academic careers in environmental and occupational health.

The degree requires 72 semester hours. All doctoral students must complete a preceptorship and a dissertation—a substantial scholarly treatise. Requirements for the Ph.D. are as follows.

**REQUIRED COURSES**

One of these:

- 069:133 Introduction to Human Pathology 3-4 s.h.
- 096:114 Human Pathophysiology I 3 s.h.
- 096:115 Human Pathophysiology II 3 s.h.

All of these:

- 171:161 Introduction to Biostatistics 3 s.h.
- 173:140 Epidemiology I: Principles 3 s.h.
- 175:180 Occupational and Environmental Health Seminar (taken twice, for 1 s.h. the first time and 0 s.h. the second) 1 s.h.
- 175:190 Occupational Ergonomics I 3 s.h.
- 175:192 Occupational Safety 3 s.h.
- 175:230 Occupational Health 3 s.h.
- 175:252 Theories of Environmental Policy and Assessment 3 s.h.
- 175:260 Environmental Toxicology 3 s.h.

**Dissertation**

All doctoral students must successfully complete a Ph.D. thesis.

**Admission**

Detailed information about graduate study at The University of Iowa, including application requirements and procedures, is provided in Rules and Regulations of the Graduate College; see the Graduate College section of the Catalog.

The occupational and environmental health faculty takes several factors into consideration when evaluating an application for admission, including GRE 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 master’s and doctoral program applicants must hold a baccalaureate degree and have a cumulative grade-point average of at least 3.00 (for master’s applicants) or at least 3.25 (for doctoral applicants).
All applicants must have taken the Graduate Record Examination (GRE) General Test. A minimum GRE score of 1600 (verbal plus quantitative plus analytical) is recommended for master’s applicants, 1650 for doctoral applicants. International applicants who do not hold a baccalaureate degree from an accredited college or university in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand are required to take the Test of English as a Foreign Language (TOEFL), earning a score of at least 600 on the paper-based exam or at least 250 on the computer-based exam. International applicants whose TOEFL scores range from 550 to 599 (paper-based) or 213 to 249 (computer-based) are required to take English fluency courses. Applicants whose TOEFL scores fall below those ranges are not considered for admission.

Undergraduate preparation for master’s applicants must include course work in mathematics, biological sciences, chemistry, and either physical sciences or engineering (requirements depend on the applicant’s chosen specialty area).

Master’s applicants who intend to pursue the industrial hygiene subtrack also must have taken physics and mathematics through calculus; course work in biological sciences, microbiology, and computer programming is highly recommended.

Completion of the master’s program before entry to 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 biological sciences, microbiology, and computer programming are highly recommended, particularly for students interested in some specialized areas.

**APPLICATION DEADLINES**

For fall entrance: April 1 for international applicants, July 1 for U.S. citizens and permanent residents

For spring entrance: October 1 for international applicants, December 1 for U.S. citizens and permanent residents

**Financial Support**

Several graduate student awards are available for individuals interested in industrial hygiene, agricultural and rural environmental health, or prevention of agriculture-related injuries. 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.

Application deadlines for financial support are June 1 for fall semester and December 1 for spring semester.

**Occupational Medical Residency**

The department offers residency training in occupational medicine in affiliation with The University of Iowa Hospitals and Clinics for physicians seeking specialty training in occupational medicine. For information contact the director of the Occupational Medical Residency Program.

**Facilities**

The Department of Occupational and Environmental Health is housed on the University’s Oakdale Campus in the Institute for Rural and Environmental Health (IREH). 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 (ITF), provides a full array of inhalation toxicology, aerosol science, and bioaerosol assay services. A primary focus of the ITF 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 (OHL) provides expertise and equipment for exposure assessment in occupational settings. The OHL provides a range of sample collection capabilities and an extensive inventory of sampling equipment. The field and laboratory services available through the 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 in the IREH.

**Courses**

175:000 Cooperative Education Internship 0 s.h.
Internship for training occupational and environmental health professionals.

175:111 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. Offered fall semesters. Same as 152:111, 173:111.

175:136 Applied Anthropology 3 s.h.
Practical health, environmental, and social problems viewed through an anthropological framework; how anthropological approaches are used to recognize, understand, and address applied problems; studies. Offered spring semesters. Same as 113:136.

175:171 Problems in Occupational and Environmental Health 3 s.h.
Didactic material in occupational and environmental health; may include tutorial, seminar, faculty-directed independent work (e.g., literature review, project, short research project).

175:172 Independent Study in Occupational and Environmental Health 3 s.h.
In-depth pursuit of an area in occupational and environmental health requiring substantial creativity and independence.

175:180 Occupational and Environmental Health Seminar 0-1 s.h.
Contemporary topics in occupational health, agricultural and comparative medicine, environmental health.

175:190 Occupational Ergonomics I 3 s.h.

175:192 Occupational Safety 3 s.h.
Principles and practices of occupational safety; applications in industrial and other occupational settings; interactions with other disciplines. Offered fall semesters.

175:195 Analytical Toxicology Lecture 3 s.h.
Separation, identification, quantitative determination of toxic chemicals and their metabolites in biological and environmental matrices; basic principles and applications of modern instrumental methods of analysis, wet chemical separation, concentration techniques, quality control, good laboratory practice. Offered fall semesters. Prerequisite: 6 s.h. of college chemistry or consent of instructor.

175:196 Analytical Toxicology Lab 3 s.h.
Hands-on laboratory experience applying advanced analytical methods to separate and identify toxic chemical components in biological and environmental samples; use of state-of-the-art instruments, application of quality control/quality assurance protocols, interpretation of data obtained from analytical instruments. Offered spring semesters. Prerequisite: 175:195.

175:198 Solid and Hazardous Wastes 3 s.h.
Sources, characteristics, collection and disposal of solid and hazardous wastes; environmental impacts of hazardous waste management; resource recovery systems. Offered spring semesters. Prerequisite: 053:150 or 175:202 or consent of instructor. Same as 053:158.

175:201 Research in Occupational and Environmental Health 3 s.h.
Research that may lead to a dissertation.

175:202 Environmental Health 3 s.h.
Survey of the field; assessment of contemporary human health issues associated with biological, chemical, physical factors of environment; critical review of environmental factors that affect health; public policies governing recognition, intervention, control. Offered fall semesters.

175:203 Preceptorship in Occupational and Environmental Health 3 s.h.
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.

175:209 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. Offered spring semesters. Prerequisite: enrollment in medical curriculum or 175:140 or consent of instructor.

175:230 Occupational Health 3 s.h.
Principles, practice of occupational medicine, fundamentals of industrial hygiene and safety, occupational health management, ergonomics, occupational health nursing. Offered fall semesters.

175:231 Industrial Hygiene I: Recognition 3 s.h.
Principles, with emphasis on recognition of chemical health hazards, physical health hazards at work. Offered fall semesters. Pre- or corequisite: 175:230.

175:232 Industrial Hygiene II: Evaluation 4 s.h.
Theory, methods of air sampling for evaluation of occupational, environmental exposures to chemical, physical, biological agents. Offered spring semesters. Prerequisite: 175:230.

175:233 Industrial Hygiene 111: Control 3 s.h.
Concepts from physical sciences applied to control of individual hygiene hazards; focus on engineering ventilation controls; nonventilation controls, program management issues and skills. Offered spring semesters. Prerequisite: 175:230 or 175:231 or consent of instructor.

175:251 Injury Epidemiology 4 s.h.
How epidemiology can be applied to injury prevention and control; specific methodological problems involved in the epidemiology of injuries, epidemiology literature, critical evaluation of research articles. Offered spring semesters of odd years. Prerequisite: 175:140 or consent of instructor. Same as 175:251.
The Master of Public Health (M.P.H.)

Director: J. Jackson Barmette
Graduate degree: M.P.H.

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 health professionals whose expertise lies outside of public health.

The M.P.H. is offered with six subtracks: biostatistics, community and behavioral health, ergonomics, occupational and environmental health, policy and planning, and public health epidemiology. Students also may pursue a general M.P.H., for which they must define a focused area of study. The degree requires 39-48 semester hours, depending on the subtrack.

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 administration, and social and behavioral sciences); a bioscience course (or an additional elective course); a practicum; subtrack required courses; and subtrack electives. A written report and oral 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 subtrack.

Common Requirements

The following course work is required for all six subtracks. Students must maintain a grade-point average of at least 3.00 in the core courses.

**CORE COURSES**

- **171: 101 Public Health Practice** 3 s.h.
- **171: 161 Introduction to Biostatistics** [for the biostatistics subtrack] 3 s.h.
- **172: 150 Health Behavior and Health Education** 3 s.h.
- **173: 140 Epidemiology I: Principles** 3 s.h.
- **174: 200 Introduction to Health Care Organization** 3 s.h.
- **175: 202 Environmental Health** 3 s.h.

