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The University of Iowa General Catalog 1992-94

University of Iowa
The University of Iowa General Catalog 1992-94

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Copies of the General Catalog are available for examination in Iowa's high schools, offices of the county superintendents of schools, public libraries, junior 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 $3. 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 forms, and which courses are offered in a particular semester is printed in the Schedule of Courses, which is available before each term begins. The publication This is Iowa also includes information on admissions, fees, scholarships, student financial aid, housing, and student personnel services.

The University of Iowa does not discriminate in its educational programs and activities on the basis of race, national origin, color, religion, sex, age, or disability. The University also affirms its commitment to providing equal opportunity and equal access to University facilities without reference to affectional or association preference. For additional information on nondiscrimination policies, contact the University's Office of Affirmative Action, 515-337-4311, or Section 504 in the Office of Affirmative Action, telephone 515-337-4311, The University of Iowa, 202 Jesse Hall, Iowa City, Iowa 52242-1316.
University Calendar

**Fall Semester**
- **1992**
  - Classes begin: August 24
  - University holiday: September 7
  - Thanksgiving recess: November 25-29
  - University holidays: December 14-18
  - Final exams: December 18-19
  - Commencement ceremonies: December 24-25
- **1993**
  - Classes begin: August 23
  - University holiday: September 6
  - Thanksgiving recess: November 24-28
  - University holidays: December 15-17
  - Final exams: December 17-18
  - Commencement ceremonies: December 23-24

**Spring Semester**
- **1993**
  - University holidays: January 1
  - Martin Luther King Convocation: January 16
  - Foundation day: January 19
  - Spring vacation: March 22-26
  - Classes begin: May 7
  - Examination week: May 10-14
  - Commencement ceremonies: May 14-15
  - University holiday: May 31
- **1994**
  - University holidays: January 17
  - Martin Luther King Convocation: January 24
  - Foundation day: January 28
  - Spring vacation: March 21-25
  - Classes begin: May 6
  - Examination week: May 9-13
  - Commencement ceremonies: May 13-14
  - University holiday: May 30

**Summer Session**
- **1993**
  - Registration: June 14
  - Classes begin: June 15
  - University holiday: July 5
  - Classes end: August 6
  - Commencement ceremonies: August 20
  - Independent study units for law and graduate students
- **1994**
  - Registration: June 15
  - Classes begin: June 16
  - University holiday: July 4
  - Classes end: August 5
  - Commencement ceremonies: August 19
  - Independent study units for law and graduate students

**Campus Visits**
The best introduction to The University of Iowa is a visit to the campus. Come first to the John C. 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 to arrange for a campus visit: toll-free 1-800-553-4092, nationwide; direct dial 319-335-3847.
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The University of Iowa is a major national research university with a solid liberal arts foundation. Founded in 1847 as Iowa's first public institution of higher education, it has been internationally recognized for its excellence in the arts, sciences, and humanities. Iowa was the first U.S. public university to admit women and men 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 shown for advanced degrees. It established the first law school west of the Mississippi, broadened the world's first educational television programs, and developed and continues to hold prominence in educational testing.

The home of pioneering space research, Iowa has designed and built research instruments carried aboard many major U.S. space missions, including the Galileo spacecraft currently on a nine-year journey to Jupiter. Its research in hydraulic engineering is world renowned, as are its innovations in biochemistry, biomedical engineering, agricultural medicine, and pharmacology education.

The University has one of the most extensive research library systems in the country and operates the nation's largest university-owned teaching hospital.

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 undergraduates, international, interdisciplinary education and research, graduate, and professional study 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 ten colleges and is the college in which undergraduate students first enroll, including those who later transfer into one of the eight professional colleges.

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

The University of Iowa has a diverse and distinguished faculty, whose members bring outstanding backgrounds in research and education to their teaching assignments. Many have been recognized for their accomplishments as teachers and scholars with awards including: Ollie Gunnerson Fellowships, senior fellowships from the National Endowment for the Humanities, and Fulbright scholarships for teaching and study abroad. Three are Howard Hughes Medical Institute (HHMI) Investigators—one each in biochemistry, internal medicine, and physiology and neurology.

The University reaches out to all segments of society. It seeks students who high standards, as at the same time it serves a broad cross-section of students. Approximately 25,000 students enroll at Iowa during fall and spring semesters. Nearly 70 percent come from Iowa, 10 percent from adjoining states, and 15 percent from the remaining states. International students from 130 foreign countries make up 5.5 percent of the University's enrollment.

Wealth and Diversity of Programs, Services

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. The Museum of Art displays outstanding permanent collections, works by faculty and students, and traveling exhibits year-round, and the world-renowned Writers' Workshop and 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 serves more than 400,000 patients from Iowa and other states every year. Specialized care is provided by more than 1,200 physicians and dentists, 1,300 registered nurses, and 3,200 professional and support staff. Teams of faculty, clinical support specialists, and students study and learn in their care for patients. University Hospitals and Clinics keeps in close touch with community hospitals and health professionals throughout the state, continually sharing new knowledge with them.

In athletics, the Iowa Hawkeyes enjoy national recognition and recruiting top athletes in football, basketball, wrestling, field hockey, swimming, and gymnastics. A member of the Big Ten athletic conference, Iowa often tops national rankings for women and men for men.

The University's 1,900-acre campus includes more than 110 major buildings, most within walking distance from each other and all fully accessible to persons with disabilities.

Overlooking the Iowa River is Old Capitol, the central landmark of the campus. Built in Greek revival style during the early 1830s, Old Capitol served as the last capitol building for Iowa's territorial government until 1846, and then housed the legislature and government offices for the state of Iowa until 1857, when state government moved to Des Moines. Various University offices and departments were housed in the building until it was restored as a National Historic Landmark and opened to the public in 1976.

A major attraction and educational facility at the University in Iowa Hall, a 4,000-square-foot gallery in the Museum of Natural History in MacAlpine Hall that presents life-size 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.
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, with 40 departments and more than 200 departments and programs. It is closely linked with the School of Public Administration, Dentistry, Education, Engineering, Law, Medicine, Nursing, and Pharmacy, and with the Graduate College. All ten colleges are located on the Iowa City campus.

The University faculty includes some 1,600 full-time members, many of whom have established national and international reputations. Their effectiveness as teachers is enhanced by their involvement in scholarship and scientific research. Some faculty members from the University's professional colleges also teach undergraduate classes, including a number of interdepartmental courses in the College of Liberal Arts.

The University's undergraduate enrollment is about evenly divided between men and women. Approximately three fourths of the freshmen are women. Most students from the other 49 states and more than 90 foreign countries.

About 75 percent of the University's entering freshmen had a 3.0 average or above in high school. Approximately 91 percent ranked in the upper half of their high school classes and about 27 percent ranked in the upper tenth.

The University of Iowa offers a comprehensive program of student financial aid. More than 50 percent of the University's students have some form of enrollment; 49 percent have educational scholarships. Most University scholarships are awarded on the basis of academic achievement, financial need, and academic excellence, with a small number of grants awarded solely for academic merit.

Reducing a growing trend toward hiring lectures, 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 internships, part-time jobs, workshops, continuing education programs for professionals, Saturday evening classes offered on campus and credit courses taught on campus. In 1977-78, the University, in cooperation with Iowa's other two state universities, introduced a new Bachelor of Liberal Studies (B.L.S.) degree program designed for adults who wish 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 Science, Bachelor of Music, Bachelor of Fine Arts, Bachelor of Oriental Studies, Bachelor of Liberal Studies, Bachelor of Business Administration, Bachelor of Science in Engineering, Bachelor of Science in Pharmacy, Bachelor of Science in Nursing, Bachelor of Science in Medicine, Doctor of Dental Surgery, Just Bachelors of Comparative Law, Doctor of Medicine, Master of Arts, Master of Science, Master of Business Administration, Master of Fine Arts, Master of Social Work, Master of Physical Therapy, Master of Arts in Teaching, Education Specialist, Doctor of Musical Arts, Doctor of Pharmacy, and Doctor of Philosophy.

Accreditation and Associations

The University of Iowa has been accredited by the North Central Association of Colleges and Secondary Schools, the same association that accredits the University's organization in 1913. The University is a member of the Association of American Universities and is accredited by Indiana, Michigan State, Northwestern, Ohio State, Pennsylvania State, and Tufts universities and the Universities of Illinois, Indiana, Iowa, University of Illinois at Chicago, and Wabash in the Western Group (Big Ten). Conference. Along with the Big Ten universities, it is also associated with The University of Chicago in the Committee for Institutional Cooperation (CIC).

As shown below, various colleges and schools of the University are members of accrediting associations in their respective fields.

Colleges

Business Administration—American Assembly of Colleges Schools of Business
Education—Commission on Dental Accreditation
Law—American Bar Association; Association of American Law Schools
Medicine—Liaison Committee on Medical Education, representing the American Medical Association and Association of American Medical Colleges (AAMC)
Nursing—National League for Nursing, Iowa Board of Nursing
Pharmacy—American Council on Pharmaceutical Education

Schools

Journalism and Mass Communication—Accrediting Council on Education in Journalism and Mass Communication
Library and Information Science—American Library Association
Music—National Association of Schools of Music
Social Work—Council on Social Work Education

Departments and Programs

The undergraduate engineering programs of the Departments of Biomedical, Chemical, Mechanical, and Environmental, Electrical and Computer, Industrial, and Mechanical Engineering—Engineering Accreditation

Commission of the Accreditation Board for Engineering and Technology (ABET)

Chemistry—American Chemical Society

Geology Education—Council for Accreditation of Counseling and Related Educational Programs

Dental Hygiene—Commission on Dental Accreditation

American Dental Association

Dentistry—American Dental Association

Hospital and Health Administration—Accrediting Commission on Education for Health Service Administration

Leisure Studies—Council on Accreditation of the National Park and Recreation Association

Medical Technology—Commission on Allied Health Education and Accreditation of the American Medical Association; National Accrediting Agency for Clinical Laboratory Sciences

Nuclear Medicine Technology—Committee on Allied Health Education and Accreditation, and Council on Medical Education, both of the American Medical Association

Physical Therapy—American Physical Therapy Association

Physician Assistant Programs—Committee on Allied Health Education and Accreditation of the American Medical Association

Physiology—American Psychological Association

Speech Pathology and Audiology—Educational Standards Board of the American Speech and Hearing Association

Theatre Arts—National Association of Schools of Theatre

Academic Sessions

The University's academic year consists of two semesters of approximately 16 weeks each. The University has one regular summer session and, following that, an independent Study Unit of ten or more additional weeks for students in the Graduate College and the College of Law.

Academic Recognition

The University recognizes high scholastic achievements by awarding degrees "with distinction," "with high distinction," and "with highest distinction," based on the following criteria.

All 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 above
High distinction—grade-point average of 3.50 to 3.74
Distinction—grade-point average of 3.25 to 3.49
Dean’s List
Liberal arts students who achieve point-averages of 3.50 or above during a term of full-time graded work and who have no hours of I or O grades are recognized on the Dean’s List for that semester.

President’s List
Undergraduate students who achieve point-averages of 4.00 for two consecutive semesters or 12 or more semester hours of graded work and who have no hours of I or O grades are recognized by inclusion in the President’s List.

Undergraduate Scholar Assignments
For students who rank in the top one percent among undergraduates at the University. Undergraduate Scholar Assignments provide a limited number of students with an opportunity to do scholarly work with faculty members from all areas of the University on projects that range from art to Spain, from music to medicine. Depending on their interests and fields of study, undergraduate assistants might help in classrooms, visit research libraries, work in the field, perform laboratory experiments, gather and analyze data, program computers, or edit manuscripts.
The largest reward from this 10-hour-a-week appointment is the working relationship student form faculty member and the opportunity to do important teaching and research activities. As long as they maintain superior performance, assignments may be invited to continue their work throughout their college career, allowing them to improve the breadth and depth of their scholarship work and to cement the mentor relationship with their faculty member.

Honorary and Professional Societies
Pnita Deka Ramp, Smita N., Norton Board, and Omprakash Deka Daka are among 64 national honorary and professional societies that have active chapters at The University of Iowa campus.

University Honors Program
The University of Iowa Honors Program offers special academic and research opportunities to outstanding students in the Colleges of Business Administration, Education, Engineering, Liberal Arts, Nursing, and Pharmacy. Freshmen and sophomores may take special College of Liberal Arts honors courses, which are taught at a level and pace appropriate to honor students.

Students earn honors credits for courses that do not have honors sections through special arrangements with the professor (for example, by completing a special project). With permission from the University Honors Program and faculty, any course can be designated as "honors course" and can be noted on the student’s transcript.

Sophomores and seniors in the honors program who wish to work individually with faculty for research are invited to apply to be honors research scholars. Each semester a group of faculty members named Research Initiatives are selected from College of Liberal Arts and Sciences academic areas for the course 140:100 Honors Research Practicum.

Senior’s seminar is exploring the teaching aid of an insulindelivering are invited to apply to be honors research scholars. Each seminar is matched with a faculty member who is a teaching faculty in a research-level course in which students might benefit from contact with teaching seniors. Although their duties vary from course to course, honors scholars are expected to maintain regular office hours for consultation with students and to conduct review sessions when appropriate. Honors teaching scholars receive academic credit for the course 140:100 Honors Teaching Practicum.

In the junior and senior level, most departments offer honors seminars, independent research, and the opportunity to pursue an original senior project under the guidance of a faculty member. Honors students also can explore the option of designing their own honors interdisciplinary major. The primary components of the major are a plan of study, which is a carefully crafted plan during the major, and 36 semester hours of approved coursework, including a one-semester honors to conduct research and cooperate on a major research project that incorporates interdisciplinary approaches. These components are designed by the student in consultation with their honors advisor and the honors director.

Successful completion of the major honors requirements is required of all the requirements for the honors interdisciplinary major to receive a baccalaureate degree with honors in the major. Students who graduate with honors receive special recognition during commencement ceremonies. Other academic awards and recognition at graduation.

Several of these honors programs are administrated by the University Honors Program in the College of Liberal Arts and Sciences. Each has its own criteria and requirements. Interested students are encouraged to contact the Honors Program Office for more information.

To remain in the program, students must maintain a 3.20 point average.

For details of admission requirements for entering students and for more information about other aspects of the program, contact the University Honors Program.

The following are University Honors Program courses:

140:100 Honors Research Practicum 6 hrs.
140:200 Honors Teaching Practicum 6 hrs.
140:300 Honors Teaching Practicum 6 hrs.
140:400 Honors Teaching Practicum 6 hrs.

University Marking System
Grades (Definitions)
Grades point values
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
F 0

*H = honors
1 = acceptable
N = narcotic
0 = no profit
P = practical
* = inédite
S = satisfactory
U = unsatisfactory (Graduate College only)
W = withdraws

*Not used in computing grade-point averages

Grade-point averages displayed at the bottom of students' grade reports are truncated so as not to exceed 4.00.

The College of Law uses a numeric grading system.

Numbering of Courses
Each course in the regular University curriculum has an identifying number, prefixed by the number of the college, department, or program that administers the course. For example, ENGL 190 is in the course number list in the Department of English.

To check the requirements for entering and continuing honors and graduate students, consult the Honors Program Office or the Honors Program website.

To complete the program, students must maintain a 3.20 point average.

For details of admission requirements for entering students and for more information about other aspects of the program, contact the University Honors Program.

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<td>44 Geography</td>
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<td>7D</td>
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<td>Educational Administration</td>
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<td>Educational Psychology, Measurement, and Statistics</td>
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<td>College of Engineering</td>
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<td>51</td>
<td>2H</td>
<td>American History</td>
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<td>Biomedical Engineering</td>
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<td>Chemical and Biochemical Engineering</td>
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<td>Italian</td>
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<td>2K</td>
<td>Journalism and Mass Communication</td>
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<td>Civil and Environmental Engineering</td>
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<td>Latin American Studies</td>
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<td>Statistics and Actuarial Science</td>
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<td>144 Philothesis and Ethics of Politics, Law, and Economics</td>
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<td>00A</td>
<td>2S</td>
<td>Military Science</td>
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<td>2T</td>
<td>Aerospace Military Studies</td>
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<td>Bachelor of General Studies</td>
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<td>2U</td>
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<tr>
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<td>60 Anatomy</td>
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<td>08S</td>
<td>2V</td>
<td>Music</td>
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<tr>
<td>Bachelor of Science Laboratory</td>
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<td>61 Microbiology</td>
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ADMISSIONS

High School Preparation

Appropriate academic preparation for college work is important. 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 programs of their choice.

Students entering the University must have completed the following set of high school courses (and their equivalents). These high school course requirements apply to entering freshmen who graduated from high school after 1985. These transfer students with fewer than 24 semester hours of transferable credit who graduated from high school after 1985, and senior high school students with 24 or more semester hours of transferable credit who graduated from high school in 1980 or thereafter, complete the entering freshman requirements for students enrolling in the College of Engineering (instead of math). Four years of English/language arts, with emphasis on writing, speaking, and reading, as well as understanding and appreciation of literature.

Five years of foreign language.

American history and government.

Two years in history, social science, or science.

Two years of mathematics (two years of algebra and one year of geometry are required); in addition, a course in higher mathematics—trigonometry, analysis, or calculus—is recommended for students who plan to pursue a science major.

Students enrolling in engineering must meet the above mathematics requirements, including completion of a course in trigonometry.

Three years of science (two years must be from biology, chemistry, and physics; the third year can be from any area, including other not listed, such as general science, physical science, geology, astronomy).

For students enrolling in engineering, the three years of science must include one year of chemistry and one year of physics.

Engineering also recommends, but does not require, a course of computer programming.

One year of study in the performing arts, visual art, and music (students are recommended but not required).

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

Applying for Admission

Prospective students interested in enrolling in any of the schools of The University of Iowa should contact the Office of Admissions to request additional forms and application materials for both undergraduate and University housing. All applicants must submit formal applications, official transcripts, SAT scores, and ACT scores. Students with the highest valid SAT critical reading and mathematics scores are invited to complete the application.

ACT and SAT Scores

All entering freshmen and undergraduate transfer students who present fewer than 34 semester hours of transferable credit are required to complete the College Board SAT Reasoning Test (SAT), the ACT with Writing (ACT), or the Scholastic Aptitude Test (SAT) and have their scores reported to the University before they register for classes. The Office of Admissions recommends that students complete the ACT or SAT during the spring of their junior year of high school or in the following summer.

The scores from these exams are used as a criterion for admission, for placement purposes, for admission to honors courses, and for membership in University-administered organizations and fraternities.

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 department of the College of Business Administration other than economics, the Graduate Management Admission Test (GMAT). Prospective students of the Colleges of Dentistry, Law, or Medicine are required to take admission exams of the respective colleges.

Application Fees

A SAT application fee must accompany applications submitted by prospective students and personnel enrolled in a degree program at the University. The application fee for foreign students is $50. Application fees are nonrefundable.

Re-entry

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 must also submit official transcripts along with their application for re-entry. A $20 re-entry application fee is assessed to re-entry students when they enroll.

Application Deadlines

U.S. Citizens

Entering freshmen 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 sessions in which they plan to enroll. All application materials are due at the Office of Admissions for the deadlines listed below. Foreign students usually have earlier application deadlines (see "Foreign Students," below).

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

College of Business Administration: May 1 for summer session, May 1 for fall semester, December 1 for spring semester.

College of Dentistry: November 30, fall semester only; preliminary applications should be on file with the American Association of Dental Schools Application Service by this date. Verification of acceptance begins December 1.

College of Engineering: May 15 for summer session, May 15 for fall semester, November 15 for spring semester; early acceptance is defined; date enrollment may need capacity to delay in advance of the beginning of classes.
Determing Residence
For admission, tuition, and aid purposes, the University registrar classifies all students enrolled in the University as residents or nonresidents of Iowa according to criteria established by the State Board of Regents and on the basis of information provided by the student.

For state in which the student resides, the criteria may be found under "Iowa Administration." For a list of Board of Regents, see the back of the Catalog.

English Proficiency

Non-Native Speakers
The University's English proficiency requirement assumes that non-native speakers know English well enough to study without being hindered by language problems, to understand texts, and to participate successfully in class discussions. All 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) with their applications for admission and supporting academic documents. Awaesthetic factors from this policy are granted for persons who have received a baccalaureate or equivalent degree from a university in the United States, the United Kingdom, Canada (including French Quebec), Africa (English-speaking), Australia, or New Zealand.

U.S. Citizens and Permanent Residents
U.S. citizens and permanent residents whose native language is not English are required to submit scores on the TOEFL before registering for courses. English is required of this requirement in the cases of:
- graduation of high schools whose ACT composite score is 24 or above (SAT combined score of 1100 or above) and whose ACT English subscore is 21 or above (SAT 450);
- institutions of Iowa whose ACT composite score is 25 or above (SAT combined score of 1100 or above) and whose ACT English subscore is 21 or above (SAT 450).

Admission requirements to the University's English proficiency requirements before they register for courses. Applicants seeking exceptions are directed to the coordinator of English as a Second Language.

Foreign Students

Unsatisfactory applicants—Regular Admission
A minimum TOEFL score of 350 is required to be considered regular admission to the University and to begin study in a degree program. Newly admitted undergraduate students whose TOEFL scores are 600 or above may begin academic course work without restriction. Applicants whose academic credentials indicate that they should be admitted, but whose TOEFL scores fall between 500 and 590, are required to complete an English proficiency evaluation before their first registration for courses.

Based on the results of the evaluation, these students may be allowed to take a full academic course load, excluding 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 proficiency reaches an appropriate level.

Undergraduate Applicants—Conditional Admission
Applicants who meet the academic requirements for admission, but whose TOEFL scores fall between 450 and 590, may be considered conditional admission to the University of Iowa. At space permits, conditionally admitted students enrolled in the Iowa Intensive English Program for up to one year. To change their admission status from conditional to regular (a prerequisite for beginning student in a degree program), students must attain a minimum TOEFL score of 530 and complete an English proficiency evaluation.

Based on the results of the evaluation, these students may be allowed to take a full academic course load, excluding English as a Second Language (ESL) courses, or be required to enroll in credit-bearing ESL courses.

be required to continue in the Iowa Intensive English Program until their language proficiency reaches an appropriate level.

Students without TOEFL scores or with scores below 450 are not considered for admission to the University. These students may enroll in the Iowa Intensive English Program (IEP). However, the IEP program without conditional admission to the College of Liberal Arts does not grant or guarantee admission to an academic program at The University of Iowa.

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

Graduate Applicants
A minimum TOEFL score of 530 is required for admission to the Graduate College. There is no conditional admission to the University, whose TOEFL scores are below 530. Newly admitted graduate students who possess TOEFL scores below 530 are required to complete an English proficiency evaluation before their first registration for courses. Some departments may require students to complete an English proficiency evaluation regardless of TOEFL score and to enroll in English as a Second Language courses until their English proficiency reaches the appropriate level.
Graduate students should consult their departmental advisors to determine whether or not they should enroll in course work in English as a Second Language.

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-bearing courses in English as a Second Language or in the nationwide 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, 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 “Languages” 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 received their measles vaccine, it is necessary that the attending physician sign and report to the Student Health Service your past and continuing care can be provided.

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 weekend when classes are in session.

Campus visits might include a meeting with an admission counselor, a group information session, a campus or residence hall tour, and an appointment with a faculty member or academic advisor in a particular area of study; or some visitors might prefer one of the University’s various “Visit” programs. Answers are provided to questions about academic programs, registration 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.

Campus visits start at the Julia G.沃尔沃 House Admissions Visitor Center. Contact the Office of Admissions to arrange a visit.

Orientation Services
With the aid of representative students, faculty, and administrative staff, orientation programs design and conduct a variety of year-round programs to help new freshmen, transfer students, and foreign students make a successful transition to University life.

Once admitted to the University, students are expected to complete an orientation-registration program before their class begins. During orientation, new students learn about academic policies and requirements, take placement tests, meet with their academic advisors, complete their first registration, and become acquainted with faculty, staff, and other students. Parents are encouraged to attend special parent orientation sessions conducted concurrently with the student programs.

Freshmen and transfer students admitted for the fall semester attend an orientation/registration program during the summer prior to the start of classes. Students admitted for the spring semester attend a seminar in December or during the week preceding the start of the semester. Students admitted for the summer session attend an orientation program the Sunday before classes begin in June.

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, and course equivalency.

Adjuncts and representatives annually visit each Iowa area community college and are available to answer questions via scheduled programs, small groups, or by appointment. A variety of transfer manuals are available to help students understand procedures and policies.

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

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-seeking students in good standing in 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 recorded as resident credit at the home institution.

Approval for participation and credit in the exchange program must be obtained in advance of registration. The department head must approve the acceptance of such credit if it is to admit to that major, and time must be allowed to ensure complete processing of the application between the corresponding universities within the days specified for enrollment.

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

TUITION AND FEES
The University’s schedule of tuition and fees for full-time students, per semester, for the academic year 1992-93 is stated below.

Extension courses are $128 per semester hour for graduate students and $85 per semester hour for undergraduate students, with fees for extension courses being $120 per semester hour. Correspondence courses are $87 per semester hour. All fees are subject to change at action of the State Board of Regents.

Undergraduate
Resident $1,384
Nonresident 3,526
Graduate
Resident 1,289
Nonresident 3,675

Dentistry
Resident 2,373
Nonresident 6,708

M.A.
Resident 1,722
Nonresident 4,738

M.B.A.
Resident 1,814
Nonresident 4,059

Medicine
Resident 2,672
Nonresident 9,075

Doctor of Pharmacy
Resident 2,873
Nonresident 8,701

General fees provide for the student’s use of the Iowa Memorial Union, libraries, laboratories, and gymnasium; free admission to some sports events and to student-faculty concerts; reduced fees for admission to University sponsored theater productions and to performances by visiting major and concert artists; subscriptions to the student newspaper, The Daily Iowan, delivery 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.

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 Cinema College and the College of Business Administration, Engineering, Liberal Arts, Pharmacy, Veterinary, and Medical subjects who audit courses are assessed a fee based on the lowest number of...
semester hours for which the course is offered that semester.

**Payment of Student Accounts**

The University makes a monthly bill for each student to an approved address. The bill includes charges incurred for tuition, meal, board, and other expenses in residence halls and theaters, or registration and parking fees, library and printing fees, and other departmental charges. Tuition and fees are billed three times each semester and once during the summer session. Tuition and fees adjustments occur on a monthly basis.

**Refund Schedule**

Students who withdraw registration during a regular semester receive reduction of fees as advanced, 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.

**FINANCIAL AID**

The University of Iowa has an excellent record of helping its students obtain scholarships, grants, loans, and other forms of financial assistance. Approximately 65 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**

Students must be accepted for admission to be considered for financial aid at the University. From January through April, newly admitted students receive instructions 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 Family Financial Aid Statement (FFAS) to American College Testing (ACT), the Financial Aid Form (FAF) to the College Scholarship Service (CSS), or SINGLEFLIE to United Student Aid Funds (USAF) as soon as possible, and they should have the agency send a copy of the need analysis to the University Office of Student Financial Aid.

Filing the FAF, FAF, or SINGLEFLIE 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 FAF, FAF, or SINGLEFLIE may be obtained from high school and community college counselors. The FAF, FAF, and SINGLEFLIE are good for one academic year. Students must reapply each year.

**How Aid is Determined**

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

1. **The University determines the estimated costs for an academic year; these include tuition, fees, books, room and board, transportation, and personal expenses.**
2. **ACT, CSS, and USAF use 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.**
3. **Financial need is determined by subtracting the expected family contribution from the estimated costs for an academic year at the University.**
4. **Wherever 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 is usually 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 non-citizens and are enrolled at full-time in a degree program, and they demonstrate financial need as determined by the FAF, FAF, or SINGLEFLIE.

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

1. **Minimum Semester Hours:** Undergraduates must earn the required semester hours per academic year (fall, spring, and summer sessions combined); graduates must earn 12 semester hours per academic year.
2. **Minimum Core-Plus Average:** Undergraduates and graduates must maintain the minimum grade-point average required of the college in which they are enrolled.
3. **Duration of Eligibility:** Undergraduates must complete their bachelor's degree within six academic school years (12 semesters) or 124 semester hours; graduates working toward master's degrees must complete their program of study within four academic school years (eight semesters) or 48 semester hours; graduates working toward combined master's/doctoral degrees must complete their programs of study within eight academic school years (16 semesters) or 96 credit hours.

Financial aid eligibility is canceled for one or more of the following reasons: exceeding 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.

**Scholarships**

**Presidential Scholarships**

The University annually awards Presidential Scholarships to 20 high school students on recognition of their outstanding high school achievements. The scholarships include tuition tuition, as well as room and board, and are renewable for a maximum of four years, provided that the student maintains a 3.00 grade-point average at the University.

For further information, students should contact their high school guidance counselor or the Office of Admissions.

**Iowa Center for the Arts Scholarships**

The Iowa Center for the Arts Scholarships are awarded on the basis of exceptional talent in the fine arts. Each department (art, music, theatre arts, and music) awards one scholarship to an entering freshman majoring in one of the areas. The scholarship, the highest award that these areas offer to entering freshmen, is a $2,500 freshman-year, renewable award. Application deadlines for these awards fall between January and March of applicants' senior year of high school.

Application information is available from the Office of Admissions or the appropriate department.

**Opportunity at Iowa Scholarships**

Opportunity at Iowa Academic Scholarships are the University's highest scholarly awards for entering minority freshmen. The scholarships include full tuition, as well as room and board, and are renewable for a maximum of four years, provided that the student maintains a 3.00 grade-point average at the University.

Opportunity at Iowa Achievement Scholarships are awarded to entering freshmen on the basis of full-time tuition, which may be renewed for a total of four years, provided that the student maintains a 3.00 grade-point average at the University. Application information is available from the Office of Admissions or from high school guidance counselors.

**National Merit Scholarships**

The University offers National Merit Scholarships to enter freshmen who have attained finalist status in the National Merit Competition. Students may receive its up to four years. The minimum award is $750. Awards range from $750 to $2,000, based on financial need. The FAF, FAF, or SINGLEFLIE determination must.

**Departmental Scholarships**

For information about departmental scholarships, students should inquire at the offices of the academic programs of interest.
University of Iowa Tuition Scholarships

Undergraduate tuition scholarships are institutional funds awarded on the basis of financial need and academic achievement. To qualify, entering freshmen must have an ACT composite score of 26 or above or must rank in the upper 10 percent of their high school graduating class. Undergraduates or transfer students must have at least a 3.00 cumulative grade-point average to qualify for the scholarship. The maximum amount of the scholarship is resident tuition, and the award is applied directly toward tuition. These scholarships are for undergraduates without a bachelor's degree who are enrolled full-time. The FFS, FAF, or SINGIFLE determines financial need.

LaVerne Hoyes Scholarships

LaVerne Hoyes Scholarships are for U.S. citizens who are direct descendants of World War I army or navy veterans. Awards are based on financial need and are available to undergraduates without a bachelor’s degree. Students must file the FFS, FAF, or SINGIFLE and obtain the LaVerne Hoyes application from the Office of Student Financial Aid. Application deadline is May 1.

University of Iowa Farm Scholarships

Farms scholarships are for entering freshmen who are residents of Iowa. Applicants must rank in the upper 20 percent of their graduating class, be enrolled full-time in one of the colleges operated by their parents. Students must file the FFS, FAF, or SINGIFLE and obtain the application from the Office of Student Financial Aid and must be submitted by April 1.