**BIOSCIENCE REQUIREMENT**

Students take one of the following. Students who already have completed equivalent course work may substitute an additional elective course for the bioscience requirement.

- **069: 133 Introduction to Human Pathology** 3 s.h.
- **096: 115 Human Pathophysiology I** 3 s.h.
- **096: 115 Human Pathophysiology II** 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 in Iowa and surrounding states; the college’s Center of Public Health Practice coordinates placements. Based on background and experience, some students may enroll in the practicum early in the program. For most students, however, the practicum is the culmination of the M.P.H. program. Students must have their advisor’s approval before registering for the practicum. A final written report is required. The practicum, including the report, constitutes the final examination for the M.P.H.

- **170:299 The Practicum Experience** 3 s.h.

**Biostatistics Subtrack**

The biostatistics subtrack focuses on application of biostatistical methods to public health and biomedical sciences, and applications of methodology for design and analysis of research investigations in the health sciences. It provides fundamental training in the public health sciences, core biostatistical theory, and core biostatistical methods vital for health science investigations. Graduates of the program are prepared for work as statistical consultants and data analysts for public health projects.

The biostatistics subtrack requires 47 semester hours. In addition to the course work listed under “Common Requirements,” the following courses are required.

**REQUIRED COURSES**

Students take all of these (20 semester hours).

- **22S:153-154 Mathematical Statistics I-II** 6 s.h.
- **171:173 Intermediate Design of Sample Surveys** 3 s.h.
- **171:201-202 Biostatistical Methods I-II** 8 s.h.

**ELECTIVES**

Students choose 6 semester hours from the following (or 9 if substituting an elective for the bioscience requirement).

- **22S:138 Bayesian Statistics** 3 s.h.
- **22S:161 Applied Multivariate Analysis** 4 s.h.
- **22S:255 Linear Models** 4 s.h.
- **171:164 Research Data Management** 3 s.h.
- **171:242 Statistical Methods in Epidemiology II** 3 s.h.
- **171:261 Survival Data Analysis** 3 s.h.
- **171:262 Analysis of Categorical Data** 3 s.h.
- **171:263 Statistical Genetics** 3 s.h.
- **171:264 Longitudinal Data Analysis** 3 s.h.
- **171:266 Statistical Methods in Clinical Trials** 3 s.h.
- **171:267 Intervention and Clinical Trials** 3 s.h.

**Community and Behavioral Health Subtrack**

The community and behavioral health subtrack prepares public health practitioners to design, implement, and evaluate evidence-based interventions directed toward identified public health problems. The program attracts public health workers who seek new knowledge and skills to apply in their current positions. It is appropriate for program implementation staff in voluntary health organizations. Baccalaureate study in the social and behavioral sciences is good preparation for this subtrack.

The community and behavioral health subtrack requires 42 semester hours. In addition to the course work listed under “Common Requirements,” the following courses are required.

**REQUIRED COURSES**

Students take all of these (10 semester hours).

- **172: 130 Social Sciences and Health** 2 s.h.
- **172:215 Community Preventive Programs and Services** 2 s.h.
- **174:221 Evaluation and Outcomes in Health Care** 3 s.h.
- **A course in designing and implementing community health interventions** 3 s.h.

**ELECTIVES**

Students choose 6 semester hours from the following (or 9 if substituting an elective for the bioscience requirement).

- **019:254 Communication and Change** 3 s.h.
- **028:242 Seminar: Worksetting Health Promotion** 3 s.h.
- **042:222 Social Policy Issues in Health Care** 3 s.h.
- **096:222 Health Promotion and Intervention for Primary Care** 3 s.h.
- **113: 185 Medical Anthropology** 3 s.h.

**Ergonomics Subtrack**

The ergonomics subtrack takes advantage of interdisciplinary faculty strengths in the Colleges of Public Health, Engineering, and Medicine. Ergonomics students gain a thorough
Master of Public Health (M.P.H.)  ●  College of Public Health

A deeper understanding of workplace physical environments that contribute to musculoskeletal injuries and illness. They also acquire knowledge of engineering and administrative methods to control workplace risk factors. The program prepares students for work in industry and government agencies, as well as for further academic training.

The ergonomics subtrack requires 39 semester hours. In addition to the course work listed under “Common Requirements,” the following courses are required.

**REQUIRED COURSES**

Students take all of these (14 semester hours).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>056: 144</td>
<td>Human Factors and Ergonomics I</td>
<td>3</td>
</tr>
<tr>
<td>175:180</td>
<td>Occupational and Environmental Health Seminar</td>
<td>0</td>
</tr>
<tr>
<td>175:190</td>
<td>Occupational Ergonomics I</td>
<td>3</td>
</tr>
<tr>
<td>175:230</td>
<td>Occupational Health</td>
<td>3</td>
</tr>
<tr>
<td>175:294</td>
<td>Occupational Ergonomics II</td>
<td>3</td>
</tr>
<tr>
<td>175:295</td>
<td>Clinical Ergonomics</td>
<td>2</td>
</tr>
</tbody>
</table>

**Electives**

Students who substitute an elective for the bioscience requirement must earn 3 semester hours from the following: there is no elective requirement for other students in the ergonomics subtrack.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>175:192</td>
<td>Occupational Safety</td>
<td>3</td>
</tr>
<tr>
<td>175:231</td>
<td>Industrial Hygiene I: Recognition</td>
<td>3</td>
</tr>
<tr>
<td>175:251</td>
<td>Injury Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>175:253</td>
<td>Epidemiology of Occupational Injuries</td>
<td>3</td>
</tr>
</tbody>
</table>

**Occupational and Environmental Health Subtrack**

The occupational and environmental health subtrack provides students with a broad perspective on public health and career preparation for a variety of professional positions in occupational and environmental health. The program is appropriate for students who have graduate-level professional degrees or public health experience.

The occupational and environmental health subtrack requires 39 semester hours. In addition to the course work listed under “Common Requirements,” the following courses are required.

**REQUIRED COURSES**

Students take all of these (10 semester hours).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>175:180</td>
<td>Occupational and Environmental Health Seminar</td>
<td>1</td>
</tr>
<tr>
<td>175:209</td>
<td>Rural Health and Agricultural Medicine</td>
<td>3</td>
</tr>
<tr>
<td>175:230</td>
<td>Occupational Health</td>
<td>3</td>
</tr>
<tr>
<td>175:260</td>
<td>Environmental Toxicology</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

Students choose 5 semester hours from the following (or 8 if substituting an elective for the bioscience requirement).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>056: 144</td>
<td>Human Factors and Ergonomics I</td>
<td>3</td>
</tr>
<tr>
<td>173:262</td>
<td>Neuroepidemiology</td>
<td>1</td>
</tr>
</tbody>
</table>

**Policy and Planning Subtrack**

The policy and planning subtrack focuses on advanced planning and program evaluation skills, including development of objectives for a health system, articulation of the steps required to meet those objectives, and evaluation of whether objectives have been met. Graduates of the program find positions in federal and state government, and health agencies. A variety of academic backgrounds are appropriate preparation for this program, including business, liberal arts, and the health professions.

The policy and planning subtrack requires 48 semester hours. In addition to the course work listed under “Common Requirements,” the following courses are required.

**REQUIRED COURSES**

Students take all of these (15 semester hours).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>173:263</td>
<td>Epidemiology of Reproductive Diseases</td>
<td>2</td>
</tr>
<tr>
<td>175:190</td>
<td>Occupational Ergonomics I</td>
<td>3</td>
</tr>
<tr>
<td>175:192</td>
<td>Occupational Safety</td>
<td>3</td>
</tr>
<tr>
<td>175:253</td>
<td>Epidemiology of Occupational Injuries</td>
<td>3</td>
</tr>
<tr>
<td>175:294</td>
<td>Occupational Ergonomics II</td>
<td>3</td>
</tr>
</tbody>
</table>

**Electives**

Students choose 9 semester hours from the following (or 12 if substituting an elective for the bioscience requirement).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>171: 162</td>
<td>Design and Analysis of Experiments in the Biomedical Sciences</td>
<td>3</td>
</tr>
<tr>
<td>173: 145</td>
<td>Public Health Data</td>
<td>2</td>
</tr>
<tr>
<td>173: 250</td>
<td>Intro to Epidemiologic Data Analysis with Computer</td>
<td>2</td>
</tr>
<tr>
<td>173: 240</td>
<td>Epidemiology II: Methods</td>
<td>3</td>
</tr>
</tbody>
</table>

**Proteins**

Students choose 5 semester hours from the following (or 8 if substituting an elective for the bioscience requirement).

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>171: 241</td>
<td>Statistical Methods in Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>171: 242</td>
<td>Statistical Methods in EpidemiologyII</td>
<td>3</td>
</tr>
<tr>
<td>173: 225</td>
<td>Genetics and Epidemiology</td>
<td>4</td>
</tr>
<tr>
<td>173: 235</td>
<td>Nutritional Epidemiology</td>
<td>2</td>
</tr>
<tr>
<td>173: 236</td>
<td>Nutrition Intervention in Clinical Trials Research</td>
<td>2</td>
</tr>
<tr>
<td>173: 231</td>
<td>Injury Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>173: 253</td>
<td>Epidemiology of Occupational Injuries</td>
<td>3</td>
</tr>
<tr>
<td>173: 255</td>
<td>Epidemiology of Infectious Diseases</td>
<td>4</td>
</tr>
<tr>
<td>173: 256</td>
<td>Hospital Epidemiology</td>
<td>2</td>
</tr>
<tr>
<td>173: 260</td>
<td>Chronic Disease Methods</td>
<td>1-3</td>
</tr>
<tr>
<td>173: 261</td>
<td>Epidemiology of Aging</td>
<td>1-2</td>
</tr>
<tr>
<td>173: 262</td>
<td>Neuroepidemiology</td>
<td>1</td>
</tr>
<tr>
<td>173: 263</td>
<td>Epidemiology of Reproductive Diseases</td>
<td>2</td>
</tr>
<tr>
<td>173: 265</td>
<td>Cardiovascular Disease Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>173: 267</td>
<td>Psychiatric Epidemiology</td>
<td>3</td>
</tr>
<tr>
<td>173: 270</td>
<td>Cancer Epidemiology and Control</td>
<td>3</td>
</tr>
<tr>
<td>173: 276</td>
<td>Health Care Utilization</td>
<td>3</td>
</tr>
<tr>
<td>173: 280</td>
<td>Introduction to Health Care Organizations</td>
<td>3</td>
</tr>
<tr>
<td>173: 285</td>
<td>Outcomes Research</td>
<td>2</td>
</tr>
<tr>
<td>173: 290</td>
<td>Intervention and Clinical Trials</td>
<td>3</td>
</tr>
<tr>
<td>173: 291</td>
<td>Pharmacoepidemiology</td>
<td>3</td>
</tr>
<tr>
<td>173: 251</td>
<td>Planning and Market Research for Health Systems</td>
<td>3</td>
</tr>
</tbody>
</table>

**Public Health Epidemiology Subtrack**

The public health epidemiology subtrack focuses on fundamental epidemiological concepts and methods. It 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.

The public health epidemiology subtrack requires 39 semester hours. In addition to the course work listed under “Common Requirements,” the following courses are required.

**REQUIRED COURSES**

Students take all of these (10 semester hours).

<table>
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<tr>
<th>Course Code</th>
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<td>173: 240</td>
<td>Epidemiology II: Methods</td>
<td>3</td>
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</tbody>
</table>

**Electives**

Students choose 5 semester hours from the following (or 8 if substituting an elective for the bioscience requirement).

<table>
<thead>
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<td>173: 225</td>
<td>Genetics and Epidemiology</td>
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**Admission**

Detailed information about graduate study at The University of Iowa, including application requirements and procedures, is provided in Rules and Regulations of the Graduate College; see the Graduate College section of the Catalog.

Admission to the M.P.H. program is competitive. Enrollment is limited to 20 students. Applicants are admitted once a year for fall enrollment.
Applicants must hold an undergraduate degree and have a cumulative grade-point average of 3.00 (on a 4.00 scale). Although no specific undergraduate academic major is required, applicants must have successfully completed one semester each of college algebra and biology.

All applicants must submit a Graduate College application form, three letters of reference, a statement of purpose that describes their interest in public health and identifies a focus area, and a résumé describing professional experience in public health or in another relevant health care area. Each applicant must submit his or her score on the Graduate Record Exam (scores must be at or above the median GRE scores for test takers applying to graduate programs).

International applicants who do not hold a baccalaureate degree from an accredited college or university in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand are required to take the Test of English as a Foreign language (TOEFL.), earning a score of at least 600 on the paper-based exam or at least 250 on the computer-based exam.

ADMISSION DEADLINES

For fall entrance: June 1 (or until the class is filled) for U.S. citizens and permanent residents; April 1 for international applicants.

For spring entrance: November 1 for U.S. citizens and permanent residents; October 1 for international applicants.

**Courses**

170:101 Public Health Practice 3 s.h.
History of the public health movement, key public health concepts and functions; public health practice primarily in the United States. Offered spring semesters. Prerequisite: 173:140 or consent of instructor.

170:171 Problems in Public Health arr.
Didactic material in public health, including tutorial, seminar, faculty-directed independent work (e.g., literature search, project, short research project).

170:172 Independent Study in Public Health arr.
In-depth pursuit of a specific area of special interest in public health.

170:201 Research in Public Health arr.

170:203 Preceptorship in Public Health arr.
Individual work experience using knowledge and skill acquired in core classes (placement in College of Medicine or off-campus in a governmental agency or private industry).

170:299 The Practicum Experience 3.6 s.h.

170:300 Thesis arr.

170:998 Special Studies On Campus arr.
On-campus clerkship using community services in primary care practice; how public health and community health agencies operate in the context of the total health care service system. Open only to medical students.
Continuing Education

Dean: http://www.uiowa.edu/~dvenconted/
The Division of Continuing Education was established by special legislation of the General Assembly of Iowa to “render a larger service to the Commonwealth and to the people of Iowa by carrying out to every part of the State the knowledge, the thought, the ideals, and the spirit of several departments and colleges of the University and by bringing the University generally into direct contact with the citizens.”
The division’s organization and services include the following.

Audiovisual Center
Manager: Kim Wail
Web site: http://www.uiowa.edu/~avcenter
The Audiovisual Center provides consultation, planning, design, production, and marketing of instructional audiovisual materials. Its media production units are the University’s major manufacturers of a broad range of graphic, photographic, and audio materials.

Graphics Unit: graphs, charts, maps, titles, layouts, posters, illustrations, models, exhibits, and overhead transparencies
Photographic Service: black-and-white and color photographs, negatives, two-inch slides, filmstrips, portraits, macrophotographs, many types of specialized photography, and still photographic laboratory services
Audio Unit: original audiotape recording [studio and location], tape duplication (open-reel and cassette), sound editing, equalizing, mixing, and transfer

The Audiovisual Center also markets and distributes audiovisual products originated at the University. Nominal royalties are paid to sponsoring University departments and authors.

Center for Credit Programs
Assistant dean: Wayne R. Prophet
Web site: http://www.uiowa.edu/~ccp
In cooperation with participating University colleges and departments, the Center for Credit Programs delivers University of Iowa credit courses in Iowa City and throughout the state in a variety of formats and systems. These instructional activities extend the University’s resources to students whose job, family, geographic location, or other personal circumstances prevent them from attending college as full-time, on-campus students. The program has no residence requirement.

Students may earn credit toward the degree in courses offered through the Center for Credit Programs, via campus-based or distance education formats, or through daytime on-campus courses.

At The University of Iowa, the B.L.S. is awarded by the College of Liberal Arts and Education. A detailed program description is available under “Liberal Studies” in the College of Liberal Arts section of the Catalog and on the Center for Credit Programs’ web site.

Labor Center
Director: Laurence M. Clements
The Labor Center targets instruction to the specific needs of the labor movement in Iowa. Staff members combine on-campus and off-campus programs to reach as many people as possible.

Institute of Public Affairs
Acting director: Tim J. Shields
The institute is the primary research and continuing education link between the University and state, city, and county governments in Iowa. Its services are available to state and local government agencies, to citizen groups interested in civic affairs, and to organizations of public officials, such as the League of Iowa Municipalities and the Iowa State Association of Counties.

The institute provides:

- in-service training and continuing education services to public officials, primarily policymakers and key administrators, with a wide variety of information sources and
educational programs aimed at meeting organizational and leadership development needs;

- research services, informational resources, and publications ranging from Iowa public policy studies to handbooks for elected officials in Iowa governments; and

- organizational assistance ranging from advising on city council goal setting, management systems, and quality circles to serving on statewide government committees that deal with major concerns of state and local governments.

**Video Center**

Director: Daniel G. Lind
Web site: http://camera.video.uiowa.edu

The University Video Center provides high-quality video services and facilities, including those necessary to sustain and promote research activities. It also coordinates video equipment purchase and inventory and promotes efficient University support of campus video. To this end, the center has the personnel and facility resources to help units purchase equipment and supplies and carry out production and postproduction activities. The center also provides video system design and maintains guidelines for equipment standardization.
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. The Board consists of nine members.