Grants

Pell Grants

Undergraduate students without bachelor's degrees may apply for Pell Grants. These awards meet up to $5,570 per 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 FFS, FAF, or SINGIFLE determines eligibility for Pell Grants.

Supplemental Educational Opportunity Grants (SEOG)

The 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 FFS, FAF, or SINGIFLE determines eligibility for this program.

Educational Opportunity Program (EOP) Grants

Institutional funds are awarded to minority students who show exceptional financial need. Parent income and asset information must be reported. The FFS, FAF, or SINGIFLE determines eligibility for this program.

Iowa Grant

The Iowa Grant is a state-supported program awarded on the basis of need to undergraduate Iowa residents. The FFS, FAF, or SINGIFLE determines eligibility for this program.

IMAGES

The Iowa Minority Academic Grants for Economic Success (IMAGES) is a program for minority undergraduates with financial need. The program is funded by the Iowa legislature. Preference is given to residents of Iowa. The FFS, FAF, or SINGIFLE determines eligibility for this program.

Loans

Perkins Loans

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 FFS, FAF, or SINGIFLE determines eligibility for these loans.

Stafford Loans

Stafford Loans are low-interest loans made to students by lenders such as banks, credit unions, or savings and loan associations. These loans are insured by a guarantee agency in each state and reinsured by the federal government. Recipients must be enrolled at least half-time. The interest rate is 7.9 percent, and repayment begins when recipients cease to be at least half-time students. The FFS, FAF, or SINGIFLE determines eligibility for these loans. Applicants must submit a Stafford Loan application, which is available from the lending institutions.

PLUS Loans and Supplemental Loans for Students (SLS)

PLUS loans are for parent borrowers, the SLS is for students. Both loans provide additional funds for educational expenses. PLUS and SLS applications are available from banks, credit unions, and savings and loan associations. The loans have a variable interest rate that is adjusted each July. SLS borrowers must file the FFS, FAF, or SINGIFLE.

Health Professions Student Loans

Health Professions Student Loans are long-term federal loans for students enrolled full-time in the Colleges of Medicine, Dentistry, or Pharmacy. Awards are available based on federal funding. The interest rate is 5 percent. The FFS, FAF, or SINGIFLE determines eligibility for this program.

Research Student Loans

Long-term federal loans are available for students enrolled at least half-time in the College of Nursing. Amounts available depend on federal funding. Repayment begins six months after recipients cease to be halftime students. Interest is 5 percent. The FFS, FAF, or SINGIFLE determines eligibility for these loans.

Jobs

Part-Time Jobs

Student part-time employment can provide a meaningful work experience as well as help students meet educational expenses. The University of Iowa estimates nearly 11,000 students are in a part-time position. Ranging from hourly workers to office workers, the jobs offer students the opportunity to increase skills, gain experience, and earn money.

Student part-time employment is limited to 20 hours per week during the academic year and 40 hours per week during the summer season. The minimum wage paid by the University is $4.65 per hour. Students employed at an hourly basis are paid by check once every two weeks. Jobs are advertised via computer terminals across campus.

The student newspaper, The Daily Iowan, also has job listings in the classified ads. Friends, advisors, and instructors are other possible sources of information about jobs.

Students contact employers directly to arrange interviews. The Office of Student Financial Aid does not operate a referral or placement service for student workers. However, students who are hired for jobs on campus must come to the student employment area of the Office of Student Financial Aid, to process pay stub paperwork.

College Work-Study Program

The College Work-Study (CWS) Program helps students earn money to meet educational expenses. This program currently is funded by the federal government and the Iowa legislature. Students in the CWS Program must be enrolled at least half-time in a degree program. Their work experience should complement and reinforce their educational objectives.

The amount of CWS money a student is eligible to receive at least half-time in a degree program is based on federal funding. The minimum wage paid by the University is $4.65 per hour. Students are paid by check once every two weeks.

Other Sources of Aid

A guidance counselor or high school principal may have information on Iowa Scholarships, and school or public libraries are excellent sources for publications about financial aid. Many places of employment, professional associations, and
labor inform 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 uncover some unexpected source of financial aid.

Information about financial assistance for students with disabilities is available from the University's Office of Services for Persons with Disabilities.

Information about financial assistance for veterans of U.S. military service is available from the University's Office of Veteran Services.

Information about Education Aid to War Orphans is available from the Iowa Better Board (Black House, Des Moines, IA 50314).

Additional Information for Graduate Students

The primary sources of financial aid for graduate students are the University Teaching and Research Assistantships, Iowa Fellowships, Graduate College Black Alumnae Fellowships, and Graduate Opportunity Fellowships. Scholarships, fellowships, and part-time employment also are available. Further information is available from academic departments or programs.

The resource center of the University's Division of Sponsored Programs has information on student aid available from non-university sources, such as foundations and professional associations.
The OIES procures development of international studies and promotes the cooperation in international studies. It also enables faculty and students to pursue specific research on various topics from an international perspective.

Through international cooperation and exchange programs, the OIES encourages the development of international ties between the University of Iowa and other universities and organizations in foreign countries.

Foreign students provide information, counseling, and services related to orientation, financial aid, immigration regulations, and liaison with foreign governments and sponsoring agencies. They support or support educational programs such as the Friends of International Studies, the Germanic English Project, and various activities that bolster the cooperation between students and scholars from other countries and their domestic counterparts. In brief, they help with problems and questions in German and American academic settings.

The OIES provides services to facilities and departments. It receives applications and requests in a variety of ways. The University of Iowa is described in foreign countries, and students are considered for admission to the University of Iowa. The University of Iowa is described in foreign countries, and students are considered for admission to the University of Iowa. The University of Iowa is described in foreign countries, and students are considered for admission to the University of Iowa.

The OIES serves as an advisor to the faculty and departments. It ensures that the University of Iowa is described in foreign countries, and students are considered for admission to the University of Iowa. The University of Iowa is described in foreign countries, and students are considered for admission to the University of Iowa. The University of Iowa is described in foreign countries, and students are considered for admission to the University of Iowa.

The OIES provides services to the faculty and departments. It offers to the faculty and departments. It offers to the faculty and departments. It offers to the faculty and departments. It offers to the faculty and departments. It offers to the faculty and departments.
In addition to placement services for liberal arts, business, and engineering students, the office also coordinates placement information for students who need jobs during the summer or have other college placement concerns. Career Day, a career expo, is held each fall and offers students the opportunity to meet with hundreds of employers. A separate graduate and professional school fair is held each fall too. A Student Job Fair in the spring semester is also held annually.

Offices are located in Phillips Hall and the Iowa Memorial Union.

Career Information Center

This website will guide students toward hundreds of resources about future market trends, career options, academic requirements for particular careers, work environments, places of employment, salary ranges, advancement opportunities, and geographical regions of the country. The career center also maintains information on developing careers for finding jobs, researching organizations and nonprofit agencies, identifying opportunities and writing resumes and cover letters, and improving interviewing skills. An advisor is on duty to help students use the material. No appointments are necessary. The center is located in the Iowa Memorial Union.

Contact Center for Career Development and Cooperative Education, in Collin Hall, is the primary campus resource for students interested in establishing educational work experiences before their graduation. Undergraduates and graduate students may seek assistance related to their career and professional development. Cooperative education students learn about, plan for, and experience their internship, working part-time on their selected career path, and complete work of a meaningful character. This allows students to gain hands-on work experience, develop skills, and be empowered to pursue lifelong learning. Students can find more information about career services at the website. Students interested in educational opportunities should visit the Center for Career Development and Cooperative Education at the beginning of their first year at the University.

Tutoring Services

Mathematics Tutorial Laboratory

The Mathematics Tutorial Laboratory is integral in instruction in both pre-calculus and beginning mathematics courses. Students are encouraged to visit the math lab’s programs and activities, which include private and small group tutoring, individual and small group instruction, diagnostic testing, and advising.

The math lab holds tutoring hours throughout the day and at some evenings; no appointments are necessary. Students are encouraged to visit the lab for help with assignments; to use the lab as a resource for supplemental materials; to study in the lab’s supportive environment; and to consult with their teaching assistants concerning problems related to their courses.

Reading Lab

The Reading Lab, located in the English Language Lab, provides individual instruction to all University students interested in improving their reading ability with comprehensive and enjoyable.

Students come to the Reading Lab to work on assignments from different courses. Since everyone has different learning styles—writing notes, taking tests, and so forth—others need help using the University Library for research projects. Many simply want to become more efficient and capable readers. Whatever their goals, students can work on readings of their own choice.

Each student meets twice a week for an hour of one-on-one tutoring with his or her own instructor. No fee for registration is required; students may sign up in the English Lab.

Kinesiology 10 (individual instruction in Reading) is offered through the Reading Lab. For more information, see "Kinesiology" in the College of Liberal Arts section of the Catalog.

Writing Lab

The Writing Lab provides individualized writing experiences for University students who want to improve their writing. Lab students work at their own pace and with their own instructors, who offer comments and suggestions to help the students become more effective. Students have control over their own writing, as they learn how to develop their ideas clearly and cogently.

Students may enter for credit in the lab throughout the semester. On the main campus, they register for 1 unit of S/U credit (no tuition charge). For credit, students must pass through a mid-term and final exam, write 10-15 pages, then write a final paper. Students must attend all meetings. For more information, contact the Writing Lab or the Office of Academic Services.
Registrar

The Office of the Registrar determines the residence status of each student, issues University identification cards, supervises registration procedures, provides course information, and coordinates commencement and academic special events programs. It assists faculty and staff with the maintenance of students' academic records, and issues official transcripts and verifications. The registrar's office helps students determine graduation requirements, submit applications for degrees, and transfer college or University academic policies. It provides assistance to students on Selective Service and military deferment status, and helps student veterans with financial aid at the University and access to benefits of the Veterans Affairs program.

Transcripts

Students who have completed work at The University of Iowa can obtain an official transcript of their work upon request in the Office of the Registrar. Fees are $2 for the first copy and $1 for each additional copy on the same order. For an additional $1 charge, students with proper identification can obtain an official transcript service.

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

Services for Persons with Disabilities

The University of Iowa is committed to making its facilities and programs accessible to people with disabilities. The Office of Services for Persons with Disabilities (SPD), located in Burge Residential Hall, provides assistance to students with a wide range of visible and invisible disabilities, including hearing and speech impairments, learning disabilities, mental health, physical limitations, and others. The office's goal is to help students to discharge duties in the same manner and to assume the same responsibilities as other students. The office also provides information to students, faculty, and staff on facilities and services for students with disabilities.

SPD works closely with University faculty and staff to provide assistance with admissions, orientation, academic and career planning, academic support services, financial aid, housing, transportation and parking, kà and athletics camps with open spots, and other

Special Support Services

The Office of Special Support Services, located in Cohn Hall, encourages a multiplicity of diverse groups of students to develop their individual potential as they may wish their educational degree objectives at The University of Iowa. The office is a resource for students who have culturally and socially different backgrounds and provides eligible students with academic, social, and financial support.

The office also assists in the recruitment of prospective undergraduates, graduates, and professionals. The Office of Special Support Services includes New Directions in Learning and the Voyager's Project. All non-traditional Iowa students who participate in Voyager's Project or Educational Opportunity Program may receive assistance.

GENERAL SERVICES

Campus Information Center

Located in the east terrace lobby of the Iowa Memorial Union, the Campus Information Center provides information about campus and community resources and University services and operations. It is equipped to assist students and campus community members, and provides up-to-date listings of available rental units, city and campus maps, lists of restaurants, hotels, motels, and apartment complexes. The center is open seven days a week.

Campus Programs and Student Activities

The Office of Campus Programs and Student Activities (OCPSA), located in the Iowa Memorial Union, provides diverse and balanced cultural, social, interracial, and educational programs and activities in the Iowa Memorial Union and throughout the University of Iowa campus. It helps students understand organizations, build, and maintain educational environments that enhance students' academic and personal development.

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. The Student Volunteer Clearinghouse, a program designed to incorporate local volunteers access to University students involved in volunteer service, is coordinated by the OCPSA.

Campus programming and special event planning are ongoing tasks for OCPSA. Student groups work in conjunction with OCPSA to plan and conduct traditional events such as homecoming, Iowa Day, and other special events and activities, and special college events. In addition to the Arts, Craft, and Recreation Area, the Student Recreation Center, the University Box Office, Campus Programs Office, Recreation Services, the Iowa-Native American Cultural Center, and the Iowa-Native American Cultural Center. The Iowa-Native American Cultural Center is the office for Native American students who wish to coordinate through OCPSA.

Cultural Centers

Iowa City

The University sponsors the Iowa-Native American Cultural Center and the Iowa-Native American Cultural Center located in the residence of the Office of Campus Programs and Student Activities. Students meet at the centers to share experiences, form cultural academic and personal support, and develop social programs, all of which are aimed at fostering culture and building a center. Activities and programs at the center are open to all students.

Sports and Recreation

Intercolligate Athletics for Men

The University of Iowa is a member of the Big Ten Conference and has athletic programs in football, basketball, track and field, tennis, swimming, golf, wrestling, softball, cross-country, and gymnastics. Women's basketball, tennis, and gymnastics programs are sponsored by the Women's Basketball and Gymnastics Association, which is comprised of 15 members from the University's athletic and administrative staff, two University alumni, one representative from the University Student Staff Council, and two students.

Intercolligate Athletics for Women

The University of Iowa sponsors nationally competitive intercollegiate athletic teams and events for women in basketball, cross-country, field hockey, golf, gymnastics, softball, swimming and diving, tennis, track, and field, and,

Arts Council also are coordinated through OCPSA.
Student Life at Iowa • General Services


terest. It comprises as a member of the Big Ten Conference and the National Collegiate Athletic Association (NCAA). Athletic scholarships are available in all ten sports to qualified student athletes. Women's sports are a major focus. The Intercollegiate Athletics Program is governed by the University Board of Directors. University Board of Directors.

Recreational Services

The Division of Recreational Services, located in the Field House, administers one of the most diverse recreation programs in the country. There are seven major programming areas in which students, faculty, and staff may participate.

Intramural Program

More than 30 different intramural sports are offered. Activities vary from popular team sports such as basketball and flag football to individual and non-activities such as rock climbing and weightlifting.

Sports Clubs

Recreational services and funds more than 20 sports organized by individuals to further their interest in a sport or recreational activity. Clubs range from competitive team clubs such as soccer and tennis to recreational clubs such as sailing and water ski clubs.

Lesson Programs

Recreational Services offers a variety of noncredit instructional classes for all age groups throughout the spring term. To defray the cost of instruction, these classes charge a nominal registration fee for each program. Typical lesson programs include swimming, tennis, golf, tennis, swimming, and various martial arts classes.

The division also offers fitness programs that stress service-mindedness for people of all ages and fitness levels.

Informal Recreation

An informal drop-in recreation program is available for popular activities, including basketball, swimming, racquetball, golf, tennis, weight training, and jogging.

Outdoor Recreation

The division operates the Macbride Nature Recreation Area, one of the nation's outstanding nature preserves. The 425-acre nature area, located 15 miles north of Iowa City on Lake Macbride and the Coralville Reservoir, offers picnic and swimming areas, nature trails, an indoor archery range, a lake-tube/rafting center, and some of the finest cross-country skiing in the Midwest. It is also the site of day camps and nature awareness programs for elementary school children.

The division also sponsors a weekend outdoor trip program that features a wide variety of activities such as white water rating and canoeing, backpacking, hiking, backpacking, horseback riding, cross-country and downhill skiing, and spelunking. An outdoor check-out service located at 701 North Clinton Street, offers all types of outdoor equipment, including cross-country skis, picnic equipment, canoes, backpacks, shoes, and tents.

Persons with Disabilities

Recreational Services has a weight and exercise room with equipment modified for use by persons with disabilities. In addition, recreational staff members are available to help disabled students who want to be included in regular recreational services programs. The division often a limited number of programs suitable for persons with disabilities.

Summer Sports Camps

The University of Iowa has one of the largest summer sports programs in the Midwest. All popular team sports are offered—basketball, football, soccer, volleyball, wiffle ball, track and field, golf, hockey, and tennis. There are also unique camps in activities such as cheerleading and sports medicine. The University of Iowa Sports Camps Office is located in the Iowa Memorial Union.

Iowa Memorial Union

The Iowa Memorial Union is the hub of student life. Its facilities include a 400-seat auditorium, the Center for Fine Arts, the University Book Store and coffee shops, the Center for Performing Arts, the Center for Conferences and Events, and the University Union.

Women's Resource and Action Center (WRAC)

The Women's Resource and Action Center (WRAC) provides services to meet educational, cultural, social, and personal needs of University and community women. WRAC advocates the men's issues, promotes women's issues, and provides support services. The center is committed to empowering women through providing information, skills, and support.

The WRAC provides a range of services for both personal and educational needs. It operates a free drop-in program, offers evening and weekend workshops, lectures, and classes; provides a wide variety of support and discussion groups for women; offers various one-time program-setting sessions for women; and publishes a newsletter three times a year.

The WRAC houses the Student Union Women's Resource Library and conducts a wide range of programs and activities. For more information, contact the Women's Resource and Action Center, 1105 University Union, Room 202, Iowa City, IA 52242, or call 319-335-0772.


University Counseling Service

The University Counseling Center (UCC) is committed to fostering a multicultural environment. It staffs professional psychologists, and advanced doctoral students. It offers counseling services for students with disabilities and personal counseling and therapy in group, individual, couples, and group settings. UCC also offers programs, workshops, and community service activities. Most of its 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 Student Life. It serves veterans, dependents of veterans, and service personnel in matters relating to Veterans Affairs educational benefits, University registration, and study at the University.

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Housing

Fair Housing Policy

The following is the University’s statement on fair housing practices:

"It is the policy of the University that no individual shall be denied the use of housing facilities on the basis of race, color, religion, national origin, age, sex, or handicap, in accordance with all laws and regulations of the United States, including Section 504 of the Rehabilitation Act of 1973."

University Residence Halls

The University’s nine residence halls provide housing and living accommodations and are intended to support the academic and personal growth of students.

Applications and Assignments

Prospective undergraduate students should request housing application forms to apply for residence hall accommodations. Students applying for residence hall accommodations should read the terms and conditions of the contract, provide all information requested on the application form, sign the contract, and return the completed application contract, with a check for $50 made payable to The University of Iowa, to the housing office in Bierce Hall.

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

Roommate requests are processed according to dates on which the housing application is received. The assignment office does not consider requests for roommates who have not been admitted at the time assignments are made, for those who have not met the UH housing, or for those who have not completed the housing application correctly.

Applications do not become room assignments until they have been admitted to the University. However, they may apply for housing as soon as they apply for University admission.

The residence hall application contract and deposit advance payment constitute a contract offer. Applicants may withdraw their application by notifying the University Housing Assignment Office in writing before their application becomes a binding contract. The application becomes binding approximately two days after the University Housing Assignment Office issues notice of acceptance of the contract and assignment of accommodations. Assignments are usually mailed to new students during the month of 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 in accordance with the terms and conditions set forth in the contract.

Rates

Basic rates for University residence hall accommodations for the 1992-93 academic year are $3,148 for a double room and $2,908 for a triple, with full board (20 meals per week). Rates for meal and board options vary according to accommodations. Rates are subject to change annually.

Family Housing

The University of Iowa provides 749 unaffiliated family housing units to support the families of students living with their families. Hawkeye Court and Hazelwood Court are located on the west side of Iowa City, and Pecanwood is located close to the central campus. Each complex is unique, but all three offer off-campus parking, refrigerator and oven, range, washer, dryer, cable, and internet services, play areas for children, telephone, and local service, and basic television reception with pay cable option. There is schoolbus transportation for children in Hawkeye Court and Hazelwood Court.

Rent includes telephone on campus and local service. Rent, but not electricity, is included in the monthly rent for the Hawkeye Drive residents. Hawkeye Court and Pecanwood residents must pay for gas and electricity. All units are unfurnished.

Monthly rents for the 1992-93 academic year are $185 for efficiencies, $230 to $245 per month for one-bedroom units, and $279 to $353 for two-bedroom units. Rates are subject to change annually.

Family housing is assigned according to the order in which applications are received. Applicants must meet all University admission requirements before assignments can be made. Applications may be filed before admission is complete, but care is not accepted more than one 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 apartments and houses. The clearinghouse also suggests other resources available in looking for housing and offers a packet of helpful information for prospective residents of the area.

Fraternities and Sororities

Twenty-nine undergraduate social fraternities and 20 undergraduate social sororities exist on the Iowa campus. Twenty-two fraternities and 15 sororities operate chapter houses, which accommodate 33 to 60 people each.

Undergraduate fraternities include Acacia, Alpha Kappa Lambda, Alpha Phi Alpha, Alpha Tau Omega, Beta Theta Pi, Delta Chi, Delta Tau Delta, Delta Sigma Pi, Delta Upsilon, Eta Sigma Phi, Gamma Alpha, Gamma Phi Beta, Gamma Theta, Eta Sigma, Chi Eta, Eta Iota Delta, Nu Sigma Nu, Phi Kappa Psi, Phi Kappa Tau, Phi Kappa Theta, Pi Kappa Alpha, Sigma Chi, Sigma Nu, Sigma Lambda Beta, Sigma Xi, Sigma Upsilon, Sigma Tau Gamma, Tau Xi, Tau Epsilon, Theta Chi, and Chi Omega.

Undergraduate sororities include Alpha Chi Omega, Alpha Delta Pi, Alpha Gamma Delta, Alpha Xi Delta, Chi Omega, Delta Delta Delta, Delta Gamma, Delta Delta Chi, Delta Kappa Epsilon, Delta Phi Epsilon, Delta Phi Eta, Kappa Alpha Theta, Kappa Kappa Gamma, Phi Beta, Phi Kappa Psi, Sigma Gamma, Sigma Xi, Sigma Lambda Beta, Zeta Beta Tau, and Zeta Tau Alpha.

For more information, please contact the housing office or visit the University’s website.
CODES, POLICIES, AND STUDENTS' RIGHTS

Code of Student Life

As members of the academic community, students are encouraged to develop a pattern of critical judgment and to engage in a sustained and independent search for truth. Freedom to learn and freedom to teach is inseparable in a democratic society. The freedom of the student depends upon 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 the 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 freedom is 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 precept that "no aspect of its programs shall there be differences in the treatment of persons because of race, creed, color, national origin, age, sex, disability, and any other classifications that deprive the person of consideration as an individual, and that any classifications and activities shall be available to all. Among the classifications that deprive the person of consideration as an individual are those based on official or unofficial standards of clientele or taste. This principle is expected to be observed in the interpretation and administration of University policies, specifically in the admission, housing, and education of students; in policies governing programs of extracurricular life and activities; and in the employment of faculty and staff personnel. The University shall work cooperatively with the community in upholding these principles.

Student Complaints Concerning Faculty Actions

Student complaints concerning actions of faculty members are pursued first through the informal mechanisms 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.
- If the matter is not resolved, the student may report the issue to the faculty member's chair or department head.
- If the matter is not resolved at this level, the student may report the issue to the dean of the college.
- If the matter is not resolved at the dean level, the student may report the issue to the Office of the University Ombudsperson.

They may request the Ombudsperson at the outset, however, if there are very good reason to do so. A decision is a matter of discretion and is not binding on the University.

The Ombudsperson has no power to order changes in rules, regulations, policies, or procedures, or in the behavior of other University officials.

Policy on Sexual Harassment

Following are excerpts from the University "Policy on Sexual Harassment and Sexual Harassment," 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 deprives the student of the University and the faculty, staff, and the academic community of a worthwhile educational opportunity, the very possibility of a healthy and productive relationship; it is degrading to individual students, faculty, staff, and the academic community as a whole. When, through fear of reprisal, a student, faculty member, or other member of the University community is subjected to sexual harassment, the ability of the student, faculty, staff, and the academic community 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 clearly violates the power inherent in a faculty member's or supervisor's position. Through grade, wage, promotion, recommendations for graduate study, and the like, a teacher or supervisor can cause a decisive influence on a student's, faculty member's, or other member's career at the University and beyond.

(c) While sexual harassment most often takes place in situations of a power differential between the person involved, the University also recognizes that sexual harassment may occur between persons of the same University status. The University will not tolerate behavior between or among members of the University community that causes an unwelcome 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 unwelcome advances, requests for sexual favors, or other verbal or physical conduct of a sexual nature when
Section 7. Consensual Relationships in the Instructional Context

No faculty member shall have an anonymous 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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Masterclass with Honcher Auditorium guest artist Isaac Stern
RESEARCH AND INTERDISCIPLINARY ACTIVITIES

The University recognizes that its creative activity is indispensable if it is to achieve 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 or in 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

• fosters the development of new knowledge;
• develops and maintains the infrastructure for proper conduct of research;
• helps individual, group, and organizational units search out and obtain funds from potential sources in order to enhance the University's education, research, and service missions;
• provides a forum for systematic translational review of potential major, research-based University activities as well as internal management for projects judged worthy of pursuit;
• assists interdisciplinary and collaborative research and service efforts within and beyond the University to take advantage of funding opportunities;
• identifies high-priority national and state research needs related to the University's mission, disseminates information pertaining to those needs; and assists in development of a University agenda to meet those needs;
• offers federal legislation and regulations, enhancing the University's position as a major education and research institution;
• provides a point of contact for the Oakdale Research Campus in support of the University's research mission;
• stimulates and manages technology transfer of intellectual property to the private sector;
• manages University efforts to improve Iowa's economy;
• provides the Oakdale Research Park as a vehicle for University/industry interaction.

The Office of the Vice President for Research maintains a close relationship with the Graduate College because of the college's central role in linking the University to the private sector and the vital connection between graduate programs and research and creative activity.

The University Research Council advises the vice president for research in a regular advisory capacity. The council consists of ten faculty members who are widely recognized for their professional involvement in basic research or creative activity, one representative of the University staff, and two student members.

Faculty members include two each from the biological, physical, and social sciences and the humanities, and two from the faculty at large. The council gives regular consideration to matters such as the establishment of general policies regarding the University's research and creative efforts, the review of policies and procedures concerned with supporting 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.

Programs

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

Carver Scientific Research Initiative Grants Program

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

The program provides competitive research grants as "venture capital" to encourage faculty who have existing ideas with long-range potential, but who need to conduct preliminary studies in order to obtain research grants.

Awards normally are limited to projects in the natural, physical, biological, and chemical sciences in the Colleges of Liberal Arts and Engineering.

Junior Faculty Research Support

A limited amount of money is available each year from the National Institutes of Health for the support of the initial research efforts of junior faculty (other than those in the Colleges of Dentistry, Medicine, and Pharmacy) who want to do health-related research. To qualify, the faculty member must hold a full-time appointment as an assistant or associate professor. The funds may be used for any purpose that will assist the new investigator in conducting an initial exploration of a hypothesis that he or she believes may lead to the development of a full-scale program of research.

Incidental Grants

Limited funds also are 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 secretarial assistance for specific research projects; for 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 the 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, several research support facilities are funded by University supported development. Such facilities primarily are available to interested graduate students and faculty and are on a time available, for the service basis to those outside the University community. Some financial support is available from the Office of the Vice President for Research for use of the facilities by graduate students. 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 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.

Funding 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, and identification of specific animal or species. Also, questions concerning humane treatment, budgetary considerations, and the University's policy on animal care. Training for investigators concerning proper husbandry and biotechnology is available upon request.

All requests for animals must be initiated through the Animal Care Unit. All protocols involving animals, regardless of funding source, must be approved by the University Animal Care and Use Committee before any study begins.

Computer-Assisted Image Analysis Facility

The Image Analysis Facility provides a unique combination of software, computer-based hardware, and technical expertise for those interested in computer visualization and imaging and molecular modeling. Several commercial, public, and faculty-developed software packages are available, including applications in image processing, graphics modeling, visual prototyping, three-dimensional animation, and molecular modeling.

Image processing applications include digital image acquisition, image enhancement, and image analysis. Images can be digitized from films, video signals, videoconferencing, electron micrographs, autoradiographs, gels, and photographs. Images that have been digitized elsewhere (including images from medical scans) and stored on magnetic media can be transferred into the computer via a magnetic tape drive, a floppy disk drive, internet, or a computer modem.
Once images have been stored on the computer, they can be processed on Silicon Graphics Iris workstations, Macintosh II computers, and IBM PCs. Three-dimensional visualization techniques, such as voxel processing and molecular modeling, can be performed on one of four Silicon Graphics workstations.

The facility has several molecular modeling programs, including FRODO, TIMM, SYLV, MTRIO, Graton Extension, Ribbon, MacMolPlt, Quanta, and Chameleon. University courses and workshops are offered in molecular modeling.

Software developments and consultations are available from the three full-time engineers. Training in techniques and production work also is available.

Electron Microscopy Facility

The Electron Microscopy Facility provides instrumentation and technical assistance to research programs involving the use of light microscopy, laser scanning confocal microscopy, scanning and transmission electron microscopy, and X-ray microanalysis.

Equipment includes the following: a Hitachi S-5700 scanning electron microscope equipped with a cryochamber, backscattered electron detector, and a KEVEX EDS system; a Hitachi S-5400 field emission scanning electron microscope equipped with a backscattered electron detector; Hitachi H-400D and 910000 transmission electron microscopes equipped with STEM and a KEVEX EDS system, a cryochamber, electron diffraction, a helical hexagon sample system, and a rotating specimen holder; a Hitachi H-800-600 laser scanning confocal microscope equipped with a krypton/argon laser, dual detection system, optical disc storage, freeze-frame camera, color printer, and a freezing/concentrating stage; a Zeiss 301 X-ray fluorescent apparatus; an Automatic sample tissue processor; a Hitachi S-400 SEM dehydrator; a Hitachi critical point dryer; an emulsion maker; a fuji rapid electrophoresis apparatus; a negative film printer; a Noritsu rapid film printer; and four Beckman ultracentrifuges, including a UC-50 ultracentrifuge apparatus.

A.C. microscope objectives, as Carl Zeiss Vitaphot; a fletcher quicklock; LKB glass slide maker; demountable; a Leitz (degan) microscope equipped with brightfield, darkfield, phase, Nomarski DIC, epi-polarization, and epifluorescence microscope, as well as 20mm, Polarmat, and view cameras; a Canon 100 mm; a Hitachi plasma unit; an Emitech carbon coater; a Hitachi vacuum evaporator; a Videocoupe; centrifuge; balances; oven; and three photographic darkrooms equipped with automatic film and print processors.

The facility also provides all the solutions, supplies, and training for investigations involving microscopy, including specialized staining and embedding protocols, as well as metal-coating, cryomicrotomy, cryofixation and cryostat cutting, enzyme cytochemistry, immunocytochemistry, immunohistochemistry, and immunofluorescence, the preparation of essential tissue samples for both TEM and SEM, including from frozen microsamples, and other procedures. A literary containing texts and reviews on various applications of light, 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. Also, all or part of a project can be handled by the facility staff. The facility is available seven days a week, 24 hours a day, on a first-come, first-served basis. It is located in the Eisele Medical Research Building.