President: Owen J. Newlin, Des Moines
Lisa E. Ahrens, Ames
David J. Fisher, Des Moines
Clarkson L. Kelly Jr., Charles City
Ellengray G. Kennedy, Bancroft
Roger L. Lande, Muscatine
David G. Nell, La Porte City
Beverly A. Smith, Waterloo
Deborah A. Turner, Mason City
Executive secretary: Frank J. Stork

Central Administration

Provost: Jon Whitmore
Vice president for research: David J. Skorton
Interim vice president for university relations: David J. Skorton
Vice president for statewide health services: John W. Colloton
Vice president for student services and dean of students: Phillip E. Jones
Vice president for finance and university services: Douglas K. True
General counsel: Mark E. Schantz

Office of the Provost

Provost: Jon Whitmore
Interim vice provost: Leslie B. Simms
Associate provost for diversity and director, Opportunity at Iowa: Joe D. Coulter
Associate provost for faculty: Lee Anna Clark
Associate provost for graduate education: Leslie B. Sims

College of Education
Dean: Sandra B. Damico

College of Engineering
Dean: Anthony L. Hines

Graduate College
Interim dean: John C. Keller

College of Law
Dean: N. William Hines

College of Liberal Arts
Dean: Linda Maxson

College of Medicine
Dean: Robert P. Kelch

College of Nursing
Dean: Melanie C. Dreher

College of Pharmacy
Dean: Jordan L. Cohen

College of Public Health
Dean: James A. Merchant

Division of Continuing Education
Dean:

Libraries
University librarian: Nancy L. Baker

Museum of Art
Director: Howard C. Collinson

International Programs
Dean: Steven L. Hoch
Summer Session
Director: Douglas J. Lee
Admissions
Director: Michael Barron

Center for Teaching
Director: Thomas R. Rocklin

Student Financial Aid
Director: Mark S. Warner

Academic Advising Center
Interim director: Pat Folsom

University Examination and Evaluation Services
Director: Joyce E. Moore

Office of the Registrar
University registrar: Jerald W. Dallam

Research

Vice president: David J. Skorton
Associate vice president: William F. Decker
Associate vice president and special assistant to the president for governmental relations: Derek H Willard

Associate counsel: Grainne P. Martin

Animal Care Unit
University veterinarian and director: Paul S. Cooper

Division of Sponsored Programs
Assistant vice president and director: Brian Harvey

Health Protection Office
Director: James C. Walker

Hygienic Laboratory
Director: Mary J.R. Gilekrist

Information Technology Services
Chief information officer and director: David Dobkins

Oakdale Research Campus
Director: W. Bruce Wheaton

Obermann Center for Advanced Studies
Director: Jay M. Semel

Office of the State Archaeologist
Director: William Green

Public Policy Center
Director: David J. Forkenbrock

Research Marketing and Corporate Relations
Director: Usha R. Balakrishnan

Research Services Administration
Special assistant to the vice president and director: David L. Wynes

University of Iowa Press
Director: Holly Carver

Women in Science and Engineering
Director: Christine Peterson Brus

Student Services

Vice president for student services and dean of students: Phillip E. Jones

Career Development Services
Director: Jane Schildroth

University Counseling Service
Director: Gerald L. Stone

Student Disability Services
Director: Susan M. Vess

Hancher Auditorium
Director: Wallace Chappell

Residence Services
Director: Sheila K. Vedder

University Life Centers
Director: David L. Grady

Women’s Resource and Action Center
Director: Monique DiCarlo

Research Services

Vice president: David J. Skorton
Associate vice president: William F. Decker

Associate vice president and special assistant to the president for governmental relations: Derek H Willard

Associate counsel: Grainne P. Martin

Animal Care Unit
University veterinarian and director: Paul S. Cooper

Division of Sponsored Programs
Assistant vice president and director: Brian Harvey

Finance and University Services

Vice president and treasurer: Douglas K. True

Associate vice president and director, Facilities Services Group: John Amend

Associate vice president, Finance and University Services, and director, Human Resources: Robert Foldesi
Administrative Officers

Assistant vice president, Finance and University Services, and director, Business Services:
Mary Jane Beach

University business manager:
Michael J. Finnegan

University controller: Terry L. Johnson

Director, financial management and budget, and university secretary: Douglas M. Young

Senior associate counsel: Andrew M. Ives

Public Safety
Director: Charles Green

Recreational Services
Director: Harry R. Ostrander

University Relations

Interim vice president: David J. Skorton

Alumni Association
Director: Vince C. Nelson

Athletic Training Services
Director: Edward T. Crowley

Health Science Relations
Interim director: Steve Maravetz

Intercollegiate Athletics for Men
Director: Robert A. Bowlsby

Intercollegiate Athletics for Women
Director: Christine H.B. Grant

Old Capitol
Director: Ann E. Smothers

Radio Stations WSUI-KSUI
Director: John O. Monick

University Communications and Outreach
Director: Steve Parrott

University Health Services

Regional Child Health Specialty Clinics
Director: Jeffrey G. Lobas

Student Health Service
Director: Mary L. Khowassah

University of Iowa Hospitals and Clinics
Director and CEO: R. Edward Howell

University Hospital School
Director: Don C. Van Dyke

General University

Affirmative Action Affairs
Director: Susan L. Mask

University of Iowa Foundation
President: Michael J. New

University ombudspersons:
Bernard A. Sorofman, Maile Sagen
Academic Personnel

The following persons held University of Iowa faculty appointments with the rank of instructor, assistant professor, associate professor, or professor May 1, 2000. In this listing, the year of first appointment follows the departmental identification, and the year of present appointment is given in parentheses.


Adjunct


Aguilar, Agastin, B.S. Emory 1978, M.D. Universidad Autonoma de Guadalajara 1982; assistant professor (clinical), Surgery, 1985


Amile, Lynn Jeanette, B.S. Wisconsin-Stout 1983; adjunct instructor, Art and Art History, 1997

Amos, James John, B.S. Iowa State 1985, M.D. Iowa 1992; assistant professor of Surgery, Psychology, 1993


Anderson, Brett Allen, B.S. Iowa 1991; adjunct instructor, Pharmacy, 1995


Banker, Gilbert S., B.S. Union-New York 1953, M.S. Purdue '55, Ph.D. 1957; professor emeritus, Pharmacy, 1992


Bednarek, Charles F., B.S. Wisconsin 1960, Ph.D. 1969; associate professor, Internal Medicine, 1974


Baylis, Patrick L., B.S. Drake 1982; clinical assistant professor, Communication Studies, 1994

Beatty, Walter, B.A. Wheaton 1971, M.D. Illinois 1977; clinical assistant professor, Internal Medicine, 1984


Beck, Ronald Dean, B.A. Augustana 1974, M.A. 1977; clinical assistant professor, Family Medicine, 1999


Beck, Timothy Dale, B.S. Iowa 1979, Ph.D. 1997; adjunct instructor, Pharmacy, 1998


Bedell, David A., B.A. Colorado College 1975; M.D. Washington 1832; assistant professor, Family Medicine, 1995

Bell, George N., B.A. DePauw 1944, M.D. Cincinnati 1946; professor emeritus, Internal Medicine, 1952 (1992)


Bell, Ellyn Harris, M.A. Iowa 1990; adjunct instructor, Nursing, 2000


Bennett, Chris Burdett, adjunct instructor, Art and Art History, 1998

Dick, Robert William, B.S. Drake 1965, M.S. Iowa 1972; adjunct associate professor, Pharmacy, 1987


Dillon, Joseph S., M.D., B.C.H. B.A.O. University College Dublin-Ireland 1961; assistant professor, Internal Medicine, 1996


Dionne, Richard Wayne, M.D. Montreal 1994; assistant professor (clinical), Surgery, 2000


Dippel, Peter, Ph.D. 1987; adjunct professor, Art and Art History, 1988 (1986)


Evans, Karen Kay Sladek, B.S.N. Iowa 1974; M.A. 1979; associate professor, Management and Mass Communication, 1979


Farrell, William J., B.S. Ohio 1941, M.D. 1945; professor, Surgery, 1944 (1955)


Finnegan, Eileen Margaret, B.A. Iowa 1992; associate professor, Pathology, 1976 (1987)


Fotini, Maria, B.A. Michigan State 1982; M.A. Michigan 1985; assistant professor (clinical), Speech Pathology and Audiology, 1998


Field, F. Jeffrey, B.S. Wisconsin 1970; M.D. 1974; professor, Internal Medicine, 1880 (1991)


Fiedler, Janet Louise, M.A. 1989; assistant professor, Speech Pathology and Audiology, 1999

Fink, Linda Reed, M.S. Iowa 1997; assistant professor, Nursing, 1980


Fitzpatrick, Hugh, B.S. Iowa 1948; assistant instructor, Pharmacy, 1950.


Fox, Margaret G., B.S. Minnesota 1933, M.A. Iowa 1939; associate professor, English, 1949 (2000).


Fox, Margaret G., B.S. Minnesota 1933, M.A. Iowa 1939; associate professor, English, 1949 (2000).


Haigh, William Alan, B.A. 1968; associate professor, Pharmacy 1997


Hakes, Thomas E., B.A. Central College 1974, M.D. Iowa 1978; clinical instructor, Internal Medicine, 1990


Hall, Margaret S., B.A. Smith 1938, M.F.A. Iowa 1941; M.A. 1951; associate professor emeritus, Theatre Arts 1951 (1978)


Gazダウン, Victoria Marie, M.S.N. Clarkson 1978; adjunct instructor, Nursing, 2000

Haas, Thomas J. B.S. Iowa 1979; adjunct instructor, Pharmacy 1997

Habak, Philip, M.B.B.Ch. Ain-Shams-Egypt 1963; clinical assistant professor, Internal Medicine, 1973 (1977)


Hake, Joel Edward, B.A. Simpson 1979, M.D. Iowa 1983; clinical assistant professor, Internal Medicine, 1995

Haefer, John, B.A. Iowa 1935, M.A. 1939, Ph.D. 1941; professor emeritus, Curriculum and Instruction, 1941 (1982)


Hagerty, Peter, A.B. Oberlin 1984; M.P.H. Indiana 1993; Ph.D. 2004; assistant professor, Biomedical Engineering, 1998


Hansen, David H., B.S. Log State 1974, M.D. Iowa 1978; clinical assistant professor, Family Medicine, 1990


Hanson, Randall Roe, B.S. Iowa State 1965; M.D. Iowa 1969; clinical assistant professor, Internal Medicine, 1974 (1977)


Harrington, Jeanette, B.S. Minnesota-Duluth 1975, M.D. Minnesota-Minneapolis 1983; assistant professor (clinical), Anesthesiology, 1997


Hartley, Patrick Gerard, M.B. B.Ch. B.A.O. University College Dublin-Ireland 1985; assistant professor (clinical), Internal Medicine, 1995


Hanna, Kelly, B.S.N. Briar Cliff 1985, M.S. South Dakota 1986; adjunct instructor, Nursing 1989


Hagen, John, B.A. Iowa 1935, M.A. 1939, Ph.D. 1941; professor emeritus, Curriculum and Instruction, 1941 (1982)
Reid, Carole Atx, B.S.N. St. Olaf 1967, M.S.N. Minnesota 1986; adjunct assistant professor, Nursing, 1999
Reind, Mindi Jo, Pharm.D. Iowa 1997; adjunct assistant professor, Pharmacy, 2000
Reinhart, Rebecca Maureen, B.S.P.H. Iowa 1993; adjunct instructor, Psychology, 1993
Reinholt, Danielle Renee Bedard, B.S.N. Iowa 1980; adjunct instructor, Nursing, 1998
Reis, Diane Ray Buresh, B.A. Iowa 1981; adjunct instructor, Pharmacy, 1997
Rembert, Julia Kleinschmitt, B.J. Nebraska 1990, M.S.W. Iowa 1997; assistant professor (clinical), Social Work, 1990
Rettzell, David Paul, B.S. Iowa 1979; adjunct instructor, Pharmacy, 2000
Rezaei, Reza, M.D. Shiraz Medical School-Iran 1971; associate professor emeritus, Radiology, 1984 (1991)
Rhodes, Richard S., B.S. Michigan 1969, Ph.D. Iowa 1982; adjunct assistant professor, Geoscience, 1993
Richardson, Robert L., D.M.D. Louisville 1944, M.S. Iowa 1953; associate professor emeritus, Microbiology, 1951 (1984)
Rickerts, Sharon Marie, Pharm.D. Iowa 1997; adjunct assistant professor, Pharmacy, 2000
Academic Personnel


Smith, Marianne, B.S.N. Iowa 1978, M.S., Colorado 1983; adjunct instructor, Nursing, 1987

Smith, Max, M.D., Iowa 1946; adjunct professor, Prosthodontics, 1970s

Smith, Melinda A., B.S. Iowa 1984, M.D. 1988; clinical assistant professor, Internal Medicine, 2000


Smith, Trisha Ann, Pharm.D. Iowa 1998; adjunct assistant professor, Pharmacy, 2000


Snyder, Peter M., B.A. Luther 1984, M.D. Iowa 1989; associate professor, Internal Medicine, 1996 (2000)


Stamler, Frederic W., B.A. Iowa 1939, M.D. 1943; professor emeritus, Pathology, 1947 (1983)


Starnes, Mark A., B.S. Washington, Ph.D. California-San Diego 1992; assistant professor, Physiology and Biophysics, 1997


Stanford, Tracey Lea Durr, B.S. Iowa 1992; adjunct instructor, Pharmacy, 2000


Stapel, Lawrence, B.S. New Hampshire 1949, M.S. 1950, M.D. Iowa 1956; clinical associate professor emeritus, Internal Medicine, 1976


Starr, Mary J., B.S.B.Ph. Iowa 1980, adjunct instructor, Pharmacy, 1991


Staab, Debra J., B.S. Miami 1975, Ph.D. Cornell 1985, M.D. Rush 1993; assistant professor (clinical), Anesthesiology, 1999
Microbiology, 1996
Tannous, Raymond, M.D. Faculty of Medicine and Pharmacy-France 1977; associate professor, Pediatrics, 1977 (1982)
Tansey, Janet Forl., M.D. Loyola 1995; assistant professor (clinical), Psychiatry, 1999
Thomsen, David J., B.S. Iowa 1991; adjunct instructor, Pharmacology, 1998
Thorsen, Joseph D., B.S. Iowa State 1965, M.D. Iowa 1973; clinical assistant professor, Internal Medicine, 1978
Thomson, K., A., B.S. Iowa State 1982; adjunct instructor, Preventive and Community Dentistry 1990
Thigges, Cathy Curry, D.D.S. Iowa 1993; adjunct instructor, Preventive and Community Dentistry, 1997
Timmerman, Timothy Gerard, B.S. Loras 1987, M.D. Iowa 1992; assistant professor (clinical), Pathology, 1998
Tippet, Carol Sue, B.S.N. Iowa 1979, M.P.H. North Carolina-Chapel Hill 1983; adjunct instructor, Nursing, 1985
Tippin, Jon Michael, B.S. George Fox 1975, M.D. Oregon 1979; assistant professor (clinical), Neurology, 1999
Tobacman, Joanne Kramer, A.B. Radcliffe 1972, M.D. Case Western Reserve 1976; assistant professor (clinical), Internal Medicine, 1993
Tobacman, Larry A., B.S. Cincinnati, B.S. North Dakota, M.S. Minnesota, Ph.D. Minnesota, Ph.D. (Clinical), Nursing, 1998
Thompson, B. Jon Daniel, B.S. Iowa 1998; adjunct instructor, Pharmacology, 2000
Thomas, William L., 578 Academic Personnel


Trygstad, Lark J., A.A. North Iowa Area Community College 1977; instructor, Preventive and Community Dentistry, 2000

Trant, Christin Jo, B.S.N. Iowa 1988, M.S.N. 1997; adjunct instructor, Nursing, 1998


Vanci, Carol, R.D.H. Iowa 1962; adjunct assistant professor, Preventive and Community Dentistry, 1986

Vanbramer, Edward L., B.A. South Dakota 1962, B.S.M. 1963, M.D. Iowa 1965; clinical instructor, Internal Medicine, 1998


Zoeller, Guenter, M.A. Bonn-Germany 1979, Dr. phil. 1982; professor, Philosophy 1986 (1986)
Zurbriggen, Thomas L., B.S. Iowa State 1974, M.D. Iowa 1978; clinical instructor, Internal Medicine, 1988
The following is extracted from the Board of Regents section of the Iowa Administrative Code as of May 17, 2000.

Admission Rules Common to the Three State Universities

681.1.1(262) Admission of undergraduate students directly from high school

Students desiring admission must meet the requirements in this section and also any special requirements for the curriculum, school, or college of their choice.

Applicants must submit a formal application for admission, together with a $20 application fee for U.S. citizens or permanent residents for applicants to Iowa State University and the University of Northern Iowa or a $30 application fee for applicants to the University of Iowa, and a $50 application fee for foreign students, and have their secondary school provide a transcript of their academic record, including credits and grades, rank in class, and certification of graduation. Applicants must also submit scores from the American College Test (ACT) or the Scholastic Aptitude Test (SAT), or the equivalent, as determined by each university. The Test of English as a Foreign Language (TOEFL) is required of foreign students whose first language is not English. Applicants may be required to submit additional information or data to support their applications.