High Field Nuclear Magnetic Resonance (NMR) Facility

Three superconducting spectrometers form the basis for the High Field NMR Facility. The Bruker WM-300 spectrometer operates at 300 MHz, and the Bruker-MSL-300 operates at 300 MHz for proton observation. The Bruker AMX-600, operating at 600 MHz, represents the most advanced commercially available NMR spectrometer. Very high spectral resolution and sensitivity can be achieved for structure determination of compact molecules. All three instruments are fully multifrequency and have variable temperature capabilities. Virtually any multipurpose two-dimensional experiment can be performed on the spectrometers.

Hard disk, floppy disk, and tape drives provide data storage. Off-line data processing is available on silicon graphics or DEC-based computers. Proton NMR spectra are recorded in 5mm, 10mm, or 20mm tubes. Carbon-13 observations is possible with a combination of proton and either Fourier or phosphorus decoupling. Solid-state NMR 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 technician, whereas hands-on use is encouraged for the frequent user after an appropriate training period. The facility is located in the southern walkway area of the Chemistry Biology Building.

High Resolution Mass Spectrometry Facility

The High Resolution Mass Spectrometry Facility is located in the Chemistry Biology Building, providing the capability for high-resolution mass spectrometry. Through the utilization of this facility, information about the molecular weights, elemental composition, and molecular structure of organic, biological, and synthetic molecules can be obtained (to 6000 a.m.u.). The most important of these is the capability to mass chromatography/mass spectrometry, fast atom bombardment mass spectrometry, and conventional mass spectrometry.

Gas chromatography/mass spectrometry (GC/MS) permits the analysis of 80 components of any complex mixture that can be separated by gas chromatography. This technique is especially useful in research projects that require the analysis of complex samples, such as environmental studies. Fast atom bombardment mass spectrometry (FABMS) permits the analysis of large, polar, or involatile compounds that cannot usually be studied by other mass spectrometric methods. FABMS is particularly useful for biologically important compounds such as proteins, nucleic acids, oligosaccharides, antibiotics, and toxins.

High resolution mass spectrometry provides extremely accurate mass measurements that permit assignment of probable elemental composition for any molecular ion or fragment. Analysis of molecular ions in this manner generally provides better accuracy and requires less sample than any other method of elemental analysis. This technique can be applied even if the sample is impure.

The facility houses three mass spectrometers: a VG 7400 high-resolution mass spectrometer, which is interfaced to a Varian-pecan LE-100 high-resolution mass spectrometer, a VG 7400 mass spectrometer. The VG 7400 mass spectrometer is made in all of these modes of operation. The third, a VG-TRIO-3 triple quadrupole mass spectrometer interfaced to a VG 5700 GC/MS and a DEC PDP 11/33 data system, permits (GC/MS) and FAB experiments. MS/MS techniques used for structure elucidation experiments can be applied in all modes. The third instrument, a VG-TRIO-3 single quadrupole mass spectrometer, is interfaced to an HP 5890A GC and an INTEL 286/387 computer. The TRIO is available for routine, low-resolution GC, and GC/MS experiments. The user-friendly nature of the TRIO-1 data system permits hands-on sample analysis after a short orientation period in the presence of the user's data. A large scale fermentation facility is located in the Bowen Science Building, making possible the large scale growth and recovery of such microorganisms as yeasts and bacteria.

With its sophisticated growth, monitoring, and measurement techniques, the facility is one of only four medium to large-scale facilities in the country capable of growing thermophilic bacteria and is one of only five or six such facilities also capable of growing extremely thermophilic bacteria at 70-100 degrees C.

The director of the facility is available for consultation on medium composition, fermentor conditions, growth, measurement, and fermentation. Further services are provided in areas such as inoculum preparation, medium preparation, fermentation, process optimization, inoculum growth (if required), and harvesting. Users can arrange for research project studies to reflect the capabilities and other relevant technical and scientific services.

Social Science Institute

The University of Iowa Social Science Institute (SII) is a research and teaching facility that supports the work of faculty and graduate students in a variety of departments on campus.
Located in Gilmour Hall, the Division of Sponsored Programs maximizes information on federal and confidential sources of funding for study and research projects by faculty, staff, and graduate students. The division assists and potential support; helps faculty, staff, and students pursue funding opportunities; and matches proposed projects with potential funding agencies. Staff members specialize in major funding programs.

The division maintains files on all federal agencies’ programs, complete with proposed 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.

The division’s resource center, also located in Gilmour Hall, maintains a massive list of potential foundations and conventions that support college and humanities. Among the center’s many resources are general directories of available grants, fellowships, and scholarships, as well as directories aimed at special populations and interests. Annual reports of private foundations; and directories of federal agencies and foundations, along with gazettes and updates for American support. The center maintains an online component database of information on more than 1,600 national programs of interest to University community. Customized searches can be performed to determine funding sources for proposed programs.

The division staff keeps the University community informed of new funding opportunities, changes in programs, grants, policies, and perspectives through:

- individual contact, either by telephone, e-mail, or consultation.

“A Research News,” published in the University’s faculty/staff newsletter;

- weekly bulletins from the University Business Office, which lists all government requests for proposals (RFPs) and requests for qualifications (RFQs); the director sends copies of RFPs in response to specific requests from internal administrative approval forms for program support.

- personalized interest profiles developed through surveys for the purpose of matching opportunities and support to faculty and students;

- faculty/staff member profiles maintained in a database with faculty members’ interests; profiles remain current via periodic updating.

Development of proposals, monitoring the process of proposal development, and reporting research results in a timely manner 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 smooth and efficient.

Sponsored programs staff members guide investigators through the development process and, upon request, help estimate budgets, prepare proposal drafts, and answer and maintain contact with funding agencies.

The Division of Sponsored Programs is responsible for interpreting regulations that affect research activities. It also has major responsibilities for maintaining compliance of researchers who oversee federal programs.

Sponsored Programs

The Division of Sponsored Programs is responsible for interpreting regulations that affect research activities.

Oakdale Research Campus

The Oakdale Research Campus is administered by the Office of Vice President for Research. It has 500 acres of land and 51 buildings located within the campus limits of Indiana, approximately seven miles northwest of the main University campus. The Oakdale campus is accessible by interstate andSeveral divided highways. Approximately 800 researchers, scientists, students, patrons, staff, entmcns, conferences, and visitors use the campus daily.

During the past decade, the campus has evolved from a period of patient care to a diversified research and educational complex. Most of its programs are the result of a partnership between the University and colleges and major departments. Among these are the College of Veterinary Medicine, University of Agricultural and Biological Sciences, and the College of Veterinary Medicine, University of Veterinary Medicine, and the College of Veterinary Medicine.

New programs added during the past several years include the Institute of Public Affairs, Center for Illinois, the Library, the Center for Health Services, the College of Veterinary Medicine, the University of Illinois, and the University of Illinois, the College of Veterinary Medicine, the College of Veterinary Medicine, and the College of Veterinary Medicine.

Also located on the Oakdale campus is the Oakdale Research Park, the Technology Innovation Center. The University of Illinois Research Foundation, the Center for Advanced Studies, and the National Laboratory, all of which are described in this section of the Campus.

Oakdale Research Park

The University of Illinois Oakdale Research Park offers businesses engaged in basic and development research, product development, and production (both research and development) to a diversified workforce with academic backgrounds.

Located on the Oakdale Research Campus, the park includes a multifaceted building designed to meet the needs of growing companies emerging from the Technology Innovation Center, small- and medium-scale research and development firms, and research units of larger, established firms.

The University also liaisoned the park to the organizations that want to construct and occupy separate facilities. Sites of varying size and proximity are available to meet various corporate needs.

Technology Innovation Center

The University of Illinois Technology Innovation Center (TIC) offers a range of services and facilities designed to foster the development of new businesses—particularly those that make use of advanced technologies.
services at the center are tailored to the needs of entrepreneurs and start-ups. 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 Odum, Research Campus, TIC provides comprehensive, cost-effective work space, where collaborations between academic scientists and 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 consultants and computer-based tools such as management, marketing, and finance.

The University of Iowa Research Foundation

The University of Iowa Research Foundation (UIRF) believes that transforming intellectual discoveries 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, employees, and students who wish to elect ideas, inventions, and discoveries that may be of benefit to the public.

Following disclosure, the UIRF helps these researchers license and patent their inventions. The center also supports the development of technologies developed by University researchers that have been patented or are available for licensing and distributes this information in the business community.

Center for Advanced Studies

The Center for Advanced Studies, both a plan and a program at the center, is designed to: (1) attract from a broad range of disciplines and institutions to promote interesting and powerful scholarship. Located on the Odum Research Campus, the center provides opportunities for visiting scholars, as small teams, or in larger seminars—to reflect, write, and exchange ideas.

Applicants for scholarships are available for summer sessions or fall or spring semesters. Many scholars are supported for major grants and fellowships or University of Iowa awards; others have seeking obligations but are on schedules that allow time for central-based research. The center also has special interest in enriching the faculty of the two and four-year colleges in the Iowa region.

The center sponsors several competitive grants programs. Some are ongoing at the University and statewide. The center is available for independent research, organized each year on an interdisciplinary theme. Interdisciplinary Research Grants support University of Iowa faculty members on working collaboratively on a research project in the Center.

The Rockefeller Child Research Seed Office support studies leading to the well-being of children.

Center for Health Effects of Environmental Contaminants

The Center for Health Effects of Environmental Contaminants strives to provide education and training to health professionals and to students and researchers on the complex issues of environmental health.

The center provides study programs, conferences, workshops, and seminars on environmental health topics. The center also offers research opportunities for students and faculty members.

The center is dedicated to promoting and advancing environmental health education and research. The center collaborates with other institutions and organizations to achieve its goals.

Center for Biocatalysis and Bioprocessing

The center focuses on biocatalysis and bioprocessing research and encourages complementary interactions and communication between University of Iowa scientists and biotechnology industries. Its primary aim is to attract industrial attention in the state of Iowa and to provide highly educated personnel for biotechnology industries. The center also provides strong input and leadership in strengthening and creating new interdisciplinary cooperative opportunities at the University.

Faculty scholars from six departments of four University colleges participate in the following general research areas: fundamental properties of biocatalysis, depolymerization of biopolymers and technology to isolate and purify catalysts prepared by biocatalysis, discovery of new biocatalysts, applications of biocatalysis (syntheses of chemicals, biocatalysis for biotechnology, development of biocatalytic agents), and biocatalysis.

Graduate students interested in applying for admission to the Biocatalysis Engineering Program must apply to the graduate program in biochemistry, chemical and biochemical engineering, chemistry, civil and environmental engineering, and environmental health and toxicological sciences, or microbiology; or they must contact the Center for Biocatalysis and Bioprocessing.

Center for Global and Regional Environmental Research

The Center for Global and Regional Environmental Research promotes interdisciplinary study of the physical, chemical, and biological processes that influence the earth's climate and weather, and the relationship between the environment and society.

The center aims to promote the understanding and management of global climate change, including the role of human activities in climate change, and the implications of climate change for society.

The center's primary goal is to evaluate the effects and interactions of global change on the earth's systems and ecosystems and to develop strategies for addressing global change.

The center also conducts research on the impacts of global change on ecosystems, biodiversity, and human health.

Office of the State Archaeologist

The Office of the State Archaeologist (OSA) conducts archaeological work that focuses on development, preservation, and protection of Iowa's cultural and historical resources. The OSA is responsible for assessing and preserving archaeological sites and resources in Iowa. The OSA is also responsible for conducting archaeological fieldwork on land owned by the state.
The OSA conducts research, educational, and service activities throughout the state and provides consulting services for agencies, municipalities, and firms that need archaeological expertise. Its fieldwork emphasizes archaeological survey and evaluation of development areas, such as new highway corridors, to identify resources on threatened sites. It also provides field schools, research workshops, and cooperative research projects with other departments and agencies. Through OSA, University of Iowa students engage in a variety of laboratory and field activities.

Staff members of OSA collaborate on research projects with the Departments of Anthropology and Geology; with their colleagues in the Iowa Quaternary Studies Group; and with professionals in zoology.

OSA resources include more than 2,000 anonymous artifact collections; maps around the state; comparative and type collections that aid in identifying archeological material; extensive archive and document holdings; Iowa archeology and research subject areas, and field equipment that supports large-scale archaeological investigations. U.I. members of the University community and the public are welcome to visit the OSA. OSA office, laboratories, and document collection are on the location.

Woog Computing Center

The G. F. Woog Computing Center (WCC), located in the main library, provides research and instructional computing facilities to aid in teaching, learning, and staff at the University of Iowa.

WCC maintains systems capable of wide variety of applications. These facilities are accessible through networks and terminals and available to faculty, staff, and students. WCC provides the University community and the public are welcome to visit the WCC.

WCC provides on-site and remote access to the Internet and BITNET networks.

WCC's Networks Services Office plans, manages, consults, and manages services for departmental networks. It also provides psychological counseling and engineering management for campus research-based applications.

WCC's Personal Computing Support Center provides software and hardware support for campus computing projects. It also provides support for the campus computer services.

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Personal computers are available for use by University students, faculty, and staff in several Instructional Technology Centers on campus. These centers are supported by WCC and the University of Iowa Department of Public Service.

Numerous educational seminars and workshops on current computer use are available on an ongoing basis. Specialized consultation also is provided for equipment and software services.

The University of Iowa is a member of the University of Iowa and is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP). The Center of Excellence in the University of Iowa is a member of the Great Lakes Biogeography Project (GLBP).

Research and Interdisciplinary Activities - Special Resources at Iowa
breaths, insects, trees, and vegetables; studies of glacial geology, geomorphology, and stratigraphy; dairy and sugar; and the Archeological and Ethnological Societies and their environment and 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 Coast.

Facilities available on campus include all-weather and hard-surfaced running tracks, links for bicycles and motorcycles, and a variety of sports and recreation areas.

The Museum of Natural History and Historical Departments have a number of important reference collections, including the Paleontological Repository (two million specimens including both vertebrates and invertebrates) and the Herbarium over 400,000 specimens of vascular plants and about 45,000 species of mosses. The Office of the State Archaeological Research at the State Archaeological Repository has over half a million excavations. Other specialized collections of more than 5,000 fossils and more than 1,300 vertebrae are available.

Departmental branches of the Biology have extensive collections of books and journals in the biological and environmental sciences.

Students may design programs that result in a degree from one of the cooperating departments. They may start at the undergraduate level, extend the course work, research, and consultation with one or more other departments. A variety of sections, the Graduate Field Group, offers a forum for discussion of research topics in graduate studies.

Financial Support

Graduate assistantships are available from the departments of Biological Sciences, Geography, Geology, and Statistics. Additional Scholarships are available from the Department of Chemistry and the Chemistry Department.

Further information, particularly about the Department of Biological Sciences, is available from the Director of the Department of Biological Sciences.
Research and Interdisciplinary Activities • Special Resources at Iowa

Science Education Center: College of Education
Small Business Development Center: College of Business Administration

Laboratories
Bone Healing Research Laboratory: College of Medicine
Iowa Lakeside Laboratory: College of Liberal Arts
Orthopaedic Biochemistry and Cell Biology Laboratory: College of Medicine
Orthopaedic Biomechanics Laboratory: College of Medicine
Translation Laboratory: Division of Continuing Education

Others
Bioethics Program: College of Medicine
False and Genic Disorders Unit: College of Medicine
Collaborative Studies of Allergic Disorders: College of Medicine
Diabetes Control and Complications Trials: College of Medicine
Gerontology Projects: College of Liberal Arts
Iowa Lakes Research Project: College of Liberal Arts
Iowa Teaching Nursing Home: College of Medicine
Iowa Testing Program: College of Education
Office for Rural Education Policy and Planning: College of Education
Pharmaceutical Service: College of Pharmacy
University Examination and Evaluation Service: Office of Academic Affairs

Center for International and Comparative Studies
The Center for International and Comparative Studies (CICS) coordinates, promotes, and supports interdisciplinary international studies at The University of Iowa. A Title VI National Resource Center on International Studies, one of only 13 such centers in the United States, CICS serves the university, the region, and the nation in making available the University's human and bibliographic resources through conferences and lectures, publications, training programs, instruction, and research. Within the University, the center extends financial support to existing international programs and encourages institutional innovation and the enhancement of international studies. It supports faculty, staff and student research; undergraduate and graduate instructional programs; and public programs and outreach activities. Its constituent and affiliated programs are represented by faculty, staff, and students from all ten colleges of the University and each department in the University of Iowa.

The center is administered by a full-time faculty director, a high-level associate director, a full-time coordinator of undergraduate programs and an executive committee. CICS offices and classrooms are located in the Continental Center. The center is linked administratively to the Office of the Vice President for Academic Affairs.

Interdisciplinary Programs
Eight interdisciplinary programs are represented in CICS: Four promote instruction and research with a geographical focus: the African Studies Program (ASP), the Asian Studies Program (ASP), the Latin American Studies Program (LAS), and the Russian, East European, and Eurasian Studies Program (REEES). There is also a program associated with the Global Studies Program, the Program for International Communication Studies (PICS), the Program for International Development (PID), and Women's International Development (WID).

The center also houses offices with eight affiliated programs: the Ames, Arkansas, and Traditional Technologies in Development Project, the Development Support Communication Program, the Foreign Language Assessment Program, the International Health Program, the Center for Asian and Pacific Studies, the International and Developmental Research Program, the International and Comparative Law Program, and the Program for Advanced Study of Art and Life in Africa.

International Research
The center supports research and curriculum development grants to faculty and staff, Language and Area Studies Fellowships to graduate students, and international research fellowships to undergraduate scholars. It supports research projects in Africa, Asia, Europe, Latin America, China, and other parts of the world. The center supports faculty and staff exchanges, technical assistance, development consultancies, and internships. In cooperation with the University of Iowa Libraries, the institute also publishes its own periodical, the Iowa International Review.

Iowa Lakeside Laboratory
The Iowa Lakeside Laboratory, a field station for the biological and physical sciences on Lake Okoboji in northwest Iowa, is one of a cooperative program in teaching and research carried on under the support of Iowa State University, the University of Northern Iowa, and The University of Iowa. Two terms of five weeks each are held during July, June, and August. Facilities for research and study are available at the "Iowa Lakeside Laboratory" in the Cubicle of Liberal Arts Center of the University.
Traditionally, the strength of a library system has been measured in the size of its volume base. But because of the substantially increasing geometric growth in recorded information, and because of aspiring resources available to acquire this information, it is expected that an increasingly important measure of library effectiveness will be the staff's ability to identify ownership of material in both local and and to borrow the material in a timely basis.

The University of Iowa Libraries is a member of several consortiums: the Research Libraries Group, the Iowa Computer Network, the National Library of Medicine's Regional Medical Library Network, a resource-sharing network for the CIC institutions (the Big Ten), and the University of Chicago. Through these organizations, and expansion through the Research Libraries Group, faculty and staff at Iowa have gained greatly enhanced access to material held at other institutions.

The University of Iowa Libraries

The University of Iowa plays a major role in the preparation of health professionals for Iowa and the nation. In its health science center, the University of Iowa Libraries is found the academic programs, clinical facilities, and service agencies to provide students and practitioners to serve a wide spectrum of human health needs ranging from the newborn to the most advanced diagnostic and treatment procedures—and is search for entirely new knowledge.

As soon as they have acquired basic knowledge in the classroom, students are rushed through such basic medical knowledge to learning by doing. The following examples illustrate the accelerated pace which today's medical school student must complete the necessary material which the student is to learn, before he is ready to practice medicine. The student is taught in the clinical settings, clinics, and hospitals by the practicing physicians and medical staff who have the best of the world's medical knowledge.

The University of Iowa Libraries is a center for the training of medical students, and it is one of the most advanced, comprehensive health science centers in the United States.

It shares many skills offers campus through cooperative programs with other colleges and medical schools. It is one of the most advanced, comprehensive health science centers in the United States.

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Counsel on Speech Pathology and Audiology

The council coordinates clinical services and training in speech-language pathology and audiology for the University of Iowa Hospitals and Clinics (Division of Developmental Disabilities, Department of Pediatrics, Children's Health Specialty Clinics, Department of Psychology—Child Psychology 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 Health Bureau

The University of Iowa Dental Health Bureau is a branch of the Dental Health Bureau of the Iowa Department of Public Health. The bureau's primary purpose is to promote the dental health of Iowans through planning, organizing, and providing support services. The bureau promotes dental health education among all age groups, through school and other settings. It conducts TEAM dental programs at Iowa elementary schools with the assistance of University of Iowa senior dental hygiene students, who, under the supervision of public health dentists, offer dental health instruction to more than 6,000 Iowa public school students each year.

Dental health programs, good dental hygiene, precision, a fluoride program, and nutrition are all related to dental health. The bureau provides technical assistance and consultation to local agencies, which contact the Iowa Department of Public Health to provide primary oral preventive health care to mothers and children. The bureau monitors dental referral work and dental service referrals available for schools and dental offices. The Iowa Department of Public Health provides personnel, supplies, equipment, and support for the bureau; the University provides office space and equipment.

Oakdale Research Campus

Located seven miles northwest of Iowa City, the 500-acre University of Iowa Oakdale Research Campus is adjacent to the new Oakdale Research Park. Health-related programs based on the campus are the Cardiovascular Center, Center for Clinical Studies, Institute of Agriculture and Natural Resources: Occupational Health, Regional Cancer Treatment Center, Iowa Drug Information Service, Iowa Substance Abuse Consortium, Women's Health Study, Institute of Health Behavioral and Environmental Policy, and Center for Health Effects of Environmental Contaminants.

As part of The University of Iowa Library, the Marvin Library serves the Oakdale automated library system. All materials acquired since 1920 are catalogued in OCLC, as are all current periodicals and many items still being processed for collections.

Ronald McDonald House

In July 1985, a 31-bedroom Ronald McDonald House opened to provide living quarters for families of seriously ill children receiving medical treatment at the University of Iowa Hospitals and Clinics and the University of Iowa. Opened in 1984 in Iowa City, many of these children and their families must travel long distances from their homes. To help make these families' time easier, a group of parents, volunteers, University Hospital staff members, and McDonald's restaurant owners established the Children's Family Living Foundation, a not-for-profit corporation. The corporation helped plan and raise funds for the house, and once the University property was bought, more than 12,000 families have stayed at this home away from home.

University (State) Hygienic Laboratory

One of the University’s commodity health services, the University Hygienic Laboratory directs much of the effort toward environmental monitoring and the analysis of Iowa's environmental and public health information, as well as diagnosing, detecting, and controlling various insect vectors, bacteria, viruses, and fungi. The laboratory also conducts surveys and provides advice to other agencies and researchers.

As part of The University of Iowa Library, the Marvin Library serves the Oakdale automated library system. All materials acquired since 1920 are catalogued in OCLC, as are all current periodicals and many items still being processed for collections.
mycology, virology, organic chemistry, and radiation chemistry. It provides complete laboratory program support to the State Department of Health, the Bureau of Labor, and the Department of Natural Resources.

The laboratory provides a wide variety of environmental services such as water, wastewater, hazardous waste, and air quality monitoring and analysis. Analytical and physical-chemical and microbiological analysis are also performed. The laboratory also provides environmental and clinical services for the Department of Health, the Bureau of Labor, and the Department of Natural Resources.

The laboratory serves as Illinois' primary laboratory for drinking water analysis and is one of the few laboratories in the nation that meet specific criteria to perform analyses for hazardous waste also under the USEPA, Superfund Program. It is an accredited industrial hygiene laboratory and holds an license permitting acceptance of human specimens for blood lead screening, screening for newborn metabolic errors, and for the AIDS virus (HIV).

Within The University of Iowa, the University Hygienic Laboratory provides instruction and training in diagnostic technology and testing as part of regular academic courses, as well as in environmental engineering studies. In addition, the laboratory provides classroom and individual bench training to University students and to laboratory and medical personal in training specific laboratory procedures. Laboratory staff members also are available to University faculty, health care staff, and institutions across the state.

Specialized Child Health Services

The Iowa Specialty Child Health Services is an organization that develops and administers several supervisory health services for children. Among these are the Genetic Counseling Service, the Muscular Dystrophy Prevention Program, the Cystic Fibrosis Program, the Childhood Cancer Diagnostic and Treatment Program, the Rare Comprehensive Care Program for Complex Patients, the Statewide Perinatal Care Program, Iowa's Newborn Screening Program, the University Child Health Center Program, and a program of the Regional Perinatal Center.

At Regional Child Health Specialty Clinics (RCHSC) conducted in communities throughout the state, Iowa residents are provided with diagnosis and evaluation services in pediatrics, orthopaedics, oculoplastic surgery, psychology, audiology, physical therapy, nutrition, and clinical and educational psychology. RCHSC also provides monitoring and follow-up services on special health problems related to handicaps such as muscular dystrophy, mental retardation, phenylketonuria, and hemophilia.

University Hospital School

As Iowa's UniversityAffiliated program for children and young adults with developmental disabilities, the University Hospital School offers clinical services under the auspices of the Division of Developmental Disabilities within the Department of Pediatrics. Its services are a component of the University's Health services of The University of Iowa Hospitals and Clinics.

Interdisciplinary staff in the disciplines of medicine, dentistry, education, nursing, nutrition, physical and occupational therapy, rehabilitation engineering, recreational therapy, psychology, social work, speech pathology and audiology, work with clients.

Occupational services provide comprehensive evaluation of the disabilities of infants, children, and young adults. Programs to enhance function and quality of life are recommended in consultation with the patient and, when appropriate, his family members, and community service providers. Consistency with local services is high priority. Special clinics include the Child Development Clinic, the Neurodevelopmental Clinic, the Pediatric Disorders Management Clinic, Infant and Young Child Clinic, and Child and Young Adult Clinic.

Short-term admissions to the inpatient unit may be arranged for relatively specific goals that can not be accomplished on an outpatient basis. The staff coordinates educational and community services for children and young adults.

The Iowa University Affiliated Program cooperates with a variety of state, regional, and local agencies to provide services for persons with disabilities. Public assistance is also available, and information is also available to a variety of educational and related activities for students. For community service providers, and for others. These activities include clinical evaluation, treatment, consultation, and educational services. They may take place at the University or at a community site.

Lodestore of the Department of Pediatrics, University Hospital.

Nestled in the University Hospital School.

Wendell Johnson Speech and Hearing Clinic

Located in the Wendell Johnson Speech and Hearing Center, the clinic provides evaluation and consultation for individuals with speech, language, or hearing impairments. Evaluation and consultation programs for persons who can come to the clinic for each service; a summer residential program for children with speech, language, hearing, and reading problems, and clinical programs for university 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 devices, provided to University of Iowa students at cost plus handling expenses. Services include diagnostic evaluations, consultations, individual and small group audiological, speech, and hearing aid, programs, 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 society sponsored 200 bed facility, which serves as a teaching intern medical center for the Veterans Affairs Medical Center at Knoxville and Des Moines. The VA employed clinic in Polk, Tama, and the 235,130 interscience field. As a primary care service of Iowa and Wisconsin clinical care. A large number of VA patients are treated. Programs and services are offered, with some 8,600 admissions and 12,000 outpatient visits made to the center annually.

The Veterans Affairs Medical Center, formally affiliated with the University's basic health science surgical, offers unique training opportunities in clinical pharmacology, geriatric medicine, cardiology, radiology, oncology, and applied immunology. Modernization and construction of a new emergency care clinic has resulted in the latest facilities for radiology, nuclear medicine, critical care, and rehabilitation. A new outpatient clinic is open in Des Moines in 1992. It will function as a satellite clinic of the Fort Snell clinic and as an extension of the University's health care services.

Research also plays a major role in the medical center. A major research area is shown in the Gerontology Research Center (USABC), National Cardiovascular Laboratories, and Cardiopulmonary Research Laboratories. It aims for the top five annually in VA research funding.

The Iowa Center for the Arts

Located on the west bank of the Iowa River, the University of Iowa campus, the Iowa Center for the Arts is one of the nation's leading centers for education and research not only for the University community but for the entire state and the nation. The center, which opened in 1985, is an example of the innovative use of space to bring the arts together in a single campus setting, setting the the geographical heart of the University.

The arts center facilities include many of the academic arts units in the College of Liberal Arts, together with performance and exhibition spaces in the Theatre Building, Music Building, School of Art and Art History, the Museum of Mr. and Ms. 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. Routinely support many sources, both public and private, is reflected in the financial.
School of Art and Art History

The University of Iowa School of Art and Art History has a long history in the arts, having been founded in 1909. The school has produced many notable artists and art historians, and is home to the University of Iowa Art Museum, which houses one of the largest and most diverse collections of American and European art in the world.

Museum of Art

As one of the largest art museums in the United States, the University of Iowa Museum of Art (UIMA) recognizes its responsibility to serve a vast statewide audience. Although its primary constituency is the University community, especially students and their families, the museum's reputation and growing permanent collection attract a national and international audience as well. The UIMA collection of more than 9,000 objects has three notable strengths: Latin American art, American and African art, and photography. The museum's extensive permanent collection is augmented by traveling exhibitions and special exhibitions that offer a wide range of ideas and experiences.

Iowa’s University Theaters

Iowa’s University Theaters is the production arm of the University of Iowa. It is dedicated to the production and performance of new and original work in the arts. The theater is housed in the University of Iowa Center for the Performing Arts, which is located on the campus of the University of Iowa in Iowa City, Iowa. The theater presents a wide range of productions, including plays, musicals, and dance performances. The theater is also home to the University of Iowa School of Music, which offers undergraduate and graduate programs in music performance, composition, and music education.

Theatre Building

The Theatre Building is one of the few educational theatre complexes in the country, housing four theaters and an arts center for student and community use. The building includes a 500-seat theater, a 150-seat auditorium, a 100-seat black box theater, a 40-seat dance studio, and a 200-seat rehearsal space. The Theatre Building is a state-of-the-art facility that provides a range of spaces for students and community members to use for production, rehearsal, and other arts-related activities.
the talents and resources of other units of the Iowa Center for the Arts, particularly Dance.

The School of Music is at the vanguard of inspiration in the arts, creating and performing works in new forms. Its Center for New Music, originally housed by the Rockefeller Foundation, is a laboratory and extension of the composition area. Faculty and student musicians of the Center for New Music form a repertory ensemble for the performance of both new composition and traditional works of the twentieth century. The Composer Workshops have established the creative workshop concept that was pioneered by the library into the development of young composers.

Two experimental music studios provide a wide range of technical capability for creating audio-visual 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 School of Music/Hancher Auditorium complex with a central recording studio inside the School of Music. The digital recording capability of the School of Music has been used to produce commercial compact discs by major artists.

Hancher Auditorium

Hancher Auditorium is a regional and national cultural resource of the mid-Atlantic. The 2,644-seat facility opened in 1972 and in its first two decades has hosted audiences of nearly three million people. The auditorium is fully accessible and is wheelchair friendly. Hancher also has one of the nation's finest stage backdrops, Kinetic Quatro, Lautie Andelson, and Philip C. Lee. National tours of major performers, such as the Broadway hit in 1991 original performances of Les Misérables broke all Hancher box office records.

Hancher has highlighted international performances, including the electrifying Japanese drummer Kodo, the Dance Company of Senegal, and the South Africa-based company Two of the Things. On the Women, You Name the Rock from jazz to chamber to symphony Music from Shakespeare Lennovo to Flying Opera and the Polka Acrobats, Hancher presents the fullest range of the world's performing arts.

Hancher also has been a vibrant catalyst for artistic creativity. In 1967, the auditorium sponsored The Jeffrey Druza's production The Nutcracker, which had its world premiere at the Hancher stage. The auditorium also has commissioned important new works for The Paradise Dances, The Pauline Kaeble Ensemble, The Kronos Quartet, the Laura Dean Dance Company, and other artists. Hancher has been the primary sponsor of the Iowa Dance Residencies Program, which brings important contemporary companies for extended residencies including workshops, master classes, and performances in communities throughout the region.

The auditorium has a midwestern flavor. Hancher's lobby, a cafe and gift shop, existent acoustics, and a surrounding patio in its modern design make it one of the finest concert halls in America. But it is much more than a showplace. It also is a splendid educational facility, designed as an extension of the classroom and laboratory facilities of all of the performing areas of the Iowa Center for the Arts.

For students and the various theater arts, the auditorium has sparked scene construction and costume shops, nearly 50 seats for rigging for scenery changes, and a sophisticated lighting control and sound system. For music students, Hancher is an on-campus treasure chest that can be visited quickly on stage for various concert engagements. University students are entitled to purchase tickets at reduced prices. Nonstudent patrons require interior auditorium events from a wide range in Iowa and western Illinois.

Theatre Department

The Department of Dance, housed in Halsey Hall, supports some of the finest facilities in the nation: six studios, two classrooms, audio-visual computer rooms, and a 2,500-seat prototyping and performing space in North Hall. Teaching responsibilities are shared by seven full-time faculty and six to ten teaching assistants. Ninety percent of the technique classes are accompanied by a staff of non- full-time and several part-time instructors, and a full-time technical director directs all of the department's production needs.

Students in the department have many opportunities to perform in the university. The University of Iowa touring company "Iowa in Motion" (a company within with the Arts Education/Outreach Program), the yearly Dance Gala held in Halsey Hall, Senior, Senior, and Senior, and specific concerns in the Dance Department's Space/Place Theater, the School of Music spring and summer concert engagement, and the Dramatic Theatre in cooperation with the Department of Theatre Arts, and community performances.

Teaching opportunities for graduate and undergraduate students can be found within the Arts Education/Outreach Programs, Senior Dance Programs, Senior and Senior, and undergraduate opportunities.

By attending nearly every nationally known concert to perform in the theater, Hancher Auditorium in an invaluable resource for dance students. The university can use almost any new work or performance style to enhance, observe, and take master classes from touring companies.

For the past 13 years, the department has participated in the American College Dance Festival Association (ACDA) National and hosted them in 1981 and 1992.

Media Studies and Film

A division of the Department of Communication Studies, Media Studies and Film explores artistic and scholarly work in electronic and visual media arts. This program includes video and film production and work with artists in other units of the Iowa Center for the Arts as part of the student's consistent visual and aural experiences. The individuals produce videos of music videos using video and film production facilities and the University's video association with the Opera Theater of St. Paul. The program is structured to meet the needs of students in addition to 'programming throughout the state, the Arts Festival' Outreach offices schedules on campus and throughout the state, and the department's production needs.

Writers and Media Studies

The department's aspiring students work with students in English, the Writers' Workshop produces one of the nation's best writing workshops in the arts and letters, and established poets and film writers.

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MUSEUM OF NATURAL HISTORY

The Museum of Natural History, located in MacCracken Hall, is an outgrowth of the Calumet Museum of Natural History, established in 1938 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 disciplines of the University, the Museum of Natural History provides a repository and a proper case 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 of Natural History, a department in the College of Liberal Arts, also supports a museum studies program that provides instruction in the history, philosophy, operations, and management of museums.

The museum's Iowa Hall gallery features 60 evolutionary exhibits based on space, theme, and time, illustrating Iowa’s natural heritage—in geology, native culture, and ecology. Exhibits highlight Iowa Hall include the Monetpetosaurus, Dinosaur room, Mistyvalley, and a 3-D reconstruction of an Ice Age ground sloth.

In first hall, the Lassen Island ecosystem is a large and well-known tidal exhibit comprising a complete representation of a tidal island ecosystem. The exhibits include the Orcas, Norwegian seawater, and more and are on the South Dakota plains. The exhibit includes both the smell of the sea and the view of the island created as it appears on the plains during migration. The exhibits include several features such as a giant whale, bison, moose, reindeer, mule deer, and a wide variety of marine life, including several 47-foot-long dales of the nearby Atlantic Ocean.

The major interpretive pieces are represented in several exhibits and include familiar groups such as the sea, the wind, the water, the weather, and climate, sea, rain, and ice. Ethnological exhibits in the museum present artifacts from many parts of the world. Indian and Eskimo artifacts, including beaded work and carvings, from the Arctic region, are exhibited. Thebere are also many human figures. Through 15 million years of history are presented in a display featuring replicas of fossils remains from Africa, Asia, and Europe.

Curated groups focus on outdoor halls are offered daily and can be arranged by advance notification. The Museum of Natural History also supports informal outreach programming to area schools and sponsors a weekend series and field trip series for the general public.

OLD CAPITAL

Iowa’s Old Capitol, a National Historic Landmark, has served Iowa for nearly 150 years as a seat of government and administration. In the early 1840s, it served as Iowa’s first territorial capital from 1843 to 1845, and as the first state capitol from 1846 until 1857, when statehood expansion necessitated a move to Des Moines. Old Capitol then became the University’s first permanent building.

The old Capitol was restored in the 1970's to reflect its history and to serve as a living museum providing space for ongoing University functions. Two rooms have been restored to the 1920’s decor to reflect the University’s long and continuing use. Other rooms have been authentically restored, some with what may be original pieces used by students in the 1940s. One of the building's most unusual features is its rear spiral staircase, which dominates the central hallway. Old Capitol is located on the Pentacrest, at the corner of the University of Iowa campus.

Coastal town and a state preservation effort are required daily without charge. Reservations are required for group tours.

OTHER SERVICES

Evaluation and Examination Service

The Evaluation and Examination Service is a non-profit, independent corporation that helps students and their advisors make decisions related to course selection. In addition, the office provides registration materials and Divisions of Admissions, Financial Aid, Registrars, and Admissions, and Division of Student Affairs, and Division of Financial Assistance.

The exam service supplies, tests, and analysis of class options. The service plan and process course and instructor evaluations, conducts institutional research, prepares reports and technical bulletins, and participates in evaluation and improvement, and provides technical assistance. Students also serve on the questionnaires and design and collection and processing.

Printing Department

The Printing Department is the University’s official printer, serving faculty, staff, and students. The full printing facility offers design, editing, composition, prepressing, proofreading, printing, binding, mailing, color, offsetting, and duplicating services. The department also functions as a service facility for campus publishers, with a wide range of equipment, forms, and software.

Radio Broadcasting Services

WSJ-U and KXLU-FM extend the resources and activities of the University to the people of eastern Iowa with 18 hours of daily broadcasting. The broadcast schedule consists of educational, cultural, and informational programming as well as general entertainment. An affiliate of National Public Radio (NPR), WSJ-U contributes program materials to a national network of more than 300 commercial radio stations. The station's studios and offices are located in the Engineering Building and a free copy of the WSJ-U Program Guide is available.

The University of Iowa Alumni Association

Since its organization in 1876, The University of Iowa Alumni Association has worked to encourage good, informed, and loyal alumni and friends to continue their involvement with the University. In addition to offering traditional programs such as class reunions, the association provides many services. The association sponsors a network of alumni clubs that take the expertise and knowledge of the alumni, recognizes distinguished alumni, and promotes a better understanding of the Alumni Association, to keep in 13,000 members up to date on University news and alumni achievements.

Iowa students are an important part of the Alumni Association’s work on behalf of the University. Not only does the association work to recruit perspective students, it also provides the university Career Information Network for students exploring careers, and it sponsors the Student Alumni Association, who plan and conduct the annual Fall Parents Weekend.

University of Iowa Foundation

The University of Iowa Foundation was organized in 1950 to help the University obtain the necessary financial aid and gifts to continue its development. The foundation is the preferred channel for private gifts to The University of Iowa through annual giving programs, membership class gifts, planned gifts such as bequests and trusts, and capital and other special-purpose campaigns.

The foundation is a nonprofit corporation empowered to solicit and receive gifts and
Office of University Relations

The Office of University Relations (OIR) works to promote understanding of, participation in, and support of the University's mission and activities, both within the University community and among the general public. It seeks to maintain an effective communication program including the use of internal and external media. It serves the University community on major University initiatives, and acts as a liaison to facilitate communication between the central administration and appropriate University, governmental, civic, and other groups.

University Relations programs are implemented through the coordinated efforts of the department's University News Service (UNS) and University Relations Publications (URP). UNS includes staff who specialize in coverage of the performing arts, the health sciences, and women's and minority affairs, as well as general news. Broadcast news, and photography units. These units supply news, photos, and information to print and electronic media; answer requests for information; serve news media in a variety of ways, and assist writers, photographers, and broadcasters who visit the campus.

University Relations Publications publishes Special for alumni and friends of the University, Parent Times for students' parents, By the University's newsletter for faculty and staff in Iowa, focusing on outstanding arts activities; specialized materials for prospective students, in association with the Office of Admissions; and other special and general-interest publications for external audiences.

OIR also serves as the executive office of the Parents Association.

University Ombudsperson

The Office of the University Ombudsperson responds to problems and disputes brought forward by all members of the University community—students, staff, and faculty—that appear amenable through existing channels. The ombudsperson investigates claims of unfair treatment or erroneous procedure and serves as a neutral and detached listener, information resource, advisor, intermediary, and mediator. See "University Ombudsperson" in the Student Life at Iowa section of the Catalog.
The educational programs offered in the College of Liberal Arts provide the necessary foundation for the specialized education or training that many occupations and professions require. They form the basis for graduate work and provide prerequisites for professional study in dentistry, medicine, nursing, pharmacy, business, law, and education. They also provide a general education which, by itself, prepares persons for a broad range of occupations.

Liberal education is geared in the breadth of intellectual development that is offered, but it is not superficial. The College of Liberal Arts offers 60 specific degree programs, each requiring extensive study in a particular academic discipline or area of mixed disciplines. The array of educational programs available in the college gives students a wide choice of major and minor fields of study.

Regardless of the major a student selects, the college curriculum exposes all students in work in logic or quantitative reasoning and in foreign language, and requires cources in writing, speaking, and writing. Further, all students must become acquainted with the study of history, music, visual art, social institutions and fine arts, as well as with civilization and cultures remote in time or space.

These General Education Requirements are designed to enable students to understand the physical world in which they live, the social organizations in which they act, and the values of the civilizations they have inherited. The discovery of scholars and the creative work of artists and writers in this century has greatly expanded our knowledge of natural and social phenomena, and has altered our understandings of the complexity. The modem world no longer seems so inscrutably accidental to understand in it. The philosophizing, however, depends more than ever on acquisition a general education.

It is the mission of the College of Liberal Arts to maintain that general education available and to guide students through the many options they have in choosing a meaningful, comprehensive education that is the price of specialization. It develops the capacity to make significant judgments, to feel answers, to reject objects, to be free of repetition, and to adapt to change.

College Organization

The internal organization of the College of Liberal Arts reflects the multihorizon character. The college is composed of various units, both academic departments, programs, and nondepartmental units. There are two divisions in the college. The Division of Fine Arts examines the School of Art and Architecture, and the Department of Communication Studies, Dance, and Theater Arts. The Department of Computer Science, Mathematics, and Statistics and Actuarial Science make the Division of Natural Sciences. Within the college there are six schools. In addition to the schools of Art and Architecture, there are School of Journalism and Mass Communication, Library and Information Sciences, Religious, and Social Work. More than forty formally organized departments and programs provide instruction in the college and other means leading to one or more degrees, minor, or certification in a particular field.

The College of Liberal Arts is closely linked with the University's professional colleges. Some opportunities in other colleges and schools in liberal arts; similarly, other colleges may award minors for work done in liberal arts.

For example, students admitted to the teacher education program of the College of Education are degree candidates in the College of Liberal Arts. The College of Liberal Arts also provides instruction for preprofessional enrolled in the College of Business Administration, Engineering, Medicine, Nursing, and Pharmacy.

Degrees, minors, certificates, and programs of the College of Liberal Arts are described in full under separate entries in the Catalog.

Liberal Arts Office of Academic Programs

The Liberal Arts Office of Academic Programs is an integral part of the Office of the Dean. Located on the third floor, it serves students who wish to declare or change majors, the second-graduate-option, or request special permission for a non-major signature for internships or cooperative work arrangements, participation in work-study programs, and work-study programs of the College of Liberal Arts. It also provides assistance in the application process for second-graduate programs, late withdrawal of registration, and late withdrawal of registration.

Students interested in the General Education Requirements, graduation requirements, and college policies affecting students, should complete the application for the G.E. R, in the Office of Academic Programs. The Office of General Education Programs also maintains a list of courses that are offered in various college departments and programs. Students are encouraged to contact the Office of Academic Programs for more information. Students attending the University for more than 12 months are required to complete a full-time student registration and to complete the application process for second-graduate programs, late withdrawal of registration, and late withdrawal of registration.

The Office of Academic Programs also considers evidence and recommends appropriate disciplinary action for students whose behavior is consistently in violation of the rules and regulations of the college.

The Office of Academic Programs also provides services to students who have been dismissed from the college. Students who have been dismissed from the college are encouraged to contact the Office of Academic Programs for more information. Students attending the University for more than 12 months are required to complete a full-time student registration and to complete the application process for second-graduate programs, late withdrawal of registration, and late withdrawal of registration.

Honors Program

The University Honors Program offers special academic and extracurricular opportunities to outstanding students. Freshmen and sophomores may take advantage of special honors sections that are offered in some general education courses. At the junior and senior level, honors programs offer honors seminars, independent research opportunities, and honors projects under the guidance of a faculty member. Successful completion of a senior honors project leads to a baccalaureate degree with honors "in the major field." "Honors in the major field" is defined as an average in the senior honors project that is above the average in the major field.

The Theresa Smith House Honors Program is a living and learning community for students in the honors program. It houses a reference library, study lounges, and computer terminals. Each year the Associated Student Government selects a variety of activities—recreational, social, cultural, and academic. Participating students with strong academic records are invited to join the honors program, but any student whose grade-point average meets the required minimum (3.20) may apply at any time.

For further information, see "Honors Program" in the Catalog or contact the Honors Program, Sherburne House Honors Center.

Degrees Offered

Students graduating from the College of Liberal Arts may earn Bachelor of Arts (B.A.), Bachelor of Science (B.S.), Bachelor of Fine Arts (B.F.A.), Bachelor of General Studies (B.G.S.), Bachelor of Liberal Studies (B.L.S.), Bachelor of Music (B.M./M.A.) degrees.

Major Fields

The college contains degrees as listed in the following major fields. The B.G.S. and B.L.S. degrees are awarded with no major designation. Most of the B.G.S. degree is being phased out. Students interested in major study should refer to "Interdisciplinary Studies" in this section of the Catalog.

Actuarial science—B.S.*

African-American studies—B.A.

American studies—B.A.

Ancient civilization—B.A.

Ancient history—B.A.

Asian languages and literatures—B.A.

Asian studies—B.A.

Astronomy—B.A.

Biochemistry—B.S.

Biology—B.S.

Business administration—B.S.

Chemistry—B.A.

Classics—B.A.

Communications studies—B.A.

Computer science—B.S., B.A.

Computer science—B.S.

Data analytics—B.S.

Economics—B.S.

Elementary education—B.A., B.S.

English—B.A.

Exercise science—B.S.*

French—B.A.

Geography—B.A., B.S.

Geology—B.A., B.S.

German—B.A.

Greek—B.A.

Health occupation education—B.A., B.S.

History—B.A.
Liberal Arts

Intemdisciplinary studies—B.A.

Italian—B.A.

Journalism and mass communication—B.A., B.S.*

Latin—B.A.

Leisure studies—B.S.*

Linguistics—B.A.

Literature, science, and the arts—B.A.

Maritime studies—B.A., B.S.

Marxology—B.A.

Music—B.A., B.M.

Philosophy—B.A.

Physical education—B.S.

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.

*Students who wish to major in actuarial science, communication studies, computer science, elementary education, educational science, journalism and mass communication, future studies, or social work must complete an application procedure before they are admitted to the major. Admission to these programs is based on grades in specified prerequisite courses, the cumulative grade-point average, and other criteria.

Majors in Education and Secondary Certification

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 major to one of these fields at any time after enrolling. In order to be eligible to enroll in the courses for an education major or certification, the student must be admitted to the teacher education program (TEP).

To be admitted to the TEP, a student must have attained a satisfactory standing (90 semester hours) and must have earned a total cumulative grade-point average of at least 2.00. Transfer students who meet these standards may be admitted to the TEP upon admission to the University. In order to remain in the TEP, a student must maintain a 2.50 total cumulative grade-point average and a 2.00 grade-point average in The University Core.

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 major in the major requirements in more than one department, and if the departments award the same degree, the student may earn a single bachelor's degree with two or more majors (e.g., a B.A. in biology and English, or a B.A. in sociology). For more information, see "Double Majors" under "Requirements for the Major" in this section of the Catalog.

Specializations within Degree Programs

Many degree-granting units in the college offer internal specializations. Some of these are formal options within degree programs. For example, media studies and film is offered in the Department of Communication Studies, and urban and regional studies is offered in the Department of Geography. Specializations in Chinese, Hindi, Japanese, or Sanskrit are available to students seeking a B.A. in Asian languages and literature. The School of Art and Art History and the School of Music have many different tracks leading to bachelor's degrees: studio music, art history and art, and art education; performance, composition, jazz studies, music education, and music therapy. There are only a few examples of the many options within degree programs.

Other specializations can be developed with the consultation 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; photography and graphic design specialties, with courses taken in the School of Art and Art History and the School of Journalism and Mass Communication; or a specialization in management, with courses taken in the College of Business Administration.

For more information on specializations within and between programs, see the program descriptions in the Catalog and consult with the appropriate department.

Certificates

The College of Liberal Arts offers certificates in Pre-Interdisciplinary programs: African studies; aging studies; global studies; Latin American studies; and philosophies and ethics of politics, law, and economics. A state certificate program, international business, is administered jointly by the College of Business Administration and the College of Liberal Arts.

Certificates require from 18 to 36 semester hours of prescribed course work. Specific requirements are listed in the departmental sections of the Catalog.

Minors

Students may earn minors in more than 50 programs in the College of Liberal Arts or in other colleges at the university. Minors require a minimum of 15 semester hours of core work.

The college offers minors in the following fields: actuarial science, Afro-American studies, aging studies, American studies, ancient civilization, anthropology, art, Asian languages (Chinese, Hindi, Japanese, Sanskrit), area studies, astronomy, biochemistry, classics, communications studies, comparative literature, computer science, dance, economics, English, French, geography, geology, German, global studies, Greek, history, Italian, journalism and mass communication, Latin, Latin American studies, literature, linguistics, mathematics, microbiology, music, philosophy, political education, physics, political science, Portuguese, psychology, religion, Russian, social work, sociology, Spanish, statistic, theatre arts, and women's studies.

The general requirements for minors are described below, under "Minors." Specific requirements are listed in the departmental sections of the Catalog.

Interdisciplinary Programs

A number of interdisciplinary programs in the College of Liberal Arts offer majors, minors, or certificates. These programs include African studies (certificate or option in B.A. in African-American world studies); Afro-American world studies (B.A. or minor); aging studies (minor or certificate); American studies (minor or major); ancient civilizations (B.A. or minor); comparative literature (B.A. or minor); global studies (minor, certificate, or honors interdisciplinary major); interdisciplinary studies (B.A.); international business (certificate); Latin American studies (minor or certificate); literature, science, and the arts (A.B.); philosophies and ethics of politics, law, and economics (B.A.); Russian, East European, and Eurasian studies (B.A.); science education (B.S.); and women's studies (minor).

Specific requirements for these interdisciplinary degree programs, minors, and certificates are described in the departmental sections of the Catalog.

Honors Interdisciplinary Major

Honors students may pursue an individually planned order of study and a minor or a major in fields other than those in the College of Liberal Arts. In order to be approved for admission to the College of Liberal Arts, the student must have earned a 3.00 grade-point average in at least 30 semester hours of college credit, including 6 semester hours of departmental honors registration and completion of an honors project. It leads to the degree "with interdisciplinary honors." Students must submit a plan of study for approval during their junior year. Examples of
Baccalaureate with Early Admission to Medicine or Dentistry

Students who are working toward a baccalaureate degree from the College of Liberal Arts may apply to early admission to The University of Iowa College of Medicine or College of Dentistry. Students must satisfy certain requirements. Before enrolling in the medical or dental college, students must:

- satisfy the General Education Requirements;
- complete the requirements for a major;
- earn at least 94 semester hours of undergraduate work;
- satisfy the residence requirement of the College of Liberal Arts.

Students who have successfully completed the first year of medical or dental school are permitted to apply for credit toward a baccalaureate degree from the College of Liberal Arts.

These students are eligible for early admission to the College of Liberal Arts, but are required to complete their bachelor's degree before their final semester in either the College of Medicine or the College of Liberal Arts.

Combined Degree Program: Engineering and Liberal Arts

Students may earn two University of Iowa baccalaureate degrees in a combined program in the College of Engineering and Liberal Arts. Successful candidates are awarded a B.S. in Engineering and a B.A. in Liberal Arts.

The combined program is authorized by the Board of Regents, University of Iowa. Students who enter the combined degree program must satisfy the requirements of both colleges in about five academic years. Requirements to complete the program are determined by the major areas of study selected in each college. Students who enter the combined degree program are assigned two faculty advisors, 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 study an approved program at the College of Engineering. Students must be admitted to the College of Engineering and the College of Liberal Arts.

Students who enter the program are required to complete the General Education Requirements, and the requirements for the major in the College of Liberal Arts.

It is required for students to take the mathematics and engineering courses early to enable them to begin the courses necessary before graduation.

To qualify for both degrees in the combined degree program, candidates must complete an overall total of 128 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.

Combined Degree Program: Medicine and Liberal Arts

Students may earn two University of Iowa baccalaureate degrees in a combined program in the College of Medicine and Liberal Arts. Although all is completed at the academic year.

Students who wish to qualify for this combined degree program must be admitted to the College of Medicine and the College of Liberal Arts. Candidates must complete the requirements of both colleges in about five academic years. Requirements to complete the program are determined by the major areas of study selected in each college. Students who enter the combined program are assigned two faculty advisors, one in the major department in the College of Medicine and the other in the major department in the College of Liberal Arts.

Students interested in the combined program should use the director of the baccalaureate program of their choice in the College of Medicine.
Satisfactory Grade-Point Average

The general requirements for graduation are listed here in detail as well as the quantity of work completed.

Candidates for the B.A., B.S., B.F.A., B.M., and B.D. degrees satisfy the general requirements for graduation by earning a minimum grade-point average of 2.00 in all college work attempted. All work undertaken at The University of Iowa and at all work attempted in the state, including 200 or all University of Iowa major work.

Candidates for the B.G.S. or B.A. in interdepartmental studies satisfy the qualitative requirements for graduation by earning a minimum grade-point average of 2.00 in all college work attempted, all work undertaken at The University of Iowa, and all work attempted in the state, including 200 or all University of Iowa major work.

Candidates for the B.G.S. degree must earn a grade-point average of 2.00 in all college work attempted toward the degree, all work attempted after admission to the program, and all approved course work.

Residence

Students must satisfy the College of Liberal Arts residence requirement. This may be met by earning the final 20 consecutive semester hours in residence, or by earning the final 20 semester hours in residence, and by completing at least 20 semester hours in residence.

Residency instruction includes coursework at other colleges and universities, coursework taken by the student in residence in other undergraduate colleges of The University of Iowa, and at work by correspondence, including University of Iowa Correspondence Study courses.

B.S. students who have taken the residency requirement to transfer must earn at least 30 semester hours of credit at The University of Iowa after they are admitted to the program.

Students in the combined degree program in the Colleges of Engineering and Liberal Arts must complete 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 in the combined degree program in the Colleges of Medicine and Liberal Arts must complete 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.

General Education Requirements

Students must complete the following General Education Requirements for the B.A., B.S., B.F.A., B.G.S., B.M., and B.D. degrees. Unified Program students must follow a specific course of study that fulfills all General Education Requirements. See "Unified Program," below.

Rhetoric: one or two courses (4-8 S.H.)

Mathematics: for students admitted as degree candidates to the College of Liberal Arts before Fall 1990, see "Mathematics," below.

Physical education: three or four courses (4 S.H.). B.S.L. students are exempt from this requirement.

Foreign language: fourth semester level of college language or fourth-year level of high school language (10 S.H.).

Foreign civilization and culture: one approved course (3-4 S.H.).

Historical perspectives: two approved courses (6 S.H.).

Humanities/Arts ECO: The Interpretation of Literature and two approved courses (6 S.H.).

Natural sciences: two approved courses, one of which must have a laboratory component (7 S.H.).

Quantitative or formal reasoning: one approved course (3-4 S.H.).

Social sciences: two approved courses (6 S.H.).

Unified Program

The Unified Program (UP) is a four-semester series of general education courses for a small group of students who choose the program when they are freshmen. The UP satisfies all of the College of Liberal Arts General Education Requirements except theforeign language and physical education requirements, and each UP course is interchangeable with an equivalent approved course. All students in the UP take the same courses; however, students may leave the program at any time and satisfy the General Education Requirements in other ways, but only freshmen may enter the UP. See "Unified Program" in the Catalog.

Rhetoric

All students must register for their assigned rhetoric course at the first or second registration, as required, and continue to enroll in rhetoric courses until the requirement is completed. Students are not permitted to drop rhetoric courses.

All rhetoric students, regardless of the number of hours they transfer, must qualify for the rhetoric requirement.

The rhetoric requirement may be completed in one of the following ways:

- by passing 101 and 102 Rhetoric I and II (8 S.H.);
- by passing 103 Accelerated Rhetoric (8 S.H.);
- by passing the speech test and 104 Writing and Reading (8 S.H.);
- by passing the essay test and 106 Speaking and Reading (13 S.H.);
- by passing both the speech and essay tests.

Exemptions

Placement and exemption tests are given during the first week of classes for students registered in rhetoric courses. Exemption from part or all of the requirement may be decided on the basis of these tests. Academic credit is not given. For further information, see "Rhetoric" in the current Catalog of Courses.

Students with documented learning disabilities who have undergone formal assessment by an educational clinic with a finding that they are learning disabled in rhetoric may request reasonable accommodations in order to continue in the rhetoric requirement successfully. Such accommodations must be arranged by the Office of Services for Persons with Disabilities and approved by the Department of Rhetoric.

Mathematics

Students admitted as degree candidates to the College of Liberal Arts before August 1990 must satisfy a mathematics requirement. The requirement is satisfied by two years of high school algebra and one year of high school geometry, by satisfactory test scores, or by courses taken at The University of Iowa or another institution. Complete information is available in the Office of Academic Programs.

Physical Education

The physical education requirement may be satisfied in one of the following ways:

- by completing four semester hour courses in physical education with (285.1) or (285.2), for a total of 4 semester hours or;
- by completing 285.1 Fitness and Wellness for Life (2 S.H.) and two 3 semester hour courses in physical education, for a total of 4 semester hours.

Students who may wish exemption from part or all of the requirement by passing tests in specific physical activity skills (see below). Only courses 285.1, 285.2, and 285.5 may be used to satisfy the requirement. Courses 285.1 and 285.2 are offered during the Fall and Spring semesters; 285.5 awards letter grades only. 285.1 and 285.2 are skill courses, and students under these numbers have activity or sports titles and levels of proficiency. 285.1 designers courses that meet for the first time in the semester or for the week’s summer session; 285.2 designers those that meet for the second half of the semester. 285.1 Fitness and Wellness for Life (2 S.H.) is lecture/demonstration course, offered for the entire semester. Students who take 285.5 must meet the requirements of the requirement by taking two 3 semester hour skill courses, or;

If a student repays the same skill course or takes a more elementary course, the Office of the Registrar assigns a grade for either duplication or progression. In selecting prerequisites or using the second-semester-only option, students must course or repay the same activity or sport at the above level.

Exemption Tests

Students may be exempted from part or all of the physical education requirement for academic achievement in comprehensive tests in specific physical education activities or sports. Each test has both written and performance components. Successful completion of a proficiency test results in exemption from
I semster hour of the physical education requirement. Academic credit is not awarded, only exemption. For more information, see “Physical Education Skills” in the current Schedule of Courses.

TRANSFER STUDENTS

Transfer students may satisfy the physical education requirement in one of the following ways:
- by transferring 4 semester hours of college physical education course work (skills, sports, and activities)
- by achieving a passing standing (60%) before admission to The University of Iowa by earning enough credit in physical education at Iowa to make a total of 4 semester hours combined with physical education credit transferred from other colleges.

OLDER STUDENTS

Students who have passed their twenty-third birthday before their first enrollment at the University or will pass their twenty-eight birthday before the date of their graduation are exempt from the physical education requirement.

VETERANS

Veterans may be exempted from this requirement by presenting the Official of the Registrar a certified copy of the latest DD Form 214, Certificate of Discharge.

B.A. STUDENTS

Candidates for the B.A. degree are exempt from the physical education requirement.

Foreign Language

The foreign language requirement may be satisfied by high school courses, college courses, or satisfactory performance in a proficiency examination.

All degree candidates (B.A., B.S., B.F.A., B.G.S., B.L.S., or B.M.) admitted to the College of Liberal Arts full semester 1990 and after must satisfy the foreign language requirement. In one of the following ways.

- by completing the fourth-year level of a foreign language in high school;
- by completing the fourth semester level of college language at The University of Iowa, at another college or university, or during study abroad;
- by completing sequential years of one language in high school followed by sequential semesters of the same language in college; one year of high school study in a foreign language is considered the equivalent of one semester of college work; students must successfully complete the fourth semester level of college language to satisfy the requirement; or
- by passing an achievement test measuring proficiency equivalent to that usually attained after four semesters of college study.

B.S., B.F.A., B.G.S., and B.M. candidates who were admitted to the College of Liberal Arts before fall semester 1990 and who will graduate by August 1994 may satisfy either the fourth-year foreign language requirement described above or a second-semester requirement. Complete information is available in the Office of Academic Programs.

B.A. candidates must satisfy the fourth-semester requirement regardless of their date of admission.

Students who entered at The University of Iowa before fall semester 1990 and who will graduate with a B.A. degree by August 1997 are exempt from the foreign language requirement.

FORBIDDEN LANGUAGE PLACEMENT

Entering students are required to take a University of Iowa foreign language placement test if they have studied French, German, or Spanish. Students who have completed four years of a single foreign language in high school for four semesters at the college level are exempt from this requirement unless they wish to participate in the Foreign Language Incentive Program (see below).

Results from the placement tests are used to determine the level at which students begin their language study at The University of Iowa. In determining placements, academic advisors also consider number of years studied in high school or college, grades earned, experience abroad or with native speakers, and length of time elapsed since the language was last studied, if such considerations would result in a higher placement.

Effective fall semester 1992, entering students who place at the third-year level or higher:
- continue study in that language at the third-year level or higher for full credit, or
- begin study of a different language for full credit.

Entering students who place below the third-year level may:
- complete the appropriate review course in that language for full credit, or
- begin study of a different language for full credit.