1.1(1) Graduates of approved Iowa high schools who have the subject matter background as recommended by each university and who rank in the upper one-half of their graduating class will be admitted. Applicants who are not in the upper one-half of their graduating class may, after a review of their academic and test records, and at the discretion of the admissions officers:

- a. Be admitted unconditionally,
- b. Be admitted conditionally,
- c. Be required to enroll for a tryout period during a preceding summer session, or
- d. Be denied admission.

1.1(2) Graduates of accredited high schools in other states may be held to higher academic standards, but must meet at least the same requirements as graduates of Iowa high schools. The options for conditional admission or summer tryout enrollment may not necessarily be offered to these students.

1.1(3) Applicants who are graduates of nonapproved high schools will be considered for admission in a manner similar to applicants from approved high schools, but additional emphasis will be given to scores obtained on standardized examinations.

1.1(4) Applicants who are not high school graduates, but whose classes have graduated, may be considered for admission. They will be required to submit all academic data to the extent that it exists and achieve scores on standardized examinations which will demonstrate that they are adequately prepared for academic study.

Students with superior academic records may be admitted, on an individual basis, for part-time university study while enrolled in high school or during the summers prior to high school graduation.

In rare situations, exceptional students may be admitted as full-time students to a regent university before completing high school. Early admission to a regent university is provided to serve persons whose academic achievement and personal and intellectual maturity clearly suggest readiness for collegiate level study. Each university will specify requirements and conditions for early admission.

This rule is intended to implement Iowa Code section 262.9(3).

681.1.2(262) Admission of undergraduate students by transfer from other colleges

Students desiring admission must meet the requirements in this section and also any special requirements for the curriculum, school, or college of their choice.

Applicants must submit a formal application for admission, together with a $20 application fee for U.S. citizens or permanent residents for applicants to Iowa State University and the University of Northern Iowa or a $30 application fee for applicants to the University of Iowa and a $50 application fee for foreign students, and request that each college they have attended send an official transcript of record to the admissions office. High school academic records and standardized test results may also be required. The Test of English as a Foreign Language (TOEFL) is required of foreign students whose first language is not English.

1.2(1) Transfer applicants with a minimum of 24 semester hours of graded credit from regionally accredited colleges or universities, who have achieved for all college work previously attempted the grade point required by each university for specific programs, will be admitted. Higher academic standards may be required of students who are not residents of Iowa.

1.2(2) Transfer applicants from colleges and universities not regionally accredited will be considered for admission on an individual basis taking into account all available academic information.

This rule is intended to implement Iowa Code section 262.9(3).

681.1.3(262) Transfer credit practices

The regent universities endorse the Joint Statement on Transfer and Award of Academic Credit approved in 1978 by the American Council on Education (ACE), the American Association of Collegiate Registrars and Admissions Officers (AACRAO), and the Council on Postsecondary Accreditation (COPA). The current issue of Transfer Credit Practices of Selected Educational Institutions, published by the American Association of Collegiate Registrars and Admissions Officers (AACRAO), and publications of the Council on Postsecondary Accreditation (COPA) are examples of references used by the universities in determining transfer credit. The acceptance and use of transfer credit is subject to limitations in accordance with the educational policies operative at each university.

1.3(1) Students from regionally accredited colleges and universities

Credit earned at regionally accredited colleges and universities is acceptable for transfer except that credit in courses determined by the receiving university to be of a remedial, vocational, or technical nature, or credit in courses or programs in which the institution granting the credit is not directly involved, may not be accepted, or may be accepted to a limited extent.

Of the course work earned at a two-year college, students may apply up to one-half but no more than 65 hours of the credits required for a bachelor’s degree toward that degree at a
1.3(2) Students from colleges and universities which have candidate status

Credit earned at colleges and universities which have become candidates for accreditation by a regional association is acceptable for transfer in a manner similar to that from regionally accredited colleges and universities if the credit is applicable to the bachelor’s degree at the receiving university.

Credit earned at the junior and senior classification from an accredited two-year college which has received approval by a regional accrediting association for change to a four-year college may be accepted by a regent university.

1.3(3) Students from colleges and universities not regionally accredited

When students are admitted from colleges and universities not regionally accredited, they may validate portions or all of their transfer credit by satisfactory academic study in residence, or by examination. Each university will specify the amount of the transfer credit and the terms of the validation process at the time of admission.

In determining the acceptability of transfer credit from private colleges in Iowa which do not have regional accreditation, the regent committee on educational relations, upon request from the institutions, evaluates the nature and standards of the academic program, faculty, student records, library, and laboratories.

In determining the acceptability of transfer credit from colleges in states other than Iowa which are not regionally accredited, acceptance practices indicated in the current issue of Transfer Credit Practices of Selected Educational Institutions will be used as a guide. For institutions not listed in the publication, guidance is requested from the designated reporting institution of the appropriate state.

1.3(4) Students from foreign colleges and universities

Transfer credit from foreign educational institutions may be granted after a determination of the type of institution involved and after an evaluation of the content, level, and comparability of the study to courses and programs at the receiving university. Credit may be granted in specific courses, but is frequently assigned to general areas of study. Extensive use is made of professional journals and references which describe the education systems and programs of individual countries.

This rule is intended to implement Iowa Code section 262.9(3).

Residence

681-1.4(262) Classification of residents and nonresidents for admission, tuition, and fee purposes

1.4(1) General

a. A person enrolling at one of the three state universities shall be classified as a resident or nonresident for admission, tuition, and fee purposes by the registrar or someone designated by the registrar. The decision shall be based upon information furnished by the student and other relevant information.

b. In determining resident or nonresident classification, the issue is essentially one of why the person is in the state of Iowa. If the person is in the state primarily for educational purposes, that person will be considered a nonresident. For example, it may be possible that an individual could qualify as a resident of Iowa for such purposes as voting, or holding an Iowa driver’s license, and not meet the residency requirements as established by the Board of Regents for admission, tuition, and fee purposes.

c. The registrar, or designated person, is authorized to require written documents, affidavits, verifications, or other evidence deemed necessary to determine why a student is in Iowa. The burden of establishing that a student is in Iowa for other than educational purposes is upon the student.

A student may be required to file any or all of the following:

(1) A statement from the student describing employment and expected sources of support;
(2) A statement from the student’s employer;
(3) A statement from the student’s parents verifying nonsupport and the fact that the student was not listed as a dependent on tax returns for the past year and will not be so listed in future years;
(4) Supporting statements from persons who might be familiar with the family situation;
(5) Iowa state income tax return.

d. Change of classification from nonresident to resident will not be made retroactive beyond the term in which application for resident classification is made.

e. A student who gives incorrect or misleading information to evade payment of nonresident fees shall be subject to serious disciplinary action and must also pay the nonresident fees for each term previously attended.

f. Review Committee. These regulations shall be administered by the registrar or someone designated by the registrar. The decision of the registrar or designated person may be appealed to a university review committee. The findings of the review committee may be appealed to the state board of regents.

1.4(2) Guidelines

The following guidelines are used in determining the resident classification of a student for admission, tuition, and fee purposes:

a. A financially dependent student whose parents move from Iowa after the student is enrolled remains a resident provided the student maintains continuous enrollment. A financially dependent student whose parents move from Iowa during the senior year of high school will be considered a resident provided the student has not established domicile in another state.

b. In deciding why a person is in the state of Iowa, the person’s domicile will be considered. A person who comes to Iowa from another state and enrolls in any institution of postsecondary education for a full program or substantially a full program shall be presumed to have come to Iowa primarily for educational reasons rather than to establish a domicile in Iowa.

c. A student who was a former resident of Iowa may continue to be considered a resident provided absence from the state was for a period of less than 12 months and provided domicile is reestablished. If the absence from the state is for a period exceeding 12 months, a student may be considered a resident if evidence can be presented showing that the student has long-term ties to Iowa and reestablishes an Iowa domicile.

A person or the dependent of a person whose domicile is permanently established in Iowa, who has been classified as a resident for admission, tuition, and fee purposes, may continue to be classified as a resident so long as domicile is maintained, even though circumstances may require extended absence of the person from the state. It is required that a person who claims Iowa domicile while living in another state or country will provide proof of the continual Iowa domicile as evidence that the person:

(1) Has not acquired a domicile in another state;
(2) Has maintained a continuous voting record in Iowa, and
(3) Has filed regular Iowa resident income tax returns during absence from the state.

d. A student who moves to Iowa may be eligible for resident classification at the next registration following 12 consecutive months in the state provided the student is not enrolled as more than a half-time student (6 credits for an undergraduate or professional student, 5 credits for a graduate student) in any academic year term, is not enrolled for more than 4 credits in a summer term for any classification, and provides sufficient evidence of the establishment of an Iowa domicile.

e. A student who has been a continuous student and whose parents move to Iowa may become a resident at the beginning of the next term provided the student is dependent upon the parents for a majority of financial assistance.

f. A person who is moved into the state as the result of military or civil orders from the government for other than educational purposes, or the dependent of such a person, is entitled to resident status. However, if the arrival of the person under orders is subsequent to the beginning of the term in which the student is first enrolled, nonresident fees will be charged in all cases until the beginning of the next term in which the student is enrolled.

Legislation, effective July 1, 1977, requires that military personnel who claim residency in Iowa...
(home of record) will be required to file Iowa resident income tax returns.

g. A person who has been certified as a refugee or granted asylum by the appropriate agency of the United States who enrolls as a student at a university governed by the Iowa state board of regents may be accorded immediate resident status for admission, tuition, and fee purposes when not enrolled in school.

(8) Ownership of property in Iowa, or the payment of Iowa taxes.

This rule is intended to implement Iowa Code section 262.9(3).

681-1.5(262) Registration and transcripts-general

A person may not be permitted to register for a course or courses at a state board of regents institution until any delinquent accounts owed by the person to an institution or any affiliated organization for which an institution acts as fiscal agent have been paid.

A state board of regents institution may withhold official transcripts of the academic record of a person until any delinquent accounts owed by the person to an institution or any affiliated organization for which an institution acts as fiscal agent have been paid.

This rule is intended to implement Iowa Code section 262.9.

Supplemental Specific Rules to The University of Iowa

681-2.1(262) Formal application for admission

All applicants for admission to any college of the University of Iowa must submit a formal application for admission with the required official transcripts and other supporting material as required to the director of admissions. Students may not be registered until they have been issued an admission statement by the director of admissions.

681-2.3(262) College of Business Administration

2.3(1) Application for admission

Applications for admission to the college of business administration should be submitted to the director of admissions. Applicants are urged to apply as early as possible, since this will give the admissions committee more time to devote to each application. Closing dates for receiving applications will be announced well in advance of the opening date of any session.

Applications for admission to dentistry are encouraged to complete a program leading to a baccalaureate degree before entering dentistry. Applicants should consider a combined program of liberal arts and dentistry which would qualify them for a baccalaureate degree upon the completion of the freshman year in dentistry. Preference will be given to students who have the baccalaureate degree or who have completed the requirements for the degree in a combined program.

Fulfillment of the specific requirements for admission listed does not ensure admission to the college of dentistry. From the applicants meeting the minimum requirements, the admissions committee will select the applicants who, in their judgment, appear to be best qualified.

2.3(2) Requirements for admission

For admission to the college of business administration an applicant must have:

a. Completed specific course work as prescribed by the faculty of the college.

b. Attained satisfactory scores on the university’s required admission examinations.

c. Maintained a satisfactory grade-point average on all courses undertaken, and on all courses undertaken at the University of Iowa, and on all courses undertaken in business and economics.

Applications from students who have minor deficiencies in meeting grade-point requirements specified above will be reviewed by the admissions committee of the college, and upon favorable recommendation of the committee, such students may be granted conditional or probationary admissions.

Fulfillment of the minimal requirements listed above, however, does not assure admission to the college of business administration. From those applicants who meet the minimum requirements, the admissions committee will select the applicants who, in their judgment, appear to be best qualified.

681-2.4(262) College of Dentistry

2.4(1) Application for admission

Address all inquiries regarding admission to the Director of Admissions, University of Iowa. Applicants are urged to apply as early as possible, since this will give the admissions committee more time to devote to each application. Closing dates for receiving applications will be announced well in advance of the opening date of any session.

Applications for admission to dentistry are encouraged to complete a program leading to a baccalaureate degree before entering dentistry. Applicants should consider a combined program of liberal arts and dentistry which would qualify them for a baccalaureate degree upon the completion of the freshman year in dentistry. Preference will be given to students who have the baccalaureate degree or who have completed the requirements for the degree in a combined program.

Fulfillment of the specific requirements for admission listed does not ensure admission to the college of dentistry. From the applicants meeting the minimum requirements, the admissions committee will select the applicants who, in their judgment, appear to be best qualified for the study and practice of dentistry.

Each applicant must place on file in the office of the director of admissions the completed application form and an official transcript from each college attended. The college work outlined below will suffice to meet the minimal academic requirements for admission to the college of dentistry.

The college curriculum must include at least three academic years of accredited work comprising not less than 96 semester hours and including specific required science courses as prescribed by the faculty of the college. Electives should be chosen so as to give the applicant a well-rounded educational background.

In order to meet minimum scholarship requirements, the applicant should attain a cumulative grade-point average of 2.50. Since the quality of course work in predental science is basic to success in dentistry, special consideration to such college work is given by the admissions committee. The grade-point average is based upon the University of Iowa’s marking system in which a grade of A is equivalent to four points. Other marking systems will be evaluated by the office of admissions and the committee on admissions of the college of dentistry.
Applicants who have completed the requirements for admission to dentistry five or more years prior to seeking admission to this college of dentistry will be considered by the admissions committee only under exceptional conditions.

Preference will be given to applicants who are residents of Iowa, but consideration will also be given to outstanding nonresidents.

Personal interviews will be required of applicants for admission to the college of dentistry. Applicants will be notified when they should appear for the required interviews with members of the admissions committee.

All applicants must complete the dental aptitude tests sponsored by the council on dental education of the American Dental Association. Tests are given three times annually. The University of Iowa is a testing center.

To facilitate early selection, applicants for admission to the college of dentistry are urged to complete the aptitude test no later than October to enable the admissions committee to begin its selection in December.

Accepted applicants are required to make the required deposit within two weeks after notification of favorable action on their applications. This deposit is not refundable but is credited toward the first fee payment. The applicant who fails to make the deposit within the time specified forfeits a place in the entering class.

Applicants accepted for admission are required to submit a satisfactory physical examination report to the university student health service within two weeks following notification of acceptance.

All applicants must also complete, through student health service, an X-ray film of the chest and a successful vaccination against smallpox prior to registration.

2.4(2) Advanced standing
Applications for admission with advanced standing are handled as individual cases.

681-2.5(262) College of Engineering
Address all inquiries regarding admission to the Director of Admissions, University of Iowa, Iowa City, Iowa.

Closing dates for receiving applications will be announced well in advance of the opening date of any session.

2.5(1) Admission of freshman students
The applicant must submit a formal application for admission and must have the secondary school provide a certificate of high school credits, including a complete statement of the applicant’s high school record, rank in class, scores on standardized tests, and certification of high school graduation. The applicant must also submit any other evidence such as a certificate of health that may be required by this university.

Each applicant must have attained satisfactory scores on the university’s required admission examinations, maintained a satisfactory cumulative grade-point average, achieved satisfactory rank in graduating class, and successfully completed all prerequisite courses. The university with the approval of the state board of regents shall establish and periodically review specific minimum requirements for admission to the college of engineering. Among the items to be so determined are test score, grade-point average, class rank and prerequisite courses. These specific determinations will be published in the university catalog.

From applicants who do not meet minimum admission requirements, the director of admissions may after a review of the applicant’s record: (a) Admit unconditionally, (b) admit on probation, (c) require enrollment for a tryout period during a preceding summer session, or (d) deny admission.

2.5(2) Admission of undergraduate students by transfer
The applicant must submit a formal application and official transcript of college work. Each applicant should have:

a. Maintained satisfactory progress in mathematics.

b. Attained satisfactory scores on the university’s required admission examinations.

c. Maintained a satisfactory cumulative grade-point average on all college work undertaken.

From applicants who do not meet recommended requirements, the director of admissions will review individual records and may offer probationary admission.

681-2.6(262) Graduate College
Graduates of any college or university accredited by regional accrediting associations may if the academic record is satisfactory be admitted to the graduate college. Admission to the graduate college is not the equivalent of acceptance as a candidate for an advanced degree. Such acceptance is given usually after the completion in residence of work at the university and upon recommendation of the major department and approval by the dean of the graduate college that the applicant should be accepted as a degree candidate is determined upon the merits of each individual case.

A student who is within six semester hours of having satisfied all the requirements for the bachelor’s degree at the University of Iowa may be given a tentative admission to the graduate college.