Students who have not met the enrollment requirement in a foreign language but who place below the third-year level are not permitted to register for a first- or second-semester course in that language. Students must continue study in that language. They must register for the designated review course (e.g., 9-10 First-Year French Review, 13-14 First-Year German Review, or 30-35 Elementary Spanish Review).

FOREIGN LANGUAGE INCENTIVE PROGRAM

The Foreign Language Incentive Program enables entering students to earn extra 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 prerequisite fourth-semester course. The credit is ungraded but counts toward the hours required for graduation. Incentive credit is not granted for college courses for which transfer credit has been earned.

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, see the handbook "Foreign Language Incentive Program" published by the Office of Academic Programs.

SATISFYING THE REQUIREMENT BY EXAMINATION

Students proficient in a language for which they have received an oral examination or instruction toward the fourth-semester level may validate that proficiency as an examination.

Foreign Languages Offered at Iowa

Students proficient in French, German, or Spanish should take one of The University of Iowa placement examinations regularly administered to entering students during the summer orientation program and each semester just before the opening of classes. Proficiency examinations include Chinese, Dutch, ancient Greek, Hindi, Italian, Japanese, Latin, Portuguese, Russian, Sanskrit, and Swahili and are arranged by contacting the appropriate department. Academic credit is not awarded for successful completion of these examinations.

Students who earn satisfactory scores on Advanced Placement Program examinations in French, German, Latin, or Spanish may be awarded credit. Complete information is available from the Evaluation and Testing Service.

Foreign Languages Not Offered at Iowa

Students proficient in a foreign language not regularly offered at The University of Iowa may apply to the Office of Academic Programs for assessment. In some cases, arrangements can be made for an on-campus proficiency evaluation. Examinations are available for a limited number of foreign languages, however, Cymrey, Irish, Yiddish, Farsi, Arabic, Urdu, Sanskrit, Tamil, modern Greek, Russian, Arabic, Korean, Latin, Marathi, Welsh, Norwegian, Polish, Persian, Russian, Swedish, Urdu, and Yiddish. Academic credit is not awarded for successful completion of these examinations. Students proficient in a language for which testing is not available or is not complete must be referred by their approved method.

STUDENTS WITH DOCUMENTED LEARNING DISABILITIES

Students who have undergone formal assessment by the Office of Services for Persons with Disabilities and are found to have a language learning disability may substitute another approved course to satisfy the foreign language requirement with substitution approved in the Office of Academic Programs.
2:8: Human Genetics 3 s.h.
4:5: Genetics and Society 3 s.h.
4:5: Technology and Society (Lab) 4 s.h.
4:7: General Chemistry I 3 s.h.
4:7: General Chemistry II 3 s.h.
4:13: Principles of Chemistry I 3 s.h.
4:14: Principles of Chemistry II 3 s.h.
4:60: Chemistry Lab I (1) 2 s.h.
12:5: Introduction to Earth History and Research 2 s.h.
12:6: Evolution and the History of Life (Lab) 2 s.h.
12:5: Introduction to Geology (Lab) 4 s.h.
12:6: Evolution of the Earth (Lab) 4 s.h.
12:14: Lecture in Evolution and the History of Life 2 s.h.
12:23: Earth History and Resources (Lab) 4 s.h.
12:24: Introduction to Environmental Geology (Lab) 3 s.h.
20:9: Chemistry and Physics of the Environment 3 s.h.
20:9: Basic Physics (Lab) 4 s.h.
20:11: College Physics (Lab) 4 s.h.
20:12: College Physics (Lab) 4 s.h.
20:17: Introductory Physics I (Lab) 4 s.h.
20:18: Introductory Physics II (Lab) 4 s.h.
20:19: Modern Astronomy 3 s.h.
20:25: Modern Astronomy 4 s.h.
20:21: Introductory Astronomy Laboratory (Lab) 1 s.h.
20:52: Characteristics and Origins of the Solar System 3 s.h.
20:61: General Astronomy (Lab) 4 s.h.
20:62: Introduction to Physics (Lab) 4 s.h.
44:3: Introduction to Physical Geodesy 4 s.h.
11:13: Human Origins 3 s.h.

**Transfer Credit in Natural Sciences**

Transfer students must complete a total of 7 semester hours of approved courses at The University of Iowa at or before college graduation. If their transfer work does not include a course with a laboratory component, students must complete one of the approved laboratory courses listed above.

**CLSP Credit in Natural Sciences**

Students who score at or above the 70th percentile on one of the subscores of the CLSP general examination in natural sciences are awarded 3 semester hours of credit toward the natural sciences requirement. They must complete the remaining credit by taking an approved 4-semester-hour laboratory course.

**Students who score at or above the 70th percentile on the subscore of the CLSP natural science general examination are awarded 3 semester hours of credit toward the natural sciences requirement and 3 semester hours of elective credit. They must complete the natural science requirement by taking an approved 3- or 4-semester-hour laboratory course.**

**Quantitative or Formal Reasoning**

This requirement may be satisfied by completing any one of the courses listed below or by completing a more advanced course that takes the course as prerequisite. Students should fulfill the requirement by the end of the second year in residence or during the first 24 semester hours of study at The University of Iowa.

75:25 Elementary Statistics and Inference 3 s.h.
72:20 Introduction to Programming with PASCAL 4 s.h.
22:16:1 Introduction to Calculus with Applications 4 s.h.
22:16:1 Mathematics for the Biological Sciences 4 s.h.
22:15:1 Calculus for the Biomedical Sciences 4 s.h.
22:17:1 Quantitative Methods I 4 s.h.
22:19:1 Elementary Functions 4 s.h.
22:33:1 Calculus for the Social Sciences 4 s.h.
22:35:1 Engineering Calculus I 4 s.h.
22:36:1 Engineering Calculus II 4 s.h.
125:3: Social Science and Social Science II 4 s.h.
22:1: Quantitative Methods II 4 s.h.
22:25:1 Elementary Statistics and Inference 3 s.h.
22:30:1 Principles of Reasoning 3 s.h.
362:30:1 Theory and Practice of Argument 4 s.h.
121:13: Language and Formal Reasoning 3 s.h.

**Social Sciences**

Students must complete at least 6 semester hours from the courses listed below.

62:11: Principles of Microeconomics 4 s.h.
62:12: Principles of Macroeconomics 4 s.h.
79:130: Politics of Education 3 s.h.
79:30: Psychology of Academic Learning 3 s.h.
17:61: Social Science Perspectives on Contemporary Africa 3 s.h.
107:9: Social Scientific Foundations of Communication 3 s.h.
30:1: Introduction to American Politics and Public Policy 3 s.h.
30:1: Introduction to Political Thought and Political Action 3 s.h.
30:20: Introduction to the Politics of the Industrial Democracies 3 s.h.
30:41: Introduction to the Politics of the Second World 3 s.h.
30:42: Introduction to the Politics of the Third World 3 s.h.
30:50: Introduction to International Political Behavior 3 s.h.
30:60: Introduction to International Relations 3 s.h.
30:61: Introduction to American Foreign Policy 3 s.h.
30:140: Government and Politics of Western Europe 3 s.h.
31:146: African Development 3 s.h.
31:179: Crisis in the Middle East 3 s.h.
31:1: Business Psychology 3 s.h.
31:3: General Psychology (other than 31:1 or 31:3 may be used) 3 s.h.
31:12: Introduction to Clinical Psychology 3 s.h.
31:14: Introduction to Child Development 3 s.h.
31:16: Introduction to Mental Processes 3 s.h.
31:17: Introduction to Comparative Psychology 3 s.h.
34:1: Introduction to Sociology: Principles 3 s.h.

34:2: Introduction to Sociology: Problems 3 s.h.
30:25: Mass Media and Mass Society 3 s.h.
356:30: Communication Theory in Everyday Life 3 s.h.
44:1: Introduction to Human Geography 4 s.h.
44:1: Introduction to Social Science 4 s.h.
44:16: Contemporary Environmental Problems 3 s.h.
44:30: Introduction to Economic Geography 4 s.h.
44:41: African Development 3 s.h.
47:1: Global Interdependence and Human Survival 3 s.h.
104:55: Social Scientific Perspectives on Leisure and Recreation 3 s.h.
113:15: Introduction to the Study of Culture and Society 3 s.h.
113:17: Anthropology and Contemporary World Problems 3 s.h.
117:14: Language and Human Behavior 3 s.h.
117:19: Urban Anthropology 3 s.h.
129:60: Introduction to Afro-American Sociology 3 s.h.
129:71: Social Science Perspectives on Contemporary Africa 3 s.h.
141:71: Social Science Perspectives on Contemporary Africa 3 s.h.
141:146: African Development 3 s.h.

**General Education Restrictions and Waivers**

Pass/No Pass: No course used to satisfy any of the General Education Requirements may be taken pass/no pass.

Courses from the major department: Students may use approved courses from their major department to satisfy the General Education Requirements. Courses approved by the college are listed above.

No more than three courses from one department: Students may use no more than three approved courses from one college department to satisfy the General Education Requirements. More than 3 courses may be counted toward the total general education requirement.

Departmental waivers of General Education Requirements: Departmental waivers are no longer permitted for B.A. or B.M. candidates. However, with the approval of the Educational Policy Committees, departments may waive up to 7 semester hours of General Education Requirements for very B.A. and B.M. candidates in the last class or classes in the department. Applications will be considered for the last class or classes in the major department. The department may waive up to 7 semester hours of General Education Requirements for any B.A. and B.M. candidates in the last class or classes in the major department. Applications will be considered for the last class or classes in the major department.

**Placement and Exemption Examinations for General Education**

Satisfactory performance on tests administered at The University of Iowa may lead to full or partial exemption from this requirement.
Restrictions and Limits on Semester Hours Applied toward a Degree

- A maximum of 16 semester hours credit with a grade of B or better and a minimum semester hour requirement of 5 satisfactory is acceptable toward the 124 semester hours required for graduation. B.R.S. students are not subject to this restriction.
- A maximum of 32 semester hours of credit by examination from any approved sources is accepted toward the 124 semester hours required for graduation.
- A maximum of 30 semester hours of credit earned in other colleges of the University which 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.
- After a student has earned 50 semester hours of degree credit from all sources, no more credit is accepted by transfer from a two-year college toward meeting the 124 semester hours required for graduation. If a student has earned more than 60 semester hours of degree credit from a two-year college, the credit and grades earned in the major are accepted toward the major semester-hour requirement.

Requirements for the Major

Specific requirements for majors offered in the College of Liberal Arts are listed in the general academic catalog. Students should consult their advisor in evaluating plans for a major.

A maximum of 50 semester hours of credit from a two-year college is acceptable toward the state's B.S., B.A., or B.F.A. degree.

Transfer Students

Transfer students who have taken courses elsewhere that are similar to those approved for general education at Iowa State must complete any four courses toward the General Education Requirements. Accomplishment of these courses is shown on the student's admission evaluation. Students will transfer fewer than enough hours to meet the General Education Requirement may not be approved for courses to complete the remainder of the requirements.

Students with A.A. Degrees

Students who receive A.A. degrees from Iowa Area Community Colleges participating in the Iowa Community College Regents Articulation Program, the General Education Requirements, accept foreign language and the general education courses, if the program of study for which the A.A. degree was awarded includes the following:

- A minimum of 60 semester hours (90 quarter hours) of credit acceptable toward graduation toward mathematics, courses comparable to MATH 1 Basic Algebra I, MATH 2 Basic Algebra II, and MATH 3 Basic Geometry are not accepted toward graduation; completion of an agreed-upon group of courses in 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 62 semester hours of credit from all sources toward the 124 semester hours required for a bachelor's degree at Iowa State. If a student has earned more than 60 semester hours of course credit, the maximum is decreased to 59 semester hours of course credit, and is subject to satisfy course requirements. The extra credit earned in comparing the grade-point averages and may be qualified toward other state course requirements, but the extra credit does not count toward the student's degree.

Representatives from the community colleges and the Articulation Committee meet annually to review the guidelines of the articulation agreement.

Courses without Degree Credit

Courses 10B, 10D, 10F, 10G, 12MM, 22MM, 2, and 22MM carry no degree credit. Students who take these courses, or courses equivalent to them at another college or university, must complete an additional semester hour beyond the 124 required for graduation. Although these courses carry no degree credit, grades awarded in them are used in computing grade-point averages, and the hours count toward semester hour requirements for all official purposes (e.g., full-time and half-time status, minimum schedule, minimum semester-hour requirement, reasonable academic program, dean's list eligibility, etc.).
Double Majors

Students may earn a single bachelor’s degree with two or more majors if they meet the requirements for each major and in the departments or programs offering the same degree in the College of Liberal Arts. For example, a student may earn a B.A. in English and a B.B.S. in psychology and sociology. When a single department offers a degree in more than one subject area such as physics and astronomy or Spanish and Portuguese, students may earn a double major, a minor and a minor, or two minors involving these degree programs. All students must earn a minimum of 56 semester hours in courses taken outside the department.

Students seeking double majors in the programs within the Division of Mathematical Sciences (actuarial science, computer science, mathematics), and statistics must earn a minimum of 50 semester hours in courses taken outside the division.

Students seeking double majors in the teacher education programs must earn a minimum of 56 semester hours in courses taken outside the College of Education.

Returning for a Second Major

Students who already have earned a B.S. or B.S. degree from The University of Iowa and who are not enrolled in a graduate or professional program may complete the requirements for a second major. These students must apply for readmission to the College of Liberal Arts, declare the appropriate major in their application, and register as seniors (44). Students who return to the University to complete a second major must meet the requirements of that second major; they need not complete the requirements for 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 permanent record.

Students who return to the University to complete the requirements for a second major developed out of their liberal arts minor.

Minors

Liberal Arts Minors

Students graduating from the College of Liberal Arts may earn a minor in any degree 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 entirely different and separate from one major.

Requirements

The requirements given 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 taken at The University of Iowa. Advanced courses accepted in the academic unit granting the minor. Neither transfer credit nor credit by examination is accepted toward the 12 semester hours of advanced work. Students should check with the minor department to identify acceptable courses. Students must have a grade-point average of at least 2.0 in all work attempted in the minor department or program.

Course work applied toward the minor may be taken pass/fail.

Guidelines

Each academic unit determines which of its advanced courses in a particular area in acceptable for a minor. Students seeking information about acceptable courses should contact the minor departmental office.

Some programs in the college that do not offer a bachelor’s degree offer minors. For example, minors may be earned in aging studies, global studies, Latin American studies, and women’s studies.

Students in the Office of the Registrar of the desire to have a minor listed on their record when they apply for a degree. If the student has completed the requirements for a minor, a notation is placed on their permanent record.

Students who already have earned a bachelor’s 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 their permanent record.

Course work applied toward the minor may be used to satisfy the General Education Requirements.

Course work applied toward the minor also 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 in part of the major. (Students majoring in American studies may not apply the same course work to both the major and a minor in a cognate department.)

University of Iowa Guided Correspondence courses are acceptable toward the minor.

Restrictions

Course work applied toward a minor may not be used to satisfy the requirements for a major. (Students earning minors in Latin American

studies are an exception to this rule. They may count up to 3 semester hours from their major department toward the minor.)

Course work applied toward a minor may not be used to satisfy the requirements for another minor.

Candidates for the B.S.C. or B.S.L.S. are not eligible for minors.

The following degree granting programs do not offer minors: biochemistry; interior; dental hygiene; elementary education; exercise science; general studies; health occupations education; interdepartmental studies; liberal studies; literature, history, and the arts; social studies; psychology, East European and Russian studies; and speech and hearing science. A minor in science education is offered through the College of Education.

Liberal Arts Minors for Students in Business Administration, Engineering, Medicine, and Nursing

Undergraduate students in the Colleges of Business Administration, Engineering, Medicine, and Nursing may earn liberal arts minors by satisfying College of Liberal Arts requirements for minors. For restrictions, see appropriate college sections of the Catalog.

Minor in Business Administration

Students in the College of Liberal Arts may elect a minor in business administration. The minor is available to satisfy all requirements for a minor. At least 15 semester hours of course work for the 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 the University.

62:90 Computer Analysis

Business calculus (222M 12, 222M 17, 222M 18, 222M 19)

Statistics (79J 123, 222B 12, 222B 19, 225F 102, 225F 121, or 314 125)

62:1 Principles of Microeconomics

62:2 Principles of Macroeconomics

62:2 Management Cost Accounting

62:47 Introduction to Law

*MBA 100 Introduction to Marketing

*OP 101 Introductory Financial Management (or 57 14)

*OP 103 Administrative Management

*Must be taken in junior or senior year

Accelerated Professional Track

For superior students in the College of Liberal Arts, the College of Liberal Arts offers a Master of Business Administration (M.B.A.) at The University of Iowa without the accelerated professional track office as an alternative to the business minor. Students pursuing an undergraduate degree in a field other than business while taking M.B.A.

Minors in Education

Liberal arts students who are pursuing the B.A. or B.S. degree may earn minors in the College of Education. The four minors offered by the College of Education are educational psychology, general education, human relations, and science education. Contact the Office of Student Services and First Semester in the College of Education for specific requirements.

Registration

Late Registration

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

Classification of Students

<table>
<thead>
<tr>
<th>Rank</th>
<th>Hours earned</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshmen</td>
<td>0-20</td>
<td>A1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>20-40</td>
<td>A2</td>
</tr>
<tr>
<td>Junior</td>
<td>40-60</td>
<td>A3</td>
</tr>
<tr>
<td>Senior</td>
<td>60 or more</td>
<td>A4</td>
</tr>
</tbody>
</table>

Special (nondegree) student A9

Changes in Registration Initiated by the Student

Adding and Dropping Courses

Once classes have begun, courses may be added during the first three weeks of the semester (for the first one and one-half weeks of the summer session) with the signature of both the student and instructor on a Change of Registration form. The form must be presented at the Registration Center. Courses may be dropped at any time during the first five weeks of the semester. For five weeks of the summer session with the approval of the advisor and the instructor.

Students who wish to add independent study, directed readings, or business research may do so during the first five weeks of the semester (as long as the advisor and the instructor are available). Instructors may request permission from the dean's signature in the Office of Academic Programs.

Special courses that meet on a different schedule or that start or end at times other than the beginning and end of the semester, and are so listed in the Schedule of Courses, may be added with the necessary signatures any time during the first one-third of the course's duration and dropped anytime during the first two-thirds of the course's duration. Prior to the regularly scheduled deadlines, open entry seating continues to occur until the usual eight-week summer session and for other special session courses.

Students who wish to add classes must not drop the course automatically. A student who wants to add a class must obtain the necessary signatures on a Change of Registration form. The form must be presented at the Registration Center. Only under special conditions may an instructor drop a student from her course (see "Instructor's Option to Drop for Nonattendance," in this section of the Catalog).

Withdrawal (W)

Undergraduate students are assigned the grade of W (withdrawal) for any course in any scheduled college dropped after the first week of the semester but not one and one-half weeks of the summer session. For courses that meet at or end at times other than the beginning and the end of the semester, students may drop the course assistance within the first five weeks of the course's duration without being assigned a W.

Limits on Withdrawing from Courses

Liberal Arts students may not drop the same course with the grade of W more than twice. Those who do so are placed on disciplinary probation.

 Instructor's Option to Drop for Nonattendance

To promote vacancies in crowded classes, instructors may drop students who have not attended any class sessions during the first eight calendar days of the semester (or the first five weeks of the summer session), unless the students have offered acceptable reasons for beginning the course late. This privilege is for the benefit of students who otherwise would be unable to enroll in certain crowded classes, which should not be used when these circumstances do not exist. These drop actions are made without the assignment of a W. The Registration Center notifies such students dropped from a course and the student's advisor of all changes.

Students should not assume that they have been dropped automatically from a course because they have not attended it.

Auditing Courses

Students in the College of Liberal Arts may audit a course (reduce to zero the number of semester hours) if approved by the instructor and granted permission by the Office of Academic Programs. Instructors must request permission for the student's signature in the Office of Academic Programs. Approval to audit or drop courses late is granted only for extraordinary circumstances and only with appropriate documentation.

Changes in Variable and Arranged Credit

Students who have registered for courses with variable or arranged credit may change the number of semester hours according to the rules for arranging dropping or auditing. Students may increase the number of hours during the first three weeks of the semester (or first one and one-half weeks of the summer session) but may decrease the number during the first two weeks of the summer session (or first five weeks of the summer session)

Withdrawing Students

Students may withdraw from the entire registration anytime before the end of the seventh week of the semester or the sixth week of the summer session. No credit is given for the withdrawal of classes.

Withdrawing from Registration

Students must withdraw from the entire registration anytime during the seventh week of the semester or the sixth week of the summer session. No credit will be given for the withdrawal of classes. Students who withdraw registration may not be reinstated after the deadline for that session. Withdrawal forms are obtained in the Office of the Registrar.

Student Responsibility

Students must withdraw in changes in registration, obtain the proper signatures on the proper forms, and deliver the forms to the Registration Center before the deadline. Confirmation that changes have been made is the revised computer printout generated at the Registration Center.

Instructor's Option to Drop for Nonattendance

To promote vacancies in crowded classes, instructors may drop students who have not attended any class sessions during the first eight calendar days of the semester (or the first five weeks of the summer session), unless the students have offered acceptable reasons for beginning the course late. This privilege is for the benefit of students who otherwise would be unable to enroll in certain crowded classes, which should not be used when these circumstances do not exist. These drop actions are made without the assignment of a W. The Registration Center notifies such students dropped from a course and the student's advisor of all changes.

Students should not assume that they have been dropped automatically from a course because they have not attended it.
Grading

Grading System

The following grading system is used in the College of Liberal Arts.

<table>
<thead>
<tr>
<th>Grade (Description)</th>
<th>Grade point for each semester hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.33</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>3.67</td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.67</td>
</tr>
<tr>
<td>C+</td>
<td>2.33</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>1.67</td>
</tr>
<tr>
<td>D+</td>
<td>1.33</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td>0.67</td>
</tr>
</tbody>
</table>

F (failing) 2

*Not used in computing grade-point averages*

Policies for Plus/Minus Grading

The grading system was expanded to include plus and minus grades effective with grades reported for the summer session 1998. 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/or instructors are free to use the old system (which uses grades of A, B, C, D, F) or the new system (which permits the assignment of plus and minus). Within either system, instructors may use any one 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 ascertained to all sections of a parallel 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 (GPA)

The cumulative grade-point average (GPA) is computed by:

(a) multiplying the number of semester hours in each course by the appropriate grade point;

(b) adding the grade points earned in each course;

(c) dividing the sum in (b) by the number of hours attempted, excluding courses in which grades of I, N, C, F, R, S, or W have been given.

Grades of I, W, and X included in hours attempted and are used in computing the GPA. Although grades of I or W are not available for full-time students, the cumulative GPA is calculated as the student's GPA, the composite of full-time students, with the instruction that the permanent record are transcribed as such or as not to exceed 4.00.

Incomplete (I)

Instructors may report a grade of I (incomplete) only if the uncompleted part of the student's work in a course, other than in research, thesis, or internship, is still required to be completed. If the work is unfinished for reasons acceptable to the instructor, the student's name will appear on the final transcript. Grades may not be repeated to remove incompletes. Incomplete grades must be removed by completing the uncompleted part of the work.

The work must be completed and submitted to the course instructor three or one-half weeks before the close of the examinations period of the next semester 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 the deadline results in the grade being assigned for the incomplete.

No Grade Reported (G)

A grade of G is assigned by the Registrar when an instructor fails to report a grade or reports an invalid grade.

The designation on a student's permanent record will be changeable according to the procedures for incompletes/inaffirmaties. Students will be informed that the O by the designated deadline will result in an F being assigned for each O.

Pass/No Pass Option (P/N)

Students in the College of Liberal Arts have the option of taking elective courses on a P/N basis. If a course is graded on a traditional letter grade, it is converted automatically in the Office of the Registrar. Students may register to take a course with grades of A, A-, B+, B, B-, C+, C, and C- as equivalent to grades of D+, D, D-, and F, respectively.

The grades of P and N are not used in computing grade-point averages; the grade of N does not count as hours earned (graduation eligibility).

The Registrar may register P/N beginning the first day of classes through the end of the third week of the semester for the different subparts of the semester. For courses that start or end in weeks other than the beginning and end of the semester, students may register for P/N anytime during the first week of the quarter or any part of the quarter. Students meeting the above described requirements may register and the advisor must be notified, except that the advisor being that the Registrar Center before the deadline. A P/N registration may not be changed after the deadline.

Restrictions

Students on academic probation may not use the P/N grading option.
Instructor's Notes

F/N grading may be used in elective courses only. Courses used to satisfy graduation requirements may not be given F/N. Course work in the major department is not available on a F/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 cognitive or related areas may be taken as F/N if available, at the discretion of the major department. No course accepted toward the major may be taken F/N.

A maximum of 16 semester hours of F grades from all colleges is accepted toward the bachelor's degree. Transfer students admitted to the University with fewer than 50 semester hours of credit may seek the maximum of 10 semester hours of F grades. Those admitted with 50 or more semester hours are limited to 8 semester hours.

A maximum of two F/N grades may be taken in any one semester.

Certain courses in the College of Liberal Arts are offered F/N and are 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 toward the General Education Requirements or toward requirements in the major or minor. The grade of F does not count as hours earned for graduation.

Special F courses are not designated for credit in F/N, although all students enrolled in such courses subsequently receive either an S or an F.

A maximum of 16 semester hours with the grade of S is accepted toward the bachelor's degree.

Second-Grade-Only Option

Students may repeat courses taken at The University of Iowa which are offered F/N and are 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 toward the General Education Requirements or toward requirements in the major or minor. The grade of F does not count as hours earned for graduation.

Special F courses are not designated for credit in F/N, although all students enrolled in such courses subsequently receive either an S or an F.

A maximum of 16 semester hours with the grade of S is accepted toward the bachelor's degree.

Restrictions

The second-grade-only option may be used only for University of Iowa courses, including courses in the Saturday and Evening Credit Program, extension, 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.

Students may apply the option to a maximum of three courses. The option may be used only once per course, and it may be used only if obvious regression has occurred.

If the course was taken for the first time, it must be taken for a grade the first time. If the course was taken two times, the first time, it may be taken F/N (or 0.0) 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 second-grade-only option was implemented in fall semester 1969. Courses taken before that time are not eligible.

Mid-Semester Reports

At mid-semester, instructors are asked to report grades for students whose work is below C. The Office of the Registrar distributes these reports to advisors and to individual students, who are expected to be informed promptly. In addition, the Office of the Registrar notifies the advisers. The grade of S is not reported on the permanent record.

Grading Grievances

Grading grievances should be resolved with the instructor who assigned the grade. If the student and instructor cannot resolve the matter, the student must discuss it further with the departmental executive or faculty senator operating a mid-semester course. The departmental executive officer may then allow semester grades on mid-semester courses to be changed on a case-by-case basis.

The Office of Academic Programs publishes a handbook on grading grievance, which describes the procedure and restrictions.

Academic Standards

Students in the College of Liberal Arts are expected to maintain satisfactory academic standards and to demonstrate reasonable progress toward a degree. Probation serves as a warning that students will not graduate unless their academic performance improves.

Academic Probation

Students must achieve the following minimum University of Iowa and total cumulative grade-point averages or their equivalent on probation.

Freshmen (60-79 s.h.) 1.70
Sophomores (90-59 s.h.) 1.85

Juniors (60-79 s.h.) 2.00
Seniors (90 or more s.h.) 2.00
Special students (Any 2.00)

Students on academic probation are continued to good standing if their University of Iowa and total cumulative grade-point average equal or exceed the grade-point averages designated above.

Examinations (F/N) grading option may not be used by students on academic probation; however, F/N course work may be used.

Failing grades and transfer students may be admitted on probation if they fail to meet the minimum stated standards for admission. See "Admission Requirements," below.

Dismissal

Freshmen admitted unconditionally (not on probation) are subject to dismissal from the College after one semester on academic probation. Probation students are subject to dismissal after two consecutive semesters on academic probation. Continuing students are subject to dismissal after two consecutive semesters on academic probation. Probation students on academic probation who withdraw from enrollment after the eighth week of the semester are subject to dismissal at the close of that semester. Very poor academic work in any semester may result in dismissal at the close of that semester.

Enrollment

Students who can document that their academic work was the result of extenuating circumstances, such as a disabling illness or personal crisis, may appeal for revocation of a dismissal. A student dismissed in any semester must appeal in writing no later than 4:30 p.m. on the second day of spring semester classes. A student dismissed in May appeal in writing no later than June 15. Detailed information on the appeals procedure is available in the Office of Academic Programs. Appeals should be submitted to the Student Appeals Committee, Office of Academic Programs, 415 Schaeffer Hall. The decision of the committee is final. No appeals are considered for revocation of a dismissal that would prevent enrollment in a summer session.

Reinstatement to the College

Students dismissed for unsatisfactory scholarship for the first time are not permitted to register again for one year. Students dismissed a second time are not permitted to register for at least two years. Requests for reinstatement must be made in writing or in person, and should be addressed to the assistant dean of the College of Liberal Arts, 160 Schaeffer Hall. Arrangements for a reinstatement interview may be made, and the interview must take place between March 1 and July 15 for reinstatement to a Fall semester or between October 1 and December 15 for reinstatement to a spring semester. Late requests are deferred to the following semester.
Recognition for Academic Achievement

Dean's List
Liberal arts students who achieve grade-point averages of 3.50 or above during a given semester or more semester hours of graded work (excluding University of Iowa General Correspondence Study courses and who have no hours of H (incomplete) or F (no report) are recognized by inclusion on the Dean's List for that semester, and a notation to that effect is entered on the student's permanent record.

Graduation Honors
High scholastic achievement is recognized upon graduation in two ways: graduation with distinction, based upon grades only; and graduation with honors in a particular field, based on both grades and the completion of special work as outlined by the college and the major department.

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 two percent of the graduating class, "with high distinction" to students in the next highest three percent, and "with distinction" to the next highest five percent. Ranking is based on students' grade-point averages for all college-level study undertaken prior to the final registration.

To be eligible for graduation with distinction, students must complete a minimum of 60 semester hours in residence in the College of Liberal Arts at the University of Iowa, of which at least 40 semester hours must have been completed before the student's final registration.

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.

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 transcripts and standardized test scores. Some programs within the College of Liberal Arts have selective admission procedures. Admission to these programs is based on grades in specified prerequisite courses, the cumulative grade-point average, and other criteria.
The University of Iowa requires all freshmen and transfer students to present fewer than 24 semester hours of transferable credit to complete either the College of Liberal Arts (COLA) or the School of Art (SAT) and have these hours reported to the University before they register for classes. These examinations are used as a criterion for admission, for placement purposes, or advising, and for awarding University-administered scholarships and loans. Applicants whose native language is not English must present scores on the Test of English as a Foreign Language (TOEFL).

Unit Requirements

The faculty of the College of Liberal Arts recognizes the need for entering students to be prepared for college course work immediately upon matriculation on 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 and to present a minimum grade of C in each course. Males who graduated from high school after 1985, transfer students with fewer than 24 semester hours of transferable credit who graduated after 1985, and males who graduated from high school before 1985, four years of English-language arts, with emphasis in 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 (two years must be chosen from biological sciences, chemistry, and physics).

Three years of social studies (American history, social studies, economics, government, world history, psychology, and sociology).

The following prerequisite 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 (art history, dance, drama, music, photography, studio arts, theater, visual arts). If credits are not earned in the arts and humanities, a fourth year of mathematics (algebraic geometry, trigonometry, or calculus) is recommended.

As an additional two years of the same foreign language.

Students whose high school curriculum did not provide the courses necessary to complete the unit requirements described above also may apply to the director of admissions for an exception.

Entering Freshmen

Entering freshmen 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 freshmen are required to complete specified college-level courses with a passing grade. Courses taken to remove deficiencies do not count toward the General Education Requirements, with the exception of the foreign and foreign language.

With prior approval of the Office of Admissions, these courses may fulfill the foreign language of an accredited college, university, or community college. If the courses are taken at The University of Iowa, it is usually during the summer session immediately preceding enrollment. Credits taken to remove deficiencies must be completed by the first semester of the student's second year of study at The University of Iowa.

Applicants whose high school verifies 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 a passing grade.

In general, one semester of college work in a core curriculum area (1 semester hour or a quarter hour) 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 an accredited two-year college or junior college participating in the Iowa Community College-Regents Articulation Agreement are considered to have fulfilled the unit requirements. The foreign language requirement may be fulfilled by a semester or a quarter hour of college-level, college-level foreign language, or college-level foreign language.

Other transfer students may use college courses taken elsewhere to make up high school deficiencies. Courses must be completed with a passing grade. Courses taken to remove deficiencies do not count toward the General Education Requirements, with the exception of the foreign and foreign language.

Removal of Deficiencies through Testing

Deficiencies in mathematics or foreign language may be removed by satisfactory scores on proficiency examinations administered by The University of Iowa. Applicants also may remove deficiencies in English, English composition, or world language by earning acceptable scores on approved standardized tests.

Entering Freshmen

Applicants seeking admission as entering freshmen must have the high school transcript which they graduated provide a certificate of high school credits including a complete statement of high school record, class rank, and credit of graduation. Applicants may be admitted provisionally after they have completed the last year in high school, but admission is not final until receipt of the final transcript and certification of high school graduation.

Graduates of accredited Iowa high schools who are in the upper one-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 make the high school class rank of the one-half of their graduating class must not make a minimum admission index, which is calculated by summing the ACT composite score by two and adding the percentile rank in class. A composite score is used for students who submit SAT, instead of ACT scores. The minimum index for admission varies from year to year. For residents it ranges from 400 to 100 for nonresidents from 100 to 110. If a given high school does not mark its graduates or if the high school graduating class is small, the applicant's credentials are reviewed by the admissions review committee.

Applications may not be considered for admission based on other characteristics that indicate definite promise or success. At the discretion of the admissions officers, some students may be admitted conditionally, admitted on probation, required to enroll for a trial period during a succeeding summer session, or denied admission.

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

Admission without High School Graduation

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

Transfer Students

Transcripts of records are given full value if they come from college or universities accredited by the North Central Association of Colleges and Secondary Schools or similar regional associations. The Iowa Board of Regents has stipulated that the Iowa Community College-Regents Articulation Agreement is followed for schools not regionally accredited.

Applicants must submit an official transcript from each college or university they have previously attended. Applicants also must enroll in a high school transcript, unless in standardized tests, and any other records or letters of the College of Liberal Arts may require to support 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 2.00 (based on a 4-point system) on all college work previously attempted, are admitted.

Students with fewer than 24 acceptable 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, or if suspended for an indefinite period, are not considered until one year has passed since the 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.

Transfer Students from Nonaccredited Colleges

The College of Liberal Arts may refuse to recognize credit from a nonaccredited college or may refuse applicants on a conditional basis and provide a reason for the validation of some or all of the credit. The validation period is not less than one year but not more than five years. The college specifies to the student the terms of the validation process at the time of conditional admission. Students from nonaccredited colleges are considered on their own merits, and admission or rejection is at the discretion of the admissions officer.

Non-Native Speakers of English

The University of Iowa has an English proficiency requirement to ensure that non-native speakers know English well enough to study without being hindered by language problems, to understand lectures, and to participate successfully in class discussions. For this reason, applicants whose native language is not English are required to submit scores on the Test of English as a Foreign Language (TOEFL) along with their application for admission and supporting academic documents. Autonomic evaluators from this policy were granted to persons who already have received a baccalaureate or equivalent degree from a college in the United States, the United Kingdom, Canada (excluding French Quebec), Africa (English speaking), Australia, or New Zealand.

Foreign Applicants

REGULAR ADMISSION

A minimum TOEFL score of 530 is required for regular admission and to begin study in a degree program. The following scores are acceptable:

- TOEFL scores of 600 or above may begin academic course work without restrictions.
- Applicants whose academic credentials indicate that they should be admitted, but whose TOEFL scores fall between 530 and 599, are required to complete an English proficiency evaluation before their registration for courses.

Based on the results of the evaluation, these students may: be allowed to take a full academic course load (excluding English as a Second Language courses); be required to enroll in a credit-bearing English as a Second Language program; or be 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 530 and 599 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 (IEP) for up to one year. To continue their admission status from conditional is regular (a prerequisite for beginning study in a degree program), students must obtain a minimum TOEFL score of 530 and complete an English proficiency evaluation.

Based on the results of the evaluation, these students may: be allowed to take a full academic course load (excluding English as a Second Language courses); be required to enroll in a credit-bearing English as a Second Language program; or be required to continue in the IEP until their language proficiency reaches an appropriate level.

Students without TOEFL scores or whose scores below 530 are not considered for admission to the College of Liberal Arts. These students may enroll in the IEP. However, IEP conditionals without conditional admission to the College of Liberal Arts does not imply or guarantee admission to an academic program at the University of Iowa.

U.S. Citizens and Permanent Residents

U.S. citizens and permanent residents whose native language is not English are required to submit scores on the TOEFL before registering for courses. Exceptions to this requirement are made in the cases of:

- graduates of Iowa high schools whose ACT composite score is 24 or above (SAT combined score of 960 or above) and whose ACT English subscore is 21 or above (SAT 390); and
- Iowa residents whose ACT composite score is 25 or above (SAT combined score of 1020 or above) and whose ACT English subscore is 21 or above (SAT 450).

Admitted applicants whose TOEFL scores are 600 or above may begin academic course work without restrictions. Those whose TOEFL scores fall below 600 are required to complete additional English language proficiency testing before they register for courses.

Students seeking exceptions are directed to the coordinator of English as a Second Language.

English Proficiency Evaluations

On-campus proficiency evaluations are conducted by the Department of English. If such evaluation warrants, students are required to enroll either in credit-bearing courses in English as a Second Language or in the noncredit Iowa Intensive English Program until their language proficiency reaches an 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.

(For non-native speakers of English are described under "Language" in the Catalog). Special (Nondegree) Students

Students may be admitted to the college as nondegree candidates. These students are classified as special students (SP) and may enroll in courses for personal enrichment, to prepare for admission to professional or graduate colleges, or to complete a specified technological certificate program. Students enrolled in courses as special students are subject to the rules of the college for academic probation and disqualification. Courses taken by special students may not be used to satisfy the residence requirement for a baccalaureate degree from the College of Liberal Arts.

Re-Entry

Students who have been absent from the University for 12 months or more must apply to the Office of Admissions for re-entry. Students who have been absent for less than 12 months and desire to re-enter an application for re-entry, they should report directly to the Registrar's Center to begin the registration process.

Students who have been excused in another college or university after losing 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 fewer deadlines and may complete an interview to the office of Academic Programs. See "Requirements to the college" under "Academic Standards" in this section of the catalog.

Credit for Military Service

The admissions officer is authorized to evaluate transcripts from the military services according to the recommendations contained in the American Council on Educator's Guide to the
Evaluation of Experience in the Armed Forces, with the understanding that the American experiences may be accepted. For credit by examination, a student's transcripts must be submitted to the Office of Academic Records. Contact the Office for specific requirements.

Credit by Examination

A maximum of 32 semester hours of credit by examination from all approved sources is accepted toward the 124 semester hours required for graduation. Credit by examination may be taken as elective credit if it may be applied toward the General Education Requirements or requirements in the major or minor. Credit awarded through the Foreign Language Placement Program is considered credit by examination.

A student must have earned 12 semester hours of graded, classroom credit at The University of Iowa before credit by examination is granted and must have a cumulative GPA of 2.0. Students must meet the University’s residence policy, and students must be enrolled in at least one course each semester the credit by examination is granted.

Placement and Exemption

Examinations for General Education

Full or partial exemption from the requirements in humanities, mathematics, physical education, or foreign language may be awarded by satisfactory performance on tests administered at The University of Iowa. In addition, examinations in academic and academic credit may be awarded in most general education courses on examinations administered by the Advanced Placement Program (AP), CLEP, or the General College-Level Examinations Program (CLEP). See below.

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 credit by examination that may be awarded in the major field is 16 semester hours. Credit toward graduation may be granted for language majors only for passing examinations covering the third and fourth semesters or level above.

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 take an AP testing program to demonstrate their level of achievement. This program was designed by the College Board to provide a model for colleges and universities to evaluate the college-level preparation of participating students and to provide opportunities for advanced students to begin college-level study while still in high school.

Exams earned by students are evaluated to determine whether course credit or advanced placement is warranted. Credit awarded through APP may be applied to the General Education Requirements, to requirements in the major or minor, or to elective credit.

Specific credit policies and additional information is available from the University’s Examination Services Office.

College-Level Examination Program (CLEP)

CLEP is an achievement testing program offered by the College Board that allows students to demonstrate college-level competence that may have been achieved outside formal college instruction. General examinations cover broad content areas such as natural sciences and social sciences/history; subject examinations cover more narrow ranges of content, typically dealt with in a single college course. Scores on the general examinations can be used to determine whether students have satisfied all or a portion of the General Education Requirements. Credits earned through CLEP examination are fully transferable to the corresponding University course.

The CLEP program is administered by The University of Iowa's Examination and Exemption Service. Students who wish to participate in CLEP are encouraged to do so prior to their first enrollment so that test results can be used to plan their first semester schedule.

Transfer Credit by Examination

The College of Liberal Arts accepts transfer credit that includes APP and CLEP credit awarded by another institution. Although University of Iowa policies on the application of credit by examination may differ from those of the transfer institution, credit is neither added to nor subtracted from a student’s record; however, the way in which the credit is applied may differ.

Validation of Credit

Students with educational experience obtained at a nonaccredited institution or in a formal transfer program are allowed credit with a grade of P if no standardized procedure for evaluation of credit is known. Requests for review of the credit should be directed to the Office of Academic Programs, and the department concerned should be consulted for approval to take the approximate examinations.

Nondepartmental Courses

000:20 Conditioning for Competition

000:21 Intercollegiate Athletic Participation

000:22 Intramural Athletic Participation

000:108 British Life and Culture

000:106 Introduction to Religion, Geo. Secular Studies

Excel, cross-cultural perspectives on issues, geo. trends, faiths, cultures, denominations, religious, societal, environmental factors, policy implications. 3 S.H.

Aerospace Military Studies (Air Force ROTC)

Head: Lt. Col. James Carretto
Instructor: Capt. Dennis Brown, Capt. Mark Haggerty
Academic Adviser: Prof. Alan Brown, Capt. Mark Haggerty

The Department of Aerospace Military Studies 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 commissions them as officers 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.

Transfer credit policies may vary from college to college. Course credits accepted for transfer must be equivalent to similar courses at the University of Iowa. Students with credit by examination must complete a course in a military science dimension. Cadets on AFROTC scholarships must complete a course in English composition and two semesters of a minor in a European or Asian language. The College of Liberal Arts General Education Requirements must stipulate these requirements.

AFROTC offers two-, three-, and four-year programs. Afterward, the program usually gives students the opportunity to earn an AFROTC without obligations. It also gives them an advantage in the selection process for scholarships and POG membership.

There are three AFROTC program components: the professional officer course (POC), field training, and the general military course (GMC).

Professional Officer Course (POC)

The professional officer course (POC) consists of four semesters. The AFROTC student accepts into the POC to make a commitment to serve a minimum of four years as an Air Force officer. 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 at Iowa.

Leadership Laboratory

Leadership laboratory is a required and larger course. The laboratory provides leadership training that improves a cadet's ability to perform as a leader in the U.S. Air Force. To be considered a cadet must be enrolled in an academic class and in a POC course titled Leadership laboratory.
### General Military Course

The general military course (GMC) consists of a 1 semester hour course and a 23A course titled Leadership Laboratories during each semester of the first and sophomore years. Any student who meets AROTC qualifications and is in good academic standing with the University is eligible to participate in the GMC.

### Special Activities

The Cadet Corps sponsor many social events, including informal gatherings, dinner parties, and a military ball.

Cadets can join the Army Air Sports, a national professional honor society dedicated to developing leadership qualities and to serving the community.

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 beyond the classroom and gain a pay and allowances.

Selected AFR ROTC cadets may attend summer 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 $100 per month, tax-free. Applicants are selected on both objective and subjective factors. Students should apply directly to the professor of aerospace military studies.

All cadets in the last two years of AFR ROTC receive $1,000 per month, tax-free. AFR ROTC books and uniforms are furnished.

### 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.

### AFRICAN-AMERICAN WORLD STUDIES

**Chair:** Fredrick Woodard

**Professor:** From Nociers (English/African-American World Studies)

**Associate Professors:** Alon Babuky (Anthropology/African-American World Studies), Frederick Woodard (English/African-American World Studies)

**Assistant professors:** James Gibson (History/African-American World Studies), William W. Magee (Military History), Paul M. Strong (American Studies)

#### Informational Session

**AFRICAN-AMERICAN WORLD STUDIES Program** is interdisciplinary. It draws cooperating faculty from American studies, anthropology, art, education, English, French, geography, history, political science, Spanish and Portuguese, sociology, and women's studies.

The African-American World Studies Program focuses on the study of people of African ancestry in the North American colonies and the United States from the seventeenth century to the present. To provide a comprehensive view of that subject, the program also offers courses examining the African heritage and present relationships of African-Americans to Africans in other lands. Because a thorough understanding of African-American culture cannot be achieved through study restricted to the perspectives of a single discipline, all students in the program are required to pursue courses in both humanities and social sciences.

The African-American World Studies Program is continually expanding its perspectives by developing or cross-listing courses that fuse the knowledge drawn from many disciplines in the humanities and social sciences.

The program originated in 1969 through courses sponsored to foster awareness of the role of African-Americans in the development of the American and African-American history.

### Undergraduate Program

#### Bachelor of Arts

Students earning a Bachelor of Arts with a major in African-American Studies will have the following possibilities:


### Undergraduate Program

#### Bachelor of Arts

Graduate programs offer students the opportunity to pursue advanced degrees in African-American studies. The programs focus on the study of African diaspora cultures, African-American history, and the influence of African culture on the development of African-American communities.
The African-American studies option focuses on bringing to bear critical attention to their culture and history in relation to their role in and impact upon the world. The African-American world studies option places greater emphasis on the interrelationships of Black society and the culture in various places in the world. The African-American studies option emphasizes on Africa. Students must earn a grade point average of 2.00 or higher to be considered in their major program.

African-American Studies Option

REQUIRED COURSES
- 120:06 Introduction to African Studies 3.0
- 120:01 Introduction to African-American Culture 3.0
  For majors in the program, 120:0-61 are prerequisite to 120:American Literature I and II, African-American History I and II, and Senior Seminar. 3.0
- 120:116 African-American Literature I 3.0
- 120:117 African-American Literature II 3.0
- 120:160 African-American History I 3.0
  Before 1865 3.0
- 120:166 African-American History II 3.0
  After 1865 3.0
- 120:80 Critical Skills Seminar 3.0
- 120:209 Senior Seminar 3.0

ELECTIVES
Students must take 6 semester hours of electives in 120:0 or 120:175, or 120:176. Students are encouraged to take at least 2 semester hours of these electives in courses focused on Blacks in Africa or the Caribbean.

LANGUAGE REQUIREMENTS
The language requirement for the African-American studies option is the same as the College of Liberal Arts foreign language General Education Requirement for the B.A. See the College of Liberal Arts introductory section of the Catalog.

African-American World Studies Option

REQUIRED COURSES
- 120:8 Literatures of the African People 3.0
- 120:60 Introduction to African Studies 3.0
- 120:61 Introduction to African-American Culture 3.0
- 120:71 Social Science Perspectives on Contemporary Africa 3.0
  For majors, these four courses are prerequisite to the advanced required courses in history and literature and to the Senior Seminar. 3.0
- 120:116 African-American Literature I 3.0
- 120:117 African-American Literature II 3.0
- 120:119 African Literature 3.0
- 120:163 History of Pre-Colonial Africa 3.0
- 120:164 History of Colonial Africa 3.0

ELECTIVES
Students must earn 6 semester hours of electives in 120:06 and one of the following courses, not including 120:116, 120:175, or 120:176. 3.0

LANGUAGE REQUIREMENTS
The language requirement for the African-American world studies option is four semester hours, or the equivalent, in any language, other than English, that is regularly spoken in Africa. Students who currently study at The University of Iowa that satisfy this requirement are French, Portuguese, Spanish, and Swahili.

African Studies Option

This option is administered jointly by the chair of the African-American Studies Program and the chair of the African Studies Program in consultation with the facilities of their respective programs. Students in this option are advised by the chair of the African-American World Studies Program. The program consists of 33 semester hours of coursework in addition to four semester hours, 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.

ELECTIVES
- 141:7 Introduction to African Studies 3.0
- 120:163 History of Pre-Colonial Africa 3.0
- 120:164 History of Colonial Africa 3.0
- 120:80 Critical Skills Seminar 3.0
- 120:160 Advanced Undergraduate Seminar in African Studies 3.0
  (usually taken during the senior year)

LANGUAGE REQUIREMENTS
Currently Swahili is the only African language offered at The University of Iowa.

120:10 Elementary Swahili I (3.0)
120:118 Intermediate Swahili II (3.0)
120:119 Advanced Swahili III (3.0)

Students also may fulfill the language requirements by demonstrating competence in another African language. Students who declare the African studies option before fall semester 1990, and who already had achieved sufficient credits by that time, may fulfill the requirement by taking four semester hours or the equivalent in French, Portuguese, or Spanish.

Humanities Electives

Two courses (6 semester hours) must be taken, one of which must be a 1000-level course and one of which must be a 3000-level course. 3.0

141:50 Introduction to African Art 3.0
141:107 Art of West Africa 3.0
141:108 Art of Central Africa 3.0
141:202 Seminar: Problems in African Art 3.0
141:123 Topics: Modern African History 3.0
141:124 Women in African History 3.0
141:128 Languages of the African Peoples 3.0
141:160 African Drama 3.0
141:119 African Literature 3.0
141:126 Medicinal Uses of the African Diaspora 3.0
141:159 African Art: A Comprehensive Survey 3.0
141:227 Three African Writers 3.0
141:240 African Studies 3.0

Pre-colonial Literature 3.0

Social Science Electives

Two courses (6 semester hours) must be taken, one of which must be a 1000-level course and one of which must be a 3000-level course. 3.0
141:71 Social Science Perspectives on Contemporary Africa 3.0
141:140 African Development 3.0
141:148 The Politics of Southern Africa 3.0
141:157 Peoples and Cultures of Africa 3.0
141:158 Myth, Magic, and Mist 3.0
141:150 Anthropology of African Art 3.0

African Content Elective

One course (3 semester hours) must be taken, one of which must be an African studies or a history of a significant African content, chosen from the following. 3.0

His 2 Art of Africa, Oceania, and Pre-Columbian America 3.0
30:150 The Political Economy and the Third World 3.0
45:273 Women and Social Change: International Development Perspectives (same as 131:273) 3.0
44:250 World Cities 3.0
44:150 Cultural Geography: Health Services 3.0
44:250 Urban World Development Support (same as 131:159) 3.0
44:150 Planning and Geography of Underdevelopment (same as 120:163) 3.0
44:250 Political Economy of Regional Development 3.0
44:254 Agrarian Change and Rural Development of the Third World 3.0
91:296 Law as Radically Different Cultures 3.0

Diapora Elective

One course (3 semester hours) must be taken, one of which must be a course offered by the African-American World Studies Program with "African-American Cultural Studies" in the section of the Catalog. 3.0

Honors

The African-American studies honors program operates on the opportunity to pursue special interests in individual, in-depth research. Students candidates for African-American 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 contributes a project under the guidance of a supervising faculty member and may register for up to 6 semester hours in 129-155, Honors Project. Results are presented in a senior essay or 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 twelfth week of the student's last semester.

Minor

The African-American World Studies Program offers an undergraduate minor in African-American studies. The requirements consist of the general requirements for minors in the College of Liberal Arts. In consultation with their advisor, students select 15 semester hours (five courses) designated African-American world studies courses. Effective at the beginning of the Fall Semester 2008, students will be required to take 4 courses in African-American music, art, or African art. All 15 semester hours of electives may be selected from the classes numbered above 100 in the course list below. Students should consult an advisor in the program to determine which courses numbered above 100 will be approved for the M.A.

Because the African-American world studies curriculum consists of courses that have the ability, interest, and resources, it is recommended that 4 of the 15 elective hours of electives be taken in courses in African-American world studies. Possible fields of study are African-American studies, anthropology, education, English, geography, history, and sociology. See an advisor to select at least one or more 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 Bachelor of Arts program in African-American studies, but students considering doctoral study in another field are encouraged to complete one language/tool requirement for that field while studying in the major.

Comprehensive Examinations

Each student is required to pass a written comprehensive examination in African-American studies. The comprehensive examination is prepared and evaluated by a committee of faculty members who teach courses in the African-American World Studies Program. A component of the comprehensive examination is based on reading a list prepared by the student and approved by the African-American World Studies Program. An oral examination may be required as a follow-up to the written examination.

Thesis/Project Requirements

A thesis is not required but is an option for a Master's in African Studies. If a student elects to write a thesis, the thesis must explore a topic of African-American culture and/or experience and must use resources from more than one discipline. The maximum credit for a thesis is 4 semester hours.


Admission

In addition to the general requirements of the Graduate College, candidates for graduate admission to the African-American Studies Program must have an appropriate educational background in African-American literature and the social sciences, at least six semester hours of college-level credit in African-American literature and/or history courses, and a minimum grade-point average of 3.70 in previous college courses in African-American studies. Students may be asked to take, without credit toward the master's degree, courses needed to remedy deficiencies in 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 African-American Studies Program.

Concentration in American Studies Ph.D.

Generally, a student seeking a Ph.D. in American studies with a concentration in African-American studies would need to be a teacher or research scholar in the college of university level.

Ordinarily, students seeking a concentration in African-American studies take a minimum of 36 semester hours of graduate study in African-American world studies, identify two African-American studies fields within their plan of study, and write a dissertation on a topic in African-American culture. As African-American studies field is defined as in one in which the major portion of courses are chosen from those listed under "Concentrations" at the end of this section of the Catalog; Students interested in such a concentration should consult both the chair of the African-American Studies Program and the chair of the American Studies Program 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 history, English, and other disciplines. For further details, consult an advisor in the African-American Studies Program.

Related Courses

Although there are not offered by the African-American Studies Program, the following courses are recommended for interested students. For course descriptions, see...
the appropriate departmental sections of the Catalog.

ANTHROPOLOGY
113:151 Socioculture of the Third World 3 s.h.

ART AND ART HISTORY
19:202 Seminar: Problems in African Art 20 s.h.

BUSINESS ADMINISTRATION
61:252 Collective Bargaining 3 s.h.

COMPARATIVE LITERATURE
48:59 Non-Western Literary Traditions 3 s.h.
48:100 Cultural Identity in Caribbean Literature 3 s.h.

EDUCATION
73:104 Education in the Third World 23 s.h.
73:109 Educational Sociology 23 s.h.
73:154 Education, Race, and Ethnicity 23 s.h.
73:33 The Culturally Different in Diverse Settings 2 s.h.

GEOGRAPHY
44:137 Third World Development Support 3 s.h.

HISTORY
16:61 American History 1492-1877 3 s.h.
16:62 American History 1877-Present 3 s.h.
16:127 American Intellectual History 1697-1865 3 s.h.
16:128 American Intellectual History Since 1870 3 s.h.
16:163 United States in the Early Republic 3 s.h.
16:164 Civil War and Reconstruction 3 s.h.
16:155 The United Age in America 3 s.h.
16:166 The Progressive Era In America 3 s.h.
16:167 The New Era and The New Deal 1930-1940 3 s.h.
16:168 The Contemporary United States 1945-Present 3 s.h.

PHYSICAL EDUCATION AND SPORTS STUDIES
28:156 Inequality in Sport 3 s.h.

POLITICAL SCIENCE
30:146 African Development 3 s.h.
30:148 The Politics of Southern Africa 3 s.h.
30:150 The Political Economy of the Third World 3 s.h.

PSYCHOLOGY
34:105 Social Inequality 3 s.h.

SOCIAL WORK
42:147 Racism and Discrimination 3 s.h.

Co-curricular Activities
Black Action Theater
Academically sponsored through the African-American World Studies Program. Black Action Theater gives participating instruction and experience in dramatic productions of works by Black authors.

Afro-American Cultural Center
The African-American World Studies Program 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 students of the city community and a cultural meeting place for Black students. It also attempts to provide a knowledge of Black culture that will promote interracial understanding.

GRADUATE STUDENT ASSOCIATION
The African-American World Studies Student Association attempts to promote interest in Black culture by sponsoring programs of various topics. Any University of Iowa graduate student interested in African-American world studies is eligible to become a member.

Courses
For Undergraduates
129:300 Cooperative Education Internship 5 s.h.
129:428 Libraries of the African People 3 s.h.
129:556 Readings in African Studies 3 s.h.
129:562 Contemporary Black Experience 3 s.h.
129:621 Readings in Black Women's Literature 3 s.h.
129:660 Readings in African-American Literature 3 s.h.
129:661 Readings in African-American Literature 3 s.h.
129:662 Readings in African-American Literature 3 s.h.
129:663 Readings in African-American Literature 3 s.h.
129:664 Readings in African-American Literature 3 s.h.
129:665 Readings in African-American Literature 3 s.h.
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129:668 Readings in African-American Literature 3 s.h.
129:669 Readings in African-American Literature 3 s.h.
129:670 Readings in African-American Literature 3 s.h.
129:671 Readings in African-American Literature 3 s.h.
129:672 Readings in African-American Literature 3 s.h.
129:673 Readings in African-American Literature 3 s.h.
129:674 Readings in African-American Literature 3 s.h.
129:675 Readings in African-American Literature 3 s.h.
129:676 Readings in African-American Literature 3 s.h.
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129:696 Readings in African-American Literature 3 s.h.
129:697 Readings in African-American Literature 3 s.h.
129:698 Readings in African-American Literature 3 s.h.
129:699 Readings in African-American Literature 3 s.h.
129:700 Readings in African-American Literature 3 s.h.
129:701 Readings in African-American Literature 3 s.h.
129:702 Readings in African-American Literature 3 s.h.
129:703 Readings in African-American Literature 3 s.h.
129:704 Readings in African-American Literature 3 s.h.
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129:711 Readings in African-American Literature 3 s.h.
129:712 Readings in African-American Literature 3 s.h.
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129:714 Readings in African-American Literature 3 s.h.
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129:716 Readings in African-American Literature 3 s.h.
129:717 Readings in African-American Literature 3 s.h.
129:718 Readings in African-American Literature 3 s.h.
129:719 Readings in African-American Literature 3 s.h.
129:720 Readings in African-American Literature 3 s.h.
129:721 Readings in African-American Literature 3 s.h.
129:722 Readings in African-American Literature 3 s.h.
129:723 Readings in African-American Literature 3 s.h.
129:724 Readings in African-American Literature 3 s.h.
129:725 Readings in African-American Literature 3 s.h.
129:726 Readings in African-American Literature 3 s.h.
129:727 Readings in African-American Literature 3 s.h.
129:728 Readings in African-American Literature 3 s.h.
Financial Aid

Students are encouraged to apply for a Stackey Undergraduate Scholarship for International Research and Study through the Center for International and Comparative Studies. The scholarships are awarded to outstanding University of Iowa undergraduates who, in close consultation with a faculty mentor, propose a well-conceived research or network project on an international topic.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>143:17</td>
<td>Introduction to African Studies</td>
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<tr>
<td>143:14</td>
<td>Literature of the African Peoples</td>
<td>3.0</td>
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<tr>
<td>143:18</td>
<td>Economic Development</td>
<td>4.0</td>
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<tr>
<td>143:16</td>
<td>Extra-Curricular Activities</td>
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<tr>
<td>143:19</td>
<td>African Art</td>
<td>4.0</td>
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<tr>
<td>143:21</td>
<td>Social Science Perspectives on Contemporary Africa</td>
<td>3.0</td>
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<tr>
<td>143:23</td>
<td>Africa; Past and Present</td>
<td>3.0</td>
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<tr>
<td>143:25</td>
<td>Art of West Africa</td>
<td>3.0</td>
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<td>143:26</td>
<td>African Political Economy</td>
<td>3.0</td>
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<td>143:29</td>
<td>History of the Colonial African</td>
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<td>Modern African History</td>
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<td>143:43</td>
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AGING STUDIES PROGRAM

Coordinator: Veronica McLean
Advisory committee: Lizanne Druker (Social Work)
Advisory committee: Patricia Adkins (Liberal Arts), Jo Harriss (Liberal Arts), Andrew B. Webb (Business Administration), J. Fred Smith (Business Administration), Charles Heckscher (School of Social Work), Bruni Knessler (Graduate Program Office), Edward John (Graduate Program Office), Richard J. Binion (Psychology), Bernard Cohn (Economics), Martin Terry (Social Work), Thomas R. Wex (Sociology, Anthropology)

Programs

Certificate

The certificate in aging studies requires 18 approved semester hours of coursework related to aging at the 100 level or above. This course-specific work is defined as courses from the University that focus primarily on older persons, the aging process, or intervention methods or techniques whose target is the older adult or aging.

Students are required to take an introductory aging course and complete either a research project or a practicum course. With the approval of their major department, students may apply coursework to their major or professional program of study. At least 6 semester hours must be taken outside the major department.

Requirements

Students should take the introductory aging 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 opens to all University graduate students in good standing. Students must complete at least 45 semester hours, and special status students whose careers move rapidly and need flexibility in course requirements are welcome.

The coordinator meets with each student's academic advisor on an individual basis to review the student's program and adjust the requirements for the program, considering the student's academic goals and needs.

Minor

Undergraduate students in the Colleges of Liberal Arts, Business Administration, Nursing, Engineering, or Education may complete a minor in aging studies by taking 15 semester hours in coursework outside of their major department or college. The courses must be approved by the Aging Studies Program; the minor must be approved by the college's undergraduate coordinator. At least 1 of the 15 semester hours must be taken in seminars and courses that are offered at The College of Liberal Arts. Students must have a grade-point average of at least 2.0 to all work in aging studies.

Option for an Individualized Major

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 Individualized Program of Study. They must complete the program in accordance with the program's requirements. Students interested in this program should contact the program coordinator for information.

Course Requirements

For full descriptions of each of the courses listed below, see the listings in the appropriate departmental sections of the Catalog.