681-2.7(262) College of Law
2.7(1) Application for admission
Address all inquiries concerning admission to the Director of Admissions, University of Iowa, Iowa City, Iowa. Beginning students may enter the college of law only in the summer session or the fall semester. Closing dates for receiving applications will be announced well in advance of the opening date of any session.

To be considered for admission, an applicant should have attained a cumulative grade-point average of at least 2.3 on all college work undertaken. The grade-point average is based upon the University of Iowa’s marking system in which a grade of A is equivalent to four points. Other marking systems will be evaluated by the office of admissions.

Applicants for admission must present a baccalaureate degree from an approved college or university prior to commencing work in the college of law.

Each applicant for admission must take the Law School Admission Test administered by the Educational Testing Service, Princeton, New Jersey, and have his score forwarded to the college of law. The test is given several times per year and may be taken at numerous locations in the United States and throughout the world. Applicants are urged to take the test in the fall or winter preceding the fall semester for which they are applying. Except upon a showing acceptable to it, the admissions committee will not consider applications from students who fail to take the test prior to the June 1 preceding the fall semester in which they wish to enter.

Fulfillment of the specific requirements for admission listed above does not ensure admission to the college of law. From the applicants meeting the minimum requirements, the admissions committee of the college of law will select those applicants who, in their judgment, appear to be best qualified for the study and practice of law. The law admissions committee may require personal interviews of applicants.

2.7(2) Admission with advanced standing
A transfer student may be eligible for admission if the student (a) has attended a school approved by the Association of American Law Schools; (b) is in good standing at the time of withdrawal [evidenced by a letter from the dean of the school from which transferring]; (c) meets the admission requirements for beginning students; and (d) has done substantially above average work in the law school student attended. Where an applicant has completed more than one year of law study, advanced standing will be permitted only in exceptional cases. Applicants for admission with advanced standing should comply with the procedures required for admission to the first-year class.

681-2.8(262) College of Medicine
2.8(1) Application for admission
Address all inquiries regarding admission to the Director of Admissions, University of Iowa.

Applicants are urged to apply as early as possible, since this will give the admissions committee more time to devote to each application. Closing dates for receiving applications will be announced well in advance of the opening date of any session.

Fulfillment of the specific requirements for admission listed below does not ensure admission to the college of medicine. From the applicants meeting the specific requirements, the admissions committee of the college of medicine will select those applicants who in their judgment appear to be best qualified for the study and practice of medicine.

Prior to entrance an applicant must:
a. Have received the baccalaureate degree; or
b. Have completed three years of a combined baccalaureate-medicine curriculum which qualifies the applicant to receive the baccalaureate degree on completion of the first year in medicine; or
c. Have completed three years of a baccalaureate program which includes the general graduation requirements of the college of liberal arts of the University of Iowa for the combined baccalaureate degree.

Each applicant must place on file in the office of the director of admissions the completed application form and an official transcript from each college attended.

The college work as outlined below will suffice to meet the minimal academic requirements for admission to the college of medicine.

Applicants who have completed the baccalaureate degree and required courses five or more years prior to seeking admission to this college of medicine will be considered by the admissions committee only under exceptional conditions.

The college curriculum must include at least three years (equivalent to 96 semester hours) including specific required science courses as prescribed by the faculty of the college.

Students planning to study medicine should bear in mind that other college work is required in addition to prerequisite sciences because it offers an opportunity to secure a well-rounded education, which is of special importance to those entering the medical profession. In the selection of applicants, preference will be given to those who give evidence of having obtained such a broad education.

To be considered for admission, an applicant must have attained a grade-point average of at least 2.5 for all college work undertaken. As the quality of work in premedical science is very basic to success in medicine, special attention will be given by the admissions committee to grades in science. The grade-point average is based on the University of Iowa’s marking system in which a grade of A is equivalent to four points. Other marking systems will be evaluated by the office of admissions and the committee on admissions of the college of medicine.

Preference will be given to applicants with high scholastic standing who are residents of Iowa, and consideration will also be given to outstanding nonresidents. Applicants for admission are required to take the medical college admissions test which is administered by the Association of American Medical Colleges. Applicants are required to complete this test in May or October of the year preceding that for which they are applying for admission. Students may make arrangements to apply for this examination through the university examination service, the University of Iowa.

Personal interviews will be required. Applicants will be contacted for the appointment for required interviews.

Applicants accepted for admission are required to submit a satisfactory physical examination report to the university student health service within two weeks following notification of acceptance.

All applicants must also complete, through student health service, an X-ray film of the chest and successful vaccination against smallpox prior to registration.

2.8(2) Admission to advanced standing
If their work preparatory to entering a college of medicine would have met entrance requirements of this college, students from approved medical colleges may be admitted to advanced standing according to the following conditions:

Only applicants of high scholastic standing will be considered.

They must present certificates showing that they have satisfactorily completed courses equivalent to those already pursued by the class they wish to enter.

The committee on admission to advanced standing will decide in each case whether examinations in the various subjects will be required.

Applications will be considered only upon receipt of a statement from the dean or registrar of the college from which the applicant comes, showing the actual amount of time the student has spent in the study of medicine, the courses taken, and the grades received, together with a statement of the work preparatory to entering the course in medicine.

No advanced standing will be granted to students from other than approved medical schools. Students may be granted subject credit upon recommendation of the head of the department concerned, for work taken in other than medical schools.

2.8(3) Unclassified students
Applicants for admission to the college of medicine who are not candidates for a degree but who desire to register for special subjects, will be admitted to any lecture or laboratory course only upon complying with all the regular requirements for admission to such course or by action of the faculty upon recommendation of the professor in charge of the course.

681-2.9(262) College of Nursing
Applications for admission to the college of nursing should be submitted to the Director of Admissions, The University of Iowa, Iowa City, Iowa. Applicants for admission to the undergraduate program in nursing must present a minimum of 30 semester hours completed in an accredited college. For admission to the college of nursing an applicant must have:

1. Completed specific course work as prescribed by the faculty of the college. The director of admissions will provide a list of the course work required.
2. Completed the American College Tests.
3. Performed satisfactorily on all courses undertaken.

Applications from students who have minor deficiencies in meeting grade-point requirements specified above will be reviewed by the admissions committee of the college, and, upon favorable recommendation of the committee, such students may be granted conditional or probationary admissions.

Fulfillment of the minimum requirements listed above, however, does not assure admission to the college of nursing. From those applicants who meet the minimum requirements, the admissions committee will select the applicants who, in their judgment, appear to be best qualified.

681-2.10(262) College of Pharmacy
2.10(1) General basis for admission
Fulfillment of the specific requirements for admission does not ensure admission to the college of pharmacy. From the applicants meeting the specific requirements, the admissions committee will select those applicants who in their judgment appear to be best qualified. Applicants for admission to pharmacy should have graduated from an approved high school or have an equivalent amount of training.

2.10(2) College work
The college work as outlined below will meet the minimum academic requirements for admission to the college of pharmacy. The minimum should include 32 semester hours of college level work exclusive of credit in military and air science and physical education. The 32 semester hours must include:

Communication skills. Applicants must have demonstrated satisfactory achievement in communication skills according to the requirements of the college of liberal arts at the state University of Iowa. Applicants from other institutions may meet this requirement by presenting six semester hours of credit in English composition and rhetoric and two semester hours of credit in speech or an eight-semester-hour year course in communication skills.

Inorganic chemistry and qualitative analysis, eight semester hours.

College mathematics, eight semester hours.

Physics or zoology, eight semester hours.

Students from other institutions may substitute a comparable eight-semester-hour course in biology in lieu of zoology.

Military or air science (if available), zero to two semester hours.

Students who present minor deficiencies in meeting the above requirements may be admitted to the college of pharmacy upon the recommendation of the dean of admissions and the college of pharmacy.

2.10(3) Scholarship and application deadline
To be considered for admission to the college of pharmacy, students must have earned a 2.00 or C average on all collegiate work undertaken. The minimum grade-point average of 2.00 is based on the state University of Iowa’s marking system in which the grade of A is equivalent to
Applications for admission and the required official transcripts should be filed before March 1 for the class to enter pharmacy in September.

2.10(4) Required tests
Applicants for admission are required to take the American College Testing Program test.

2.10(5) Current requirements
Applicants who have completed work in a college of pharmacy accredited by the American Council on Pharmaceutical Education may if their college academic average is acceptable be admitted and granted advanced standing toward the degree of bachelor of science in pharmacy.

681-2.11(262) College of liberal Ark
Applicants for admission to liberal arts must meet the rules that are common to the three state institutions in Iowa as listed in 1.1(262), 1.2(262) and 1.3(262).

681-2.12(262) College of Education
Students at the university desiring professional work in education are registered in the college of liberal arts or the graduate college. Requirements for permission to take teacher-training courses are listed in the university catalog.
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