Course Code | Title | Credits |
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<td>Social Science Perspectives on Contemporary Africa</td>
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<td>143:23</td>
<td>Africa; Past and Present</td>
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<td>Art of West Africa</td>
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<td>History of the Colonial African</td>
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<td>Aging and Political Science</td>
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<td>143:59</td>
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For full descriptions of each of the courses listed below, see the listings in the appropriate departmental sections of the Catalog.
INTRODUCTORY COURSES
All students must take at least one and no more than two introductory courses. The introductory courses accepted in the program include:
42:108 Basic Aspects of Aging 3 s.h.
34:130 Aging and Society 3 s.h.
24:184 Multidisciplinary Perspectives on Aging 3 s.h.
96:129 Introduction to Gerontology 2.5 s.h.

PRACTICUM AND RESEARCH COURSES
At least 3 semester hours in a practicum and/or research course are required and no more than 6 are accepted to meet the requirements of the Aging Studies Program. Practicum and research courses include the following:
42:180 Field Work in Gerontology 3 s.h.
96:133 Practicum in Social Services 3 s.h.
96:143 Leadership, Management, and Research in Nursing Practice 3 s.h.
Other departmental practicum or research courses are accepted if the context and focus of the course study is aging-specific.

ELECTIVE COURSES
Students may take elective courses to meet their particular needs and interests. Additional courses that fulfill the requirements for the program may be selected from the list below:

Anthropology
112:136 Aging: A Cross-Cultural Perspective 3 s.h.
113:137 Women, Men, and Aging 3 s.h.
113:147 Special Topics in Anthropology: Health, Environment, and Education in Later Life 3 s.h.

Ecological Sciences
2.271 Seminar in Cell Physiology: History of Aging 2 s.h.

Counselor Education
73:200 Topical Seminar in Counselor Education 1 s.h.

Dentistry
112:145 Introduction to Geriatric Dentistry 2 s.h.

Health and Hospital Administration
86:308 Long-Term Care Administration 3 s.h.

Internal Medicine
78:805 Geriatric Seminars 1 s.h.

Leisure Studies
104:100 Exercise Program for Special Populations 3 s.h.
104:111 Contemporary Issues in Recreation and Leisure 3 s.h.
104:122 Aging and Leisure 3 s.h.
104:155 Health Promotion and Wellness for Older Adults 3 s.h.

Nursing
95:306 Human Development and Behavior 3 s.h.
95:110 Life and Death in Clinical Nursing Practice 3 s.h.

96:130 Normative and Pathopsychological Aspects of Aging 3 s.h.
96:230 Gerontological Nursing I 4 s.h.
96:231 Gerontological Nursing II 4 s.h.

Physical Education and Sports Studies
39:160 Health Promotion and Aging 3 s.h.

Religion
32:153 Introduction to Biblical Ethics 2 s.h.
32:193 Suffering, Death, and Faith 2 s.h.

Sociology
42:195 Social Policy and the Elderly 3 s.h.
42:199 Selected Topics in Social Work and Social Welfare 3 s.h.
42:223 Social Policy Review in Health Care 2 s.h.
42:280 Human Behavior: Selected Topics 3 s.h.

Sociology
34:145 Social Psychology of Aging 3 s.h.
43:230 Sociology of the Family 3 s.h.
45:233 Aging and Human Development 3 s.h.

Speech Pathology
3:163 Communication Disorders and Aging 2 s.h.
3:330 Seminar: Communication Disorders and Aging 2 s.h.

*Same, but not all, of the material in these courses deals with aging. Only a portion of the course fulfills the major requirements for the Aging Studies Program. See program office for details.

AMERICAN STUDIES PROGRAM
Chair: Wayne Frishke
Professor: Mary Frischke (American Studies, English, History, Political Science, Economics)
Professor: Alexander C. Stief (American Studies, History, Political Science, Economics, English, Philosophy, History, Social Sciences)
Assistant Professor: Mary K. Scudder (American Studies, History, Political Science, Economics, English, Geography, History, Social Sciences)

American Studies draws additional cooperating faculty from the Programs in African-American Studies, Urban and Regional Planning, and Women's Studies; the Departments of Anthropology, Communication Studies, Economics, English, Geography, History, Social Sciences, Linguistics, Philosophy, Physical Education and Sports Studies, Political Science, Psychology, Sociology, and Theatre Arts; the Schools of Art and Art History, Journalism, and Mass Communication, Music, Religion, and Social Work; and the College of Education.

The American Studies Program provides an interdisciplinary introduction to American culture, past and present. It helps students understand the evolution of culture and its interaction 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 interpretation. Although there is no explicit vocational training, the program provides preparation for a career in business, education, government, journalism, or social service; for advanced study in the humanities, the social sciences, theology, or business; or for professional studies in law or medicine. Internships can be arranged.

Plan of Study
American studies majors develop individual plans of study that combine courses from cognate departments with American Studies Program offerings. Proposed plans of study are reviewed by the American Studies Program faculty to ensure that they are manageable and flexible.

Prospective American studies majors are required to submit a preliminary one-to-two-page plan of study, which must be approved before they can be considered for admission to the major. Each plan of study should indicate what the prospective student wants to undertake and how the American studies major is aligned with an 18-semester-hour area of specialization in American studies. The area of specialization should be interdisciplinary and should focus on a theme, problem, body of materials, group of people, or time period in American life. It also should integrate various approaches to the chosen topic as represented by relevant courses from multiple disciplines.

Plans of study may be submitted for approval at any time during the first semester of undergraduate study in the American Studies Program. All approved plans of study are reviewed regularly throughout each semester.

If the director of undergraduate study does not approve a plan of study, the student may revise and resubmit the plan at any time. In some cases, students may be referred to a more appropriate departmental major. Students who wish to appeal the director's decision may submit the plan of study and an accompanying letter to the American Studies Advisory Committee.

Required Courses
The major usually consists of 12 courses totaling 36 semester hours. Students are especially encouraged to complete courses in women's studies and African-American studies. Courses in American studies must include: 45-45 American Values and 45-45 Seminar in American Studies. Requirements are as follows:

American studies core 14 courses, including 45-45 and 45-45) 12 s.h.
American history 2 courses 6 s.h.
Liberal Arts • American Studies Program

Area of concentration (6 courses in American studies or other departments) 18 s.h.

General education courses in historical perspectives, humanities, literature, and social sciences provide relevant preparation for the American studies major. Total 9-9 American Love is especially recommended.

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 advisor, the honors candidate defines a research project using primary sources. Project proposals should be made by the end of the student's junior year. Each candidate chooses the project under the guidance of a supervising faculty member and must register for up to 5 semester hours in 4100 Honors Project.

Results of research project are presented in a master 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. The honors advisor is the supervising faculty member. The candidate may select second and third faculty members. The candidate's committee may choose to limit their oral defense to the final day of the project, usually in the third 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 minimum grade-point average of 2.00. At least 12 of the 15 semester hours must be taken at The University of Iowa in courses numbered 450-100 and above, but 450-00 may count toward this requirement.

Graduate Programs

Master of Arts

The M.A. in American studies may be a terminal degree or a degree of preparation for the Ph.D. in American studies or a traditional discipline.

The M.A. program in American studies includes 12 courses usually totaling 36 semester hours. Requirements include:

- 450-200 (2) Theory and Practice in American Studies I & II (15 semester hours) [but at least two other courses (15 semester hours) above in American Studies, six to eight additional courses selected in relation to a major 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 some work in African-American world studies and women's studies; and satisfactory performance in 445-00 Masters Preparation (3 s.h.), which includes a comprehensive examination on coursework and basic concepts. The M.A. also may be taken with thesis, in which case a student may receive up to 6 semester hours of their credit. Students should consult the program catalog for details.]

A joint program leading to the M.A. in American studies and the J.D. from the College of Law provides a four-year 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 coursework that provides a core of American studies courses in interdisciplinary methods and advanced coursework in three major fields. Course requirements are as follows:

- 450-200 (2) Theory and Practice in American Studies I & II 6 s.h.
- First field (6 courses) 18 s.h.
- Second field (6 courses) 18 s.h.
- Third field (6 courses) 18 s.h.
- Electives

Although permitted considerable flexibility in planning a program, American studies Ph.D. candidates must meet certain basic requirements. One is that through coursework and reading, all students address the cultural diversity of American life. Since race and gender issues are specifically taught on one of the comprehensive examinations, some other coursework is required in African-American world studies and women's studies.

Students also write a thesis proposal that emphasizes a particular period of American cultural history. Finally, a dissertation is considered either background to or the center of all doctoral programs.

Finally, students must complete significant coursework in American studies (450-200-3) Theory and Practice in American Studies). It is accompanied during the first year of graduate study. Also take at least two additional graduate courses in American studies are required. These courses provide interdisciplinary training and background for a position that is required for the Ph.D. comprehensive examination.

Students must work carefully with advisors to be sure each major field is well-represented in the coherent plan of study.

Admission to Ph.D. Candidacy

A student's plan of study and evaluation by instructors must be presented to the American studies faculty for review after about 30 semester hours of coursework have been completed. Students who have been accepted to Ph.D. candidacy should finish the courses required in the plan of study and prepare for comprehensive examinations.

Comprehensive Examinations

Tech fields must include at least 6 courses (18 semester hours) including literature. In field, students should consider covering one each of the fields of American studies, interpretive theory, comparative studies, or a thesis and courses in women's studies and African-American world studies, but also a foreign language, media production skills (e.g., photography, video), and interdisciplinary.

Comprehensive examinations of two of the fields of all major American studies students will consist of the written examination or, with the consent of the candidate, an written essay over the course of a single semester. The third field is tested through an announced bibliography. The oral portion of the thesis/interim examination focuses on the position paper, the two written examinations or essay, and the announced bibliography.

Thesis

The final requirement for the Ph.D. in American studies is preparation of an acceptable thesis on a topic whose investigation involves more than one field or discipline. The candidate may petition to present a creative thesis, such as a fiction, microfilm, or film, combined with a critical analysis of the cultural experiences the thesis reflects. Permission to prepare such a thesis is granted only by the American Studies Steering Committee.

Internships

Graduate students in American studies can arrange internships with a number of local agencies, including the Iowa Historical Society of Iowa, the Des Moines Art Center, The University of Iowa Museum of Art, the Iowa Humanities Board, Living History Farms, the Herbert Hoover National Historical Site, and the Pulitzer Museum. Internships in Chicago can be negotiated with Hull House, Newberry Library, Church of Chicago, Spiros Museum of Joliet, DuSable Museum of African-American History, and Thanksgiving Education Trust. With special permission, credit can be earned through a well-designed plan of study or work on the job training such as access to academic credit through 410-00 Independent Study or 450-50 Independent Study. Other internships are in social agencies, government, or business files may be arranged.

Courses

Primarily for Undergraduates

45-000 Comparative Education Internship 0 s.h.

45-300 American Values 3 s.h.

45-363 Irony, Satire, and Social Criticism in American and Comparative Perspectives 3 s.h.

45-400 American Issues 3 s.h.

45-200 African-American Issues 3 s.h.

45-300 American Issues 3 s.h.

45-300 African-American Issues 3 s.h.

45-363 Irony, Satire, and Social Criticism in American and Comparative Perspectives 3 s.h.

45-353 Race and Ethnicity in the U.S. 3 s.h.
and culture, medical anthropology, religious activity in folk and tribal settings, gender, biological anthropology, expressive culture (art, literature, music, and dance), human evolution, environment and culture, and urban anthropology. Department faculty members offer electives courses on Africa, China, Oceania, Southeast Asia, Latin America, the Caribbean, Japan, and Native North America.

Specialization is discouraged in the undergraduate program, which is designed to give students the broadest possible cultural background. Course work is encouraged in related disciplines such as sociology, linguistics, geology, geography, history, art history, psychology, biological sciences, and foreign languages. Students are also encouraged to participate in anthropological field and laboratory research and in biological and linguistic anthropology research.

Honors

The honors program in anthropology is open to students with a minimum cumulative grade-point average of 3.20 (both overall and to anthropology). In addition to the regular requirements for a major in anthropology, honors students complete an honors seminar or graduate-level course and an honors research project. Consult the department honors advisor for more information.

Minor

To minor in anthropology, students must complete a minimum of 12 semester hours in anthropology with a minimum grade-point average of 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 four program tracks: general anthropology (thesis or report); economic anthropology; archaeological anthropology (thesis only); and biological anthropology with a concentration in museum studies. The M.A. program without thesis requires satisfactory completion of the Ph.D. program at Iowa.

The number of semester hours of credit required for the M.A. with thesis varies from 30 to 40, depending on the student's previous anthropological training. The nonthesis program requires at least 35 semester hours of graduate work. The department also offers a 30-semester-hour M.A. without thesis in anthropology with a concentration in museum studies. No more than 9 semester hours of courses outside of anthropology and no more than 1 semester hour of independent study may be applied toward the M.A. requirements in anthropology.

Students, with previous training in anthropology, who have undergone major may petition for permission to waive any part of the distribution requirements listed below.

The following are the requirements for each M.A. program track.

**General Anthropology**

(Thusis or report)

- 113:140 Anthropological Data Analysis 3 s.h.
- 113:171 Anthropological Linguistics 3 s.h.
- 113:240 Seminar: Sociocultural Anthropology 3 s.h.
- 113:268 Seminar: Archaeological Theory and Method 3 s.h.
- 113:269 Seminar: Biological Anthropology 3 s.h.

Students also must take one additional course in anthropology. Students may also take one course from each of the following subject areas, for a total of 6 semester hours:

- 113:268 Seminar Anthropology (courses listed under Social Institutions)
- 113:269 Seminar Biological Anthropology (excluding laboratory course)

**Economic Anthropology**

(Thesis only)

- 113:126 Anthropological Data Analysis 3 s.h.
- 113:240 Seminar: Sociocultural Anthropology 3 s.h.
- 113:268 Seminar: Archaeological Theory and Method 3 s.h.

Students also must take one course from each of the following subject areas, for a total of 9 semester hours:

- 113:135 Work and Society 3 s.h.
- 113:141 Economic Anthropology 3 s.h.
- 113:158 Economic and Political Development: Women's Roles 3 s.h.
- 113:263 Sociology of the Third World 3 s.h.
- 113:275 Development Policy and Planning in the Third World 3 s.h.
- 113:143 Environment and Culture 3 s.h.
- 113:160 Environmental Anthropology 3 s.h.
- 113:164 Comparative Polynesian 3 s.h.

**Femaleist Anthropology**

(Thesis only)

- 113:190 Feminist Perspectives on Biology and Culture 3 s.h.
- 113:220 Seminar: Feminist Anthropology 3 s.h.
- 113:240 Seminar: Sociocultural Anthropology 3 s.h.

Students also must take three courses from the following subject areas, for a total of 9 semester hours:

- 113:138 Economic and Political Development: Women's Roles 3 s.h.
- 113:156 Women's Roles in Cross-Cultural Perspective 3 s.h.
- 113:221 Seminar: Feminist Theory 3 s.h.

**Linguistic Anthropology**

(Thesis only)

- 113:171 Anthropological Linguistics 3 s.h.
- 113:201 Seminar: Anthropological Linguistics 3 s.h.

**Archaeological Theory and Method**

- 113:268 Seminar: Archaeological Theory and Method 3 s.h.

**Biological Anthropology**

- 113:269 Seminar: Biological Anthropology 3 s.h.

**M.A. in Anthropology with a Concentration in Museum Studies**

In cooperation with the Program in Museum Studies, the Department of Anthropology offers a master's program of study leading to an M.A. in anthropology with a concentration in museum studies. In addition to the specialization and management of museums with emphasis on exhibit design, curating, and educational outreach development, the program facilitates the graduate program.

**Required Courses**

**Anthropology**

- 113:240 Seminar: Sociocultural Anthropology 3 s.h.
- 113:269 Seminar Biological Anthropology 3 s.h.
- 113:268 Seminar Archaeological Theory and Method 3 s.h.

**Electives in Anthropology**

- 113:300 Museum Internship 3 s.h.

**Museum Studies**

- 214:102 Introduction to Museology 3 s.h.
- 214:104 Principles of Exhibit Design 2 s.h.
- 214:106 Museum Laboratory Methods 2 s.h.
- 214:113 Introduction to Conservation of Museum Objects 2 s.h.
- 214:145 Administration and Organization of Museums 1 s.h.
- 214:150 Directed Studies and Projects 2-3 s.h.

**United States**

- 214:102 Introduction to Museology 3 s.h.
- 214:104 Principles of Exhibit Design 2 s.h.
- 214:106 Museum Laboratory Methods 2 s.h.
- 214:113 Introduction to Conservation of Museum Objects 2 s.h.
- 214:145 Administration and Organization of Museums 1 s.h.
- 214:150 Directed Studies and Projects 2-3 s.h.

**United States**

- 214:102 Introduction to Museology 3 s.h.
- 214:104 Principles of Exhibit Design 2 s.h.
- 214:106 Museum Laboratory Methods 2 s.h.
- 214:113 Introduction to Conservation of Museum Objects 2 s.h.
- 214:145 Administration and Organization of Museums 1 s.h.
- 214:150 Directed Studies and Projects 2-3 s.h.

**Museum Studies**

- 214:102 Introduction to Museology 2-3 s.h.
- 214:104 Principles of Exhibit Design 2-3 s.h.
- 214:106 Museum Laboratory Methods 2-3 s.h.
- 214:113 Introduction to Conservation of Museum Objects 2-3 s.h.
- 214:145 Administration and Organization of Museums 1-3 s.h.
- 214:150 Directed Studies and Projects 2-3 s.h.

**Specialized Electives**

- 214:107 Museum Laboratory Methods 2-3 s.h.
- 214:109 Museum Management 2-3 s.h.
- 214:111 Introduction to Conservation of Museum Objects 2-3 s.h.
- 214:145 Administration and Organization of Museums 1-3 s.h.
- 214:150 Directed Studies and Projects 2-3 s.h.

**Doctor of Philosophy**

Graduate training in anthropology or the Ph.D. level is designed to lead to professional competence in scholarly research and teaching. Students at The University of Iowa currently may select specializations in all four subfields of anthropology: archaeological, biological, linguistic anthropologies, and sociocultural anthropology. Training in a specialization is guided by a Ph.D. committee composed of appropriate faculty members. Students work closely with their committee to plan a program consistent with their scholarly interests.
Anthropology • Liberal Arts 71

The requirements are:

at least 72 semester hours of graduate course work; students specializing in sociocultural anthropology must take 113:201 Seminar: Anthropology; a demonstration of a reading knowledge of one foreign language; an ethnographic or archaeological specialization in a major geographic area (for example, North America, Mesoamerica, South America, Oceania, Southeast Asia, the Caribbean, Europe, Africa) approved by the student's Ph.D. Advisory Committee; specialization in a major and minor topical area; a written comprehensive examination in the student's area of specialization; and preparation and one defense of a dissertation. The major topical area is the area of "theoretical concentration and orientation for the dissertation. Topics that they serve either as major or major areas in cultural or linguistic anthropology include kinship and social organization, ethnohistory, economics, anthropology, political anthropology, cultural anthropology, cultural development, anthropological and sociological techniques, cultural anthropology, linguistic anthropology, and medical anthropology. Major spatial areas for students in anthropology include settlement archaeology, geological anthropology, and dating methods. Those for students in biological anthropology include human evolution, primate evolution, primate behavior, and primate anatomy. The comprehensive examination ordinarily is taken when the student's course work is completed. However, a foreign language requirement may be met, and for some students beginning coursework, all doctoral candidates are required to carry out their original research. Currently, students conduct fieldwork as the basis for their dissertations; occasionally, however, a research project or training in the field of teaching and research assistantships in the form of teaching and research assistantships during a portion of their studies is chosen. Application for such awards should be made directly to the department chair.

Field Research

Opportunities are available for students to conduct fieldwork in Latin America, Central Mexico, or the northwest states in the Midwest. Under the direction of University anthropologists, students may conduct archaeological recovery and recovery techniques. Occasional fieldwork in East and Southeast Asia is also available to graduate students in the paleoarchaeological research program.

Admission

Applicants for admission to the graduate program in anthropology are encouraged, 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 departmental requirements. Applicants with an M.A. in anthropology may apply for admission to the Ph.D. program. A student admitted while in an M.A. in anthropology from another institution may proceed directly to the specialized Ph.D. program. Students with an M.A. in another discipline may 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 the student's prior training.

Applications for admission to the graduate program must meet the general admission requirements of the Graduate College, as well as certain specific requirements of the Graduate College section of the Graduate Bulletin and are required to submit a completed University application form, transcripts of all previous undergraduate and graduate work, three letters of recommendation from individuals competent to judge their potential for graduate training, two from the student's graduate Record Examination (GRE) Aptitude Test, and at least two written examples of previous work (for example, a term paper or an original experiment). Applicants with an M.A. in anthropology 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. Students should have at least a 3.0 grade-point average. However, applicants with lower grade-point averages may be admitted conditionally subject to the advisor's indication of potential for graduate work.

Assistantships

Financial aid for incoming students are limited and highly competitive. Most graduate students receive Assistantships in the form of teaching and research assistantships during a portion of their studies. Application for such awards should be made directly to the department chair.

Facilities

The Department of Anthropology has access to the James Archaeological Collections through the Office of the State Archaeologist and maintains its own archaeological collections (Mesoamerican, prehistoric, and historical and comparative material). Individual faculty members maintain field laboratories and exhibit research facilities in the United States, including research facilities in the Northeast, including the Pennsylvania Institute of Archaeology and the Center for Pennsylvania Archaeological Research in Pennsylvania and the Laboratory of Ethnological Research at Pennsylvania and the Center for Pennsylvania Archaeological Research in Illinois. The department has also added archaeological laboratories for the study of languages, biological anthropology, and linguistics. Anthropology.

The University is a charter member of the Mesoamerican Research Forum (MARF), an extremely active network of academic institutions on the peoples of the world—their environments, their economies, social systems, and cultural.
are not part of its program. The school produces interest in diversity of styles and methodologies, offering major study areas of studio, history, and education.

**Studio**

The studio undergraduate major requires development of a foundation in art history, a basic understanding of aesthetics, and broad-based knowledge in at least six areas of studio art. Undergraduate students concentrating in studio begin in the program, leading to the B.A. degree. Transfer into the B.F.A. program is possible, usually in the junior year. The graduate program emphasizes independence of creative concept and style and encourages diversity in studio art and faculty. Graduate students in studio work toward the M.A. and M.F.A. degrees: They may concentrate in ceramics, design, drawing, fashion design and production, multimedia, and fine art, painting, photography, printmaking, and sculpture.

**Art History**

The graduate program in art history provides the essential basis for expression of critical issues and problems that are central to the discipline. A broad spectrum of courses covers the major developments in art and their fundamental importance to cultural and intellectual history throughout the world. Programs in art history include B.A., M.A., and Ph.D. degrees. Specialization is possible in areas of Western, African, and Asian art. The graduate program emphasizes independence of thought, a thorough knowledge of the field, and diverse critical methods. In fulfilling specific requirements students may apply for a "special field" in the Ph.D. and bypass the M.A. Degree objectives and prerequisites to the graduation of students into college/university teaching positions and research careers.

**Art Education**

The art education program prepares well-qualified undergraduate and graduate students for certification to teach art in grades K-12. Students who wish to understand more about the nature of learning in art and those who wish to teach art in museums, recreation centers, and other non-school institutions may elect courses in museum education. Art education students conduct case studies of individuals making and responding to art, observe art classrooms, and teach a Sunday children's workshop and participate in art-related residence programs in secondary schools.

Graduate programs in art education are a means for K-12 art teachers to advance their understanding of art, art education, and art history. Doctoral students usually prepare for positions as teachers in colleges, universities, and museums or as art administrators. The school's preserving and teaching of research on the arts is an especially valuable grant for graduate students in art education, providing them with the necessary personal aesthetic experience on which to base research. In the case of doctoral students, this breadth of preparation in art education, art history, and studio art makes them ideal candidates for teaching positions in colleges and universities. In addition, graduate students in art education have numerous opportunities to work within and beyond the university and in the community.

**Undergraduate Programs**

As much as possible, the design of academic programs is arranged to meet the students' individual needs, permitting the development of specific as well as general programs in studio arts and art history, and a program leading to teacher certification. The major requirements of the undergraduate program are broad and flexible; narrow specialization is discouraged. The size of the junior curriculum is to give all students a basic understanding of art, art history, and aesthetics; it does not focus on particular 'narrow' styles or fashions.

**Bachelor of Arts in Art**

B.A. students in art must earn at least 74 semester hours of credit in art. At least 24 of these must be in art courses, and the last 24 credit hours toward the 124 semester hours required for the degree. Cross-timed courses originating in the School of Art and Art History may not be counted toward art electives.

**Studio Emphasis**

The B.A. in art with studio emphasis requires the following courses and credits in art.

Two art history courses chosen from:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:11 Understanding the Visual Arts</td>
<td>3</td>
</tr>
<tr>
<td>11:05 Western Art and Culture</td>
<td>3</td>
</tr>
<tr>
<td>11:06 Western Art and Culture after</td>
<td>3</td>
</tr>
<tr>
<td>11:07 Art and Culture</td>
<td>3</td>
</tr>
</tbody>
</table>

Two additional courses exclusive of three courses listed above

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:09 Medieval Art</td>
<td>2</td>
</tr>
<tr>
<td>11:15 Undergraduate Sculpture</td>
<td>2</td>
</tr>
</tbody>
</table>

Two beginning courses, one each from two different studio areas not taken to satisfy the
requirements above, for a total of 4 semester hours. Beginning courses in art areas not listed above are at freshman level.

1D-21: Fundamentals in Design I—Form and Structure 2 s.h.
1D-22: Proseminar in Design II—Form and Function 2 s.h.
1D-25: Lettering I 2 s.h.
1D-26: Ceramics Design I 2 s.h.
1H-17: Life Drawing I 2 s.h.
1H-9: Painting I 2 s.h.
1H-14: Beginning Photography 3 s.h.
1M-21: Undergraduate Engraving and Relief I 2 s.h.

Electives, selected 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, or an art education to a minimum of 36 semester hours. No more than 50 semester hours of credit in the combined art history, studio art, or an art education combined may be counted toward the 124 semester hours required for the degree.

Transfer students majoring in studio must complete at The University of Iowa a minimum of 3 semester hours in art history and 12 semester hours in studio, in addition to the six basic studio courses required above and including at least two different studio areas.

Undergraduate transfer students majoring in studio must, at their first semester, present a portfolio to a faculty review committee, which will determine the student’s placement in art history and exemption from the sequence of basic studio courses.

Art History Emphasis

Major requirements for the B.A. in art with an emphasis in art history are as follows.

Studio courses - 9-12 s.h.

Two courses chosen from:
1H-1: Understanding the Visual Arts 3 s.h.
1H-3: Western Art and Culture before 1400 3 s.h.
1H-4: History of Western Art and Culture after 1400 3 s.h.
1H-10: Asian Art and Culture 3 s.h.
1H-11: Understanding the Visual Arts 3 s.h.
1H-3: Western Art and Culture before 1400 3 s.h.
1H-4: History of Western Art and Culture after 1400 3 s.h.
1H-10: Asian Art and Culture 3 s.h.

Intermediate and advanced art history 18 s.h.

Electives, selected 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, or an art education combined to a minimum of 36 semester hours. No more than 50 semester hours of credit in the combined art history, studio art, or an art education courses may be counted toward the 124 semester hours required for the degree.

Non-art credits must include at least 12 semester hours in at least three disciplines, including two of the following: anthropology, classics, drama, history, language, literature, music, philosophy, religion, or sociology.

Transfer students planning to major in art history should meet with the professor in charge of art history to discuss the student’s required minimum registration for courses in art history and studio.

Art Education

Students seeking (coursework certification in art education may choose either the studio or art history emphasis (with additional studio work). Electives used to bring the total combined credits in art history, studio, or an art education to the required minimum of 36 semester hours or the maximum 50 semester hours must be selected from courses that originate in the School of Art and Art History. In addition to the general requirements for teacher certification (see the College of Education section of the Catalog), students must satisfy the following requirements:

1B-196: Concept in Art Education 3 s.h.
1E-196: Art Education Studio 3 s.h.
7B-463: Methods in Art 3 s.h.
7B-453: Advanced Methods: Art 3 s.h.
7B-187: Seminar: Ceramics and Student Teaching 3 s.h.
7B-185: Special Area Student Teaching 6 s.h.
7B-197: Observation and Laboratory Practice in the Secondary School 6 s.h.

Students must elect to take 1E-230: Art Education and the Museum, for 3 semester hours.

Bachelor of Arts in Art History

The B.A. in art history requires the following courses and credits, for a total of 42-44 semester hours.

1H-5 Western Art and Culture before 1400 3 s.h.
1H-5 Western Art and Culture after 1400 3 s.h.

One course chosen from:
1H-52: Art of Africa, Oceania, and Pre-Columbian Americas 3 s.h.
1H-10 Western Art and Culture before 1400 3 s.h.
1H-12: Islamic Art and Civilization 3 s.h.
1H-13: Asian Art and Culture 3 s.h.
Four courses chosen from:
1H-20 Introduction to Asian Art 3 s.h.
1H-21 Introduction to Ancient Art 3 s.h.
1H-40 Introduction to Medieval Art 3 s.h.
1H-47: Renaissance and Reformation Art 3 s.h.
1H-53: Introduction to Baroque Art 3 s.h.
1H-52 Introduction to 19th Century Art 3 s.h.
1H-53 Introduction to 20th Century Art 3 s.h.
1H-56 Introduction to 20th Century Art 3 s.h.
Four courses chosen from 1H-102 - 1H-103 (12 s.h.-14 s.h.)

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.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 needed to graduate include 62 semester hours in studio. Students major in the School of Art and Art History and 62 semester hours in art. B.F.A. candidate reviews are held once each semester.

In addition to the General Education Requirements (see the College of Liberal Arts section of the Catalog and major requirements listed above for the B.A. degree with studio emphasis), the B.F.A. candidate must complete all courses in a studio area of concentration beyond the fundamental course, and must complete at least the second semester of course work in each of two additional studio areas.

Art education majors in the B.F.A. program must meet the same teacher certification requirements as do students in the B.A. program. B.F.A. candidates may waive 6 semester hour of the General Education Requirements in historical perspective, etc.

Honors

Art majors who are eligible to enroll in the University Honors Program may enroll in the honors program of the School of Art and Art History.

Honors students in art history must maintain a minimum grade-point average of 3.50 in art history courses and must complete 3 semester hours in studio and 3 semester hours beyond the 18 semester hours of intermediate and advanced art courses.

The undergraduate senior thesis requirement may be met by completion of a graduation seminar or supervised course of directed studies. The thesis
requirement may be met by a research paper grade of B or higher in a course in the major area of the student's interest. A comprehensive examination may be retained only once. 

Course distribution for the M.A. in art history as follows:

11:294 Seminar: Methodology of Art History and Criticism 3 s.h.
* Two other history seminar with different instructors 6 s.h.
Additional art history courses 14.25 s.h.
Studio course 0.0 s.h.
Courses outside the school 0.0 s.h.

* These seminars may be applied toward the fine art history area courses if the student has earned a grade of B or higher in an undergraduate course in the same area.

Students are required to have a total of 6 semester hours of studio training at either the undergraduate or graduate level. Students with 6 semester hours or more of undergraduate studio training are exempt from the graduate studio requirement. Students preparing to teach in both the art history and studio area must take 12-18 semester hours of studio course work, with a minimum of 6 semester hours in one subject. In addition to the undergraduate requirement for a studio major, they must satisfy the drawing requirement. Studio courses may be taken satisfactorily unsatisfactory.

M.A. candidates with undergraduate majors in art history are encouraged to take courses outside the school.

Within the first 20 semester hours of graduate work, the M.A. candidate must demonstrate the ability to read art historical writing in an appropriate foreign language, normally German or French, through other languages (including Oriental languages) may be acceptable. This requirement may be fulfilled by satisfactory completion of the final seminar of a Ph.D. history taught course, or satisfactory completion (with a grade of B or higher) of the fourth semester of a college or university level language course.

Students must prepare either a written thesis, for which 5 semester hours of credit may be allowed, or a satisfactory research paper of approximately 20-40 pages.

Specialized Area Studies Programs

The school also offers a specialized area studies program on the M.A. level. Formal approval to enter this program is based on the student's background, interests, and seriousness of purpose. It requires the student to demonstrate potential for outstanding work in the area of his or her specialization.

To encourage in-depth work, students are expected to concentrate course work in their major area of focus. Acceptance into the area studies program does not change students' obligations to the methodology, language, seminar, and research paper/thesis requirements. Students consult with their faculty advisors to choose appropriate courses in related areas offered by other departments. Faculty supervising work in the specific area evaluate the student annually.

Master of Arts in Studio

The school offers the M.A. in studio with a major in an art combination with the metalsworking and (work) multimedia and video art, painting, photography, printmaking, or sculpture. The degree requires:

* A B.A. or B.F.A. in an art equivalent to that offered at The University of Iowa in undergraduate levels. If any, may be made up concurrently, but not in addition to course requirements.

Students in major in studio are required to take a minimum of 33 semester hours of graduate work, including at least 12 semester hours in a major studio subject, with a total of at least 21 semester hours in studio courses, 9 semester hours in the history and theory of art, excluding readings and directed studies, and up to 8 semester hours of courses outside an art and history.

Clearance for M.A. candidacy by faculty review; and

and studio classes taken at The University of Iowa must take at least one studio course during the first year.

Students preparing to teach in both the studio and art history area may complete an art history history of 15 semester hours, including 11:294 Seminar: Methodology of Art History and Criticism and one other seminar. These hours are in addition to the University's undergraduate requirement for an art history major. Students may complete the undergraduate history must satisfy the distribution requirements for art history.

Master of Arts in Art Education

Requirements for the M.A. in art education are:

* A B.A. or B.F.A. in an art equivalent to that offered at The University of Iowa, teaching certification in art, completion of 33 semester hours of graduate credit, including 18 semester hours of studio and art education in a total of two to one (either 12 semester hours of graduate credit in studio and 9 in art history, or 6 in studio and 12 in art history, 8 semester hours in graded seminar in art education, and 12 semester hours to be specified after the student begins the program; and

and a written thesis based on research in an art education or an art history, or a studio thesis accompanies by a brief statement of the student's interests, 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 must take at least one drawing course, selected from the school's regular studio drawing courses, during the first year in residence.
Art education majors may elect to take art history courses on a satisfactorily-unsatisfactory basis.

Master of Fine Arts in Studio

The school offers the M.F.A. with a major in ceramics, drawing, metals-working and jewelry, multimedia and video art, painting, photography, printmaking, or sculpture. 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 12 semester hours in a major studio subject, at least 6 semester hours in a minor studio field selected from the fields listed above, 9 semester hours in art history and theory of art, and 8 semester hours in courses in courses originating outside the school.

- Courses for M.F.A. Candidacy by faculty review, and
- studio and written theses.

These credits earned in an M.A. program are not applicable toward the M.F.A. credit requirements.

Doctor of Philosophy in Art History

Ph.D. students must have a broad general knowledge of art history and acquired detailed knowledge of the field of specialization, the understanding of artistic development, and a knowledge of research methods within certain specialized areas of art history selected by each student in consultation with the appropriate faculty member.

The Ph.D. in art history is intended only for students who can effectively demonstrate scholarly potential in the field. Students may apply for a master's track in the Ph.D., bypassing the M.A. (see "Direct Entry into Ph.D. Program"). All students must meet the following requirements for the Ph.D. formal application for admission to the art history faculty: a grade point average of at least 3.0 for admission and continuation in the program.

- Submission of an art history research paper that meets the approval of at least three hours of the graduate art history faculty.
- A minimum of 72 semester hours of graduate level course work; a maximum of 36 semester hours of work taken for the M.A. degree may be applied to this total, and
- dissertation, within the first 21 semester hours of graduate work beyond the M.A., of the ability to read art history writings in two appropriate foreign languages (as explained in the description of the M.A. in art history program).

Students with the M.A. degree in a discipline other than art history must meet, at the graduate level, the dissertation requirement for the M.A., or must complete the University of Iowa M.A. comprehensive examination. They also must submit a research paper in art history, which must be approved by three-fifths of the graduate art history faculty, complete two seminars in two different areas, and meet the requirement for two foreign languages. The residence requirement for the doctoral degree in the art history program is one full-time student at the University of Iowa for two semesters beyond the 24 semester hours of graduate work. Course requirements beyond the M.A. program out an M.A. program.

- Two art history seminars (with two different instructors) 9 s.
- Additional art history courses 18-30 s.
- Courses outside the school 0-12 s.

Students must successfully complete a comprehensive examination of six hours in one major field and three hours in one related field, selected by the student in consultation with the advisor and approved by the art history faculty.

- The major field may be in a discipline or disciplines outside the school, for example, religion, literature, or philosophy.

Students must prepare a written dissertation that constitutes an original scholarly contribution to the field. The school will allow up to 6 semester hours of credit toward the art history course requirements for dissertation preparation. The topic of the dissertation must be presented to the faculty for approval.

Students are given a final oral examination on the dissertation.

Direct Entry into Ph.D. Program

A graduate student may, at any time, apply to receive the Ph.D. program directly, without first acquiring an M.A. degree; students who want to receive this program must submit a significant research paper (thesis) that meets the approval of three-fifths of the graduate art history faculty. Students may apply for this option only twice; if the second application fails, they must complete the M.A. before again applying for admission into the Ph.D. program. The M.A. distribution requirement is waived, but foreign language and seminar requirements remain the same.

Doctor of Philosophy in Art Education

The Ph.D. in art education gives college teachers and researchers in art education and art supervisors in the 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 approved 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 field courses (720-906 or 930-936 Introduction to Research in Art Education and 930-938 Research in Art Education, as applicable).

Students must take both oral and written comprehensive examinations. The written portion of the 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 resemble directly to the student's dissertation proposal. Students also must complete a written dissertation for at least 12 semester hours 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.

Admission

Studio

Admission procedures for graduate studio programs include a committee review of applications and all of the applicant's supporting materials. Studio applicants must include three slides or portfolio, or sculpture major must submit slides and/or photographs of their work in their major field. Preparing major must submit two slides to each program along with a letter of recommendation. Drawing and painting major must submit a selection of 20 to 25 slides or prints. Studio applicants also must submit two slides showing examples of their work in one other area, and three letters of recommendation.

Newly admitted students who do not register within two semesters of their acceptance must reapply. Students who attend for a limited time, then register a period of 24 months, or more, must apply for readmission.

Art History and Art Education

Applicants to the graduate program in art history must submit a term paper or other example of ability to write in the field and a one-page, single-spaced statement of their purpose in pursuing graduate study.

Applicants to the M.A. graduate 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.

All applicants must submit three letters of recommendation and one with their application. A formal application and a fee must be on file in the School of Art and Art History by the following deadlines:

- Art education applicants: April 15 for fall semester and November 15 for spring semester.
- Art history applicants: February 1 for all applicants who wish to be considered for
Asian Languages and Literature  •  Liberal Arts  81

Undergraduate Programs

The Department of Asian Languages and Literatures 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 cultures and civilizations of traditional and modern Asia through study of various 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, literature, and cultures of Asia.

Elective subjects include courses in education, government, communications, business, and other fields of the United States and Europe.

The department encourages its undergraduate majors to participate in study abroad programs in Asia and has entered into exchange agreements with several universities there.
Minor in Asian Languages

A minor in Asian Languages requires a minimum of 15 semester hours with a grade-point average of 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. The following courses are considered advanced for the minor.

CHINESE
39-19 Second-Year Chinese 4.5 h.
39-11 Second-Year Chinese 6 h.

HINDI
Students of Hindi are permitted to complete the advanced course requirement with 11 semester hours.
39-22 Second-Year Hindi 4 h.
39-34 Second-Year Hindi 4 h.
39-184 Third-Year Hindi 3 h.

JAPANESE
39-10 Second-Year Japanese 6 h.
39-11 Second-Year Japanese 6 h.

SANSKRT
39-22 First-Year Sanskrit 5 h.
39-23 Second-Year Sanskrit 5 h.
39-24 Second-Year Sanskrit 5 h.
39-18 Third-Year Sanskrit 3 h.

Students who begin work on minors in fall semester 1990 or earlier may choose to meet old requirements. Please see an advisor in the Department of Asian Languages and Literatures.

Minor in Asian Studies

A minor in Asian studies requires a minimum of 15 semester hours with a grade-point average of 2.00. Of the 15 semester hours, at least 12 must be taken at The University of Iowa in advanced courses. Courses numbered 39-100 or 39-190 and above are considered advanced for the minor. Students are encouraged to take 39-15 or 39-25 Civilizations of Asia, or 39-18 or 39-19 or 39-20 Asian Humanities (Chin, India, or Japan) as their lower-level course. Students who begin work on minors in fall semester 1990 or earlier may choose to meet old requirements. Please see an advisor in the Department of Asian Languages and Literatures.

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 College of Business Administration and the College of Liberal Arts. The wide range of disciplines in the program permits undergraduates to major in their own professional interests and to concentrate major in the Colleges of Business Administration and Liberal Arts (see the College of Business Administration section of the Catalog).

Graduate Programs

Master of Arts in Asian Civilizations

The graduate program in Asian civilizations provides preparation for doctoral study in a variety of disciplines. It is a size 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 toward a concurrent degree in Asian civilizations.

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 the advisor. The course of study must conform to one of the following four specialized master's programs: Chinese literature, Chinese linguistics, Chinese language teaching, interdisciplinary studies in Chinese, Japanese literature, Japanese language and pedagogy, interdisciplinary studies in Japanese, Swahili language and literature, Hindi language and literature, and South Asian studies. All students must maintain a 3.00 grade-point average. Credits earned toward the degree requirements may be applied to all applicants.

By the end of the fourth semester in residence, students are expected to demonstrate, either by departmental examination or the successful completion of courses at the appropriate level, an advanced competence in Chinese, Japanese, Hindi, or Sanskrit, defined generally as correlative to the fourth-year level of language course work 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 minimum grade-point average of 2.75 is required for conditional admission. In addition, applicants must submit a writing sample in English—such as a term paper, seminar paper, or graduation thesis—to the Department of Asian Languages and Literatures. Both foreign and nonforeign graduate applications requesting financial aid for the following academic year are due February 1. Foreign language applications for admission without support are accepted until July 15 for the fall semester or December 1 for the spring semester. Foreign language applications must be submitted to the Graduate Record Examination (GRE) General Test early, since an admission decision usually will not be made until scores are received.

Financial Aid

The Department of Asian Languages and Literatures offers two levels of support for graduate students in Asian civilizations: teaching assistantships and research assistantships. At the time of applications, students should request information about special requirements for teaching assistantships. Currently enrolled undergraduate and graduate students are eligible to compete for summer scholarship aid except for nonresidential language assistantships provided by the Stanley I. and Roberta M. University of Iowa Fund. Scholarships consist of a cash grant for use in an approved course. For information about approved courses in the department, see the student handbook.

Students selected to participate in the Iowa Critical Languages Program receive special financial assistance. Graduate students of Asian languages have available support from two special sources.

• Presidential Schl10n-Adrian for Study Abroad in the amount of $4,000 may be used to help students pay for study abroad. A limited number of scholarships are available each year, and programs for study in North Korean and South European countries are especially encouraged.

• The Stanley Scholarships for International Research and Study, available from the Center for International and Comparative Studies (CICS) support summer study projects and activities away from The University of Iowa campus. Consult the CICS office for more information.

Graduate students who combine work in Asian languages at an advanced level with interdisciplinary or professional study are encouraged to apply for Graduate Fellowships in Foreign Language Study awarded by the Center for International and Comparative Studies. The fellowships offer academic year and summer study stipends as well as full or partial tuition.
Japanese Language House, Student Association
The Foreign Language House in Hillcrest Residence Hall includes a Japanese House that is a focal point for activities among both resident andnon-resident students and the Japanese Student Association, including weekly dinners.

Library Facilities
Since 1996 the Main Library has routinely sponsored annual American-Japanese study trips to Japan and selected overseas scholarship publications in English and other Western languages. The Library's Asian collection includes approximately 80,000 volumes in Asian languages and about 120,000 Western-language volumes on Asian subjects. The University is a member of the Library of Congress Foreign Currency Exchange Program for Indian books and periodicals. The library's computer media collection includes a growing number of Asian feature films. A Chinese-Japanese dictionary contains several thousand students and faculty access to the growing Research Libraries Information Network database in Asian languages.

Courses
Undergraduate Language
39-00 Cooperative Education Internship 0 sh.

CHINESE
39-1 Ch'inese I 4 sh.
Syllabus: character readings, writing characters. Offered spring semesters.

39-2 Ch'inese II 4 sh.
Prep Ch'inese: 39-1; a prerequisite; advanced students on writing characters. Offered fall semesters.

39-3 First Familiar Chinese 4 sh.
Prep Ch'inese: 39-1; a prerequisite. Advanced students on writing characters.

39-4 First Familiar Chinese 4 sh.
Prep Ch'inese: 39-1; a prerequisite. Advanced students on writing characters.

Prep Ch'inese: 39-3, 39-4; a prerequisite. Offered fall semesters.

39-10 Third Familiar Chinese 4 sh.
Prep Ch'inese: 39-5; a prerequisite. Offered fall semesters.

39-11 Third Familiar Chinese 4 sh.
Prep Ch'inese: 39-10; a prerequisite. Offered fall semesters.

39-12 Third Familiar Chinese 4 sh.
Prep Ch'inese: 39-11; a prerequisite. Offered spring semesters.

Prep Ch'inese: for two years of Japanese, including 39-11 or 39-12.

JAPANESE
39-1 First Familiar Japanese 3 sh.

39-2 First Familiar Japanese 3 sh.
Prep Ch'inese: 39-1; a prerequisite. English: foreign language. Offered fall semesters.

39-3 First Familiar Japanese 3 sh.
Prep Ch'inese: 39-1; a prerequisite. English: foreign language. Offered fall semesters.

39-4 Second Familiar Japanese 4 sh.
Prep Ch'inese: 39-2, 39-3; a prerequisite. Offered fall semesters.

Prep Ch'inese: 39-2, 39-3; a prerequisite. Offered fall semesters.

39-6 Third Familiar Japanese 4 sh.
Prep Ch'inese: 39-4, 39-5; a prerequisite. Offered fall semesters.

39-7 Third Familiar Japanese 4 sh.
Prep Ch'inese: 39-5, 39-6; a prerequisite. Offered spring semesters.

39-8 Third Familiar Japanese 4 sh.
Prep Ch'inese: 39-6, 39-7; a prerequisite. Offered spring semesters.

39-9 Third Familiar Japanese 4 sh.
Prep Ch'inese: 39-7, 39-8; a prerequisite. Offered spring semesters.

Prep Ch'inese: two years of Japanese, including 39-10 or 39-11.

OTHER LANGUAGES
40-21 Sanskrit 1 4 sh.
Prep, Sanskrit vocabulary, grammar, syntax. CS: foreign language. Offered fall semesters.

40-22 Sanskrit 2 4 sh.
Prep, Sanskrit vocabulary, grammar, syntax. CS: foreign language. Offered spring semesters.

40-23 Sanskrit 3 3 sh.
Prep, Sanskrit vocabulary, grammar, syntax. CS: foreign language. Offered spring semesters.

40-24 Sanskrit 4 3 sh.
Prep, Sanskrit vocabulary, grammar, syntax. CS: foreign language. Offered spring semesters.

40-25 Sanskrit 5 3 sh.
Prep, Sanskrit vocabulary, grammar, syntax. CS: foreign language. Offered spring semesters.

40-26 Sanskrit 6 3 sh.
Prep, Sanskrit vocabulary, grammar, syntax. CS: foreign language. Offered spring semesters.

40-27 Sanskrit 7 3 sh.
Prep, Sanskrit vocabulary, grammar, syntax. CS: foreign language. Offered spring semesters.

40-32 Persian 1 4 sh.
Prep, Persian vocabulary, grammar, syntax. CS: foreign language. Offered fall semesters.

40-33 Persian 2 3 sh.
Prep, Persian vocabulary, grammar, syntax. CS: foreign language. Offered spring semesters.

Graduate Language
39-11 Ch'inese I for Graduate Students 3 sh.
Prep: 39-12. Offered spring semesters and summer session.

39-12 Ch'inese II for Graduate Students 3 sh.

39-13 Chinese I 3 sh.

39-14 Chinese II 3 sh.


39-16 Chinese IV 3 sh.

39-17 Chinese V 3 sh.
Graduates with bachelor's degrees may enter research or service careers at the technical level in educational, governmental, and industrial institutions of foundations. The programs also prepare students for teaching at all levels, for certification or advanced degree programs leading to independent research in biological fields, and for work in the health professions, such as medicine, dentistry, veterinary medicine, pharmacology, pharmaceutical practice, medical technology, dental hygiene, and physical therapy. Students majoring in biology have also prepared to work in fields related to the plant sciences, such as agriculture, forestry, horticulture, plant pathology, the chemistry of natural products, ecology, environmental law, and pharmacology.

Courses required for the majors emphasize the fundamental biological sciences and processes common to living systems. The students majoring in biology have also prepared to work in fields related to the plant sciences, such as agriculture, forestry, horticulture, plant pathology, the chemistry of natural products, ecology, environmental law, and pharmacology.

Students interested primarily in field biology have opportunities for field experience through the program in ecology and evolutionary biology and the Marine Science Institute. The Center for Ecology and Evolutionary Biology and the Marine Science Institute offer courses in the natural sciences.
Introduction to Research. The elective courses can include up to 4 semester hours of advanced course work in the physical sciences (physics, chemistry, geology), as specified approved courses in the basic science departments of the College of Medicine, or in mathematics courses that have first-semester calculus as prerequisite.

Appropriate electives should carry elementary course prerequisites, be meant primarily for science majors, and not include the required courses in cognate sciences listed below. Students should choose elective courses in consultation with their advisors.

OTHER DISCIPLINES
4:13-14 Principles of Chemistry I-III 6 s.h.
4:16 Principles of Chemistry Laboratory 2 s.h.
4:121 Organic Chemistry I 5 s.h.
99:120 Biochemistry and Molecular Biology I 4 s.h.
29:11-12 College Physics I-II 8 s.h.
29:11-12 18 Introductory Physics I-II 8 s.h.
22M:25 Calculus I 4 s.h.
22M:16 Calculus for the Biological Sciences 3 s.h.
22M:35 Engineering Calculus I 4 s.h.
22M:45 Accelerated Calculus I 4 s.h.
8W:10 Expository Writing (or equivalent) 3 s.h.
Total 29-30 s.h.

SUGGESTED FRESHMAN YEAR SCHEDULE
The following first-year schedule is recommended for students seeking either the B.S. or B.A. degree in biology.

First Semester
English 101-102 or 103 4 s.h.
Chemistry 4:121 3 s.h.
Biology 2:11 4 s.h.
Mathematics 3-4 s.h.

Second Semester
Biology 2:11-12 College Physics I-II 8 s.h.
Chemistry 4:121-122 5 s.h.
Required course 3-4 s.h.
Mathematics 3 s.h.

Students who seek the B.S. degree and who are sufficiently prepared in mathematics to take calculus in their first semester are encouraged to take 2:1 Principles of Animal Biology in their second semester.

Bachelor of Arts in Biology

The B.A. program provides more options among the required courses than does the B.S. program. It also permits more flexibility in course selection for satisfying the elective hour requirement.

Students seeking the B.A. degree in biology are required to take the following courses.

BIOLOGICAL SCIENCES
2:1 Introduction to Botany 4 s.h.
2:2 Principles of Animal Biology 5 s.h.
2:128 Fundamental Genetics 3 s.h.
2:131 Evolution 4 s.h.
Electives in biology sciences, botany, microbiology, or plant pathology, at the 100-level or higher, including at least one biology laboratory course or biology course with laboratory. 13 s.h.
Total 29-30 s.h.

Of the 13 semester hours of elective credit, up to 9 may be taken in other natural sciences or mathematics. 3 of these 6 semester hours in nonbiological science may be in 20-104 Introduction to Philosophy of Science, or 16:132 The Scientific Revolution, or 16:133 Science in the Modern Age. Other restrictions and limitations in courses to satisfy the elective credit requirement apply as for the B.S. degree.

OTHER DISCIPLINES
4:13-14 Principles of Chemistry I-III 6 s.h.
4:16 Principles of Chemistry Laboratory 2 s.h.
4:121 Organic Chemistry I 3 s.h.
99:110 Biochemistry 3 s.h.
99:120 Biochemistry and Molecular Biology I 4 s.h.
29:11-12 College Physics I-II 8 s.h.
29:11-12 18 Introductory Physics I-II 8 s.h.
63:161 Introduction to Biostatistics or 226:148 Intermediate Statistical Methods 4 s.h.
or 226:25 Calculus I 4 s.h.
or 22M:16 Calculus for the Biological Sciences 3 s.h.
or 22M:35 Engineering Calculus I 4 s.h.
or 22M:45 Accelerated Calculus I 4 s.h.
or 8W:10 Expository Writing (or equivalent) 3 s.h.
Total 28-30 s.h.

SUGGESTED FRESHMAN YEAR SCHEDULE
See "Bachelor of Science in Biology."

Bachelor of Science in Botany

In addition to the General Education Requirements of the College of Liberal Arts, students seeking the B.S. in botany are required to take the following courses.

BIOLOGICAL SCIENCES
2:1 Introduction to Botany 4 s.h.
2:2 Principles of Animal Biology 5 s.h.
2:128 Fundamental Genetics 3 s.h.
2:131 Plant Anatomy 4 s.h.
2:100 Land Plants. An Evolutionary Survey 4 s.h.
2:102 Algae and Fungi 4 s.h.
2:136 Field Mycology 3 s.h.
Taxonomy—one of these: 3 s.h.
2:101 Plant Taxonomy 2.4 s.h.
2:131 Summer Flora 3 s.h.
L105 Plant Taxonomy 5 s.h.
Physiology—one of these: 3 s.h.
2:110 Plant Physiology 3.4 s.h.
2:136 Cell Physiology 4 s.h.
Ecology—one of these: 3 s.h.
2:111 Plant Ecology 4 s.h.
2:136 Field Ecology 4 s.h.
2:136 Ecotony 4 s.h.
2:196 Honors Laboratory Research or An investigative laboratory or field course 1-5 s.h.

OTHER DISCIPLINES
4:13-14 Principles of Chemistry I-III 6 s.h.
4:16 Principles of Chemistry Laboratory 2 s.h.
4:121 Organic Chemistry I 3 s.h.
99:110 Biochemistry 3 s.h.
or 99:120 Biochemistry and Molecular Biology I 4 s.h.
or 22M:15 Mathematics for the Biological Sciences 4 s.h.
or 22M:19 Elementary Functions 3 s.h.
or 226:102 Introduction to Statistical Methods (or equivalent) 3 s.h.
or 22M:16 Calculus for the Biological Sciences 3 s.h.
or 22M:25 Calculus I (or equivalent) 4 s.h.

Bachelor of Arts in Botany

The B.A. curriculum provides a broad background in botany yet allows more electives that does the B.S.

In addition to the General Education Requirements of the College of Liberal Arts, students majoring in botany are required to take the following courses.

BIOLOGICAL SCIENCES
2:1 Introduction to Botany 4 s.h.
2:2 Principles of Animal Biology 5 s.h.
2:115 Plant Anatomy 4 s.h.
2:128 Fundamental Genetics 3 s.h.
Vascular plant diversity—one of these: 4 s.h.
2:100 Land Plants: An Evolutionary Survey 4 s.h.
2:101 Plant Taxonomy 4 s.h.
2:136 Cell Physiology 4 s.h.
2:131 Summer Flora 3 s.h.
L105 Plant Taxonomy 5 s.h.
Doctor of Philosophy in Botany

The Ph.D. is primarily a research degree. The student must conduct original research of sufficient magnitude and value to be able to write a thesis and defend it successfully before the final examination committee. In addition, the student must complete 72 semester hours of graduate coursework and research as prescribed by the advisory committee (hours earned for the master's degree may be counted toward the 72-semester-hour minimum). The guidance committee also may require that course work beyond the 72 semester hours be taken to meet specific proficiency requirements (e.g., language or statistical) or to make up for background deficiencies (e.g., chemistry or general botany course work).

During the first semester in residence as Ph.D. candidate, students must submit a proposal of study for approval by the guidance committee. Students must fulfill all course work requirements of the program of study, with changes made only with the formal (written) approval of the guidance committee. Students complete an initial research proposal within two or three semesters after admission to the Ph.D. program (see M.S.). The proposal, which should outline the specific objectives, significance, and methodology of the chosen research project, must gain written acceptance from members of the guidance committee and be accepted by the student. Once the first proposal work has been completed and the student has satisfactorily passed all the course work and completed the comprehensive examination, the student submits his research proposal for final approval. The initial research proposal will be a final defense of the above content. Students may be required to do the research proposal within six months.

Doctor of Philosophy in Biology

The form and structure of the degree are determined by the departmental committee on the basis of the student's background and current and prospective research interest. The dissertation committee also determines what portion of the initial course work or proficiency requirements must be completed before the comprehensive examination, which is usually taken in the fall of the student's fourth year. The comprehensive examination consists of two parts: a written examination and an oral examination. The student must pass the written examination to advance to the oral examination. The oral examination is conducted by the student's dissertation committee and evaluates the student's knowledge and understanding of the subject matter of the thesis. The student must also complete a thesis, which is a scholarly work that contributes to the body of knowledge in the field of study.

Financial Aid

Graduate students in the Department of Botany are encouraged to seek financial support from a variety of sources. Graduate students receive financial support in the form of teaching or research assistantships, fellowships, grants, or contracts. Teaching assistantships are generally awarded on the basis of academic merit and are available on a competitive basis. Research assistantships are awarded on the basis of academic merit and are available on a competitive basis. Fellowships are awarded on the basis of academic merit and are available on a competitive basis. Grants and contracts are awarded on the basis of academic merit and are available on a competitive basis.

Admission

Applications are reviewed on a rolling basis, and decisions are made on a rolling basis. Students are encouraged to apply as early as possible to ensure consideration for admission. International students are encouraged to apply early, as visa processing can take several months.

Master of Science in Plant Biology

Applicants must have a bachelor's degree in a related field of study, such as biology, chemistry, microbiology, or agriculture. Applicants are required to submit a statement of purpose, a current resume, and three letters of recommendation. The program is designed to provide advanced education in plant biology, with a focus on molecular and cellular biology, plant pathology, and plant genetics.

Financial Aid

Graduate students in the Master of Science in Plant Biology program are encouraged to seek financial support from a variety of sources. Graduate students receive financial support in the form of teaching or research assistantships, fellowships, grants, or contracts. Teaching assistantships are generally awarded on the basis of academic merit and are available on a competitive basis. Research assistantships are awarded on the basis of academic merit and are available on a competitive basis. Fellowships are awarded on the basis of academic merit and are available on a competitive basis. Grants and contracts are awarded on the basis of academic merit and are available on a competitive basis.
Undergraduate Programs

Bachelor of Science

Posets 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 allows all the prerequisites for graduate work in chemistry or biochemistry. The major course requirements for the B.S. degree are as follows. Science course hours are required for the B.S., as well as 45 which must be in chemistry courses.

4-15 Principles of Chemistry 1/1 6 h.
4-18 Principles of Chemistry 2/1 6 h.
4-17 Basic Measurements 2 h.
4-111-112 Analytical Chemistry 1/1 6 h.
4-121-122 Organic Chemistry 1/1 6 h.
4-123 Inorganic Chemistry 2 h.
4-131-132 Physical Chemistry 1/1 6 h.
4-145 Organic Chemistry Laboratory 3 h.
4-143 Analytical Measurements 3 h.
4-144 Physical Measurements 3 h.
4-153 Inorganic Chemistry Laboratory 3 h.
4-170 Advanced Inorganic Chemistry 3 h.
4-171 Advanced Inorganic Chemistry 3 h.
4-323 Introductory Physics 2/1 recommended, 29-11-12 College Physics accepted 8 h.
Introductory physics (29-17-18 Introductory Physics 1/1 recommended, 29-11-12 College Physics accepted) 8 h.

Advanced courses in chemistry, biological sciences, mathematics, physics, or other sciences are required for a minor. The department requires 12 semester hours in the Bacteriology of Arts, 10 of which must be in chemistry courses.

Honors
To graduate with honors in chemistry, a student must enroll in the University Honors Program, take 4-122 Undergraduate Research, complete a research project acceptable to his or her research advisor, 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 (4-13-4-18 Principles of Chemistry 1/1 and 4-16-16 Principles of Chemistry Lab are prerequisites for upper-level courses in chemistry).

Teacher Certification
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 second emphasis in chemistry (see "Science Education" in the Department of Liberal Arts section of the Catalog).

Graduate Programs

Master of Science

The department offers the M.S. with or without emphasis in physical chemistry, analytical, inorganic, and physical chemistry and in chemical physics. Candidates for the M.S. must demonstrate minimal proficiency in analytical, inorganic, and physical chemistry and pass specific examinations or by enrollment in suitable core courses. This requirement must be completed by the end of the second year of enrollment. At least 36 semester hours of graduate work are required for the M.S. A minimum grade-point average of 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 may be necessary, a minimum of 1 semester hour of advanced course work, and research.
4.214 Analytical Spectroscopy
3 s.h.
4.216 Inorganic Spectroscopy
3 s.h.
4.217 Inorganic Spectroscopy
3 s.h.
4.218 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.219 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.246 Physical Chemistry Topics
1 s.h.
4.247 Physical Chemistry Topics
1 s.h.
4.254 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.256 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.258 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.259 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.260 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.262 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.263 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.264 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.265 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.266 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.267 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.268 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.269 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.270 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.271 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.272 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.273 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.274 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.275 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.276 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.277 Spectroscopy of Molecular Spectroscopy
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4.278 Spectroscopy of Molecular Spectroscopy
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4.279 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.280 Spectroscopy of Molecular Spectroscopy
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4.281 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.282 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.283 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.284 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.285 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.286 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.287 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.288 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.289 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.290 Spectroscopy of Molecular Spectroscopy
3 s.h.
4.291 Spectroscopy of Molecular Spectroscopy
3 s.h.
Major in Ancient Civilization

This major is sponsored by the School of Arts and Sciences and the Department of Classics and History.

The major consists of the ancient civilizations of the Mediterranean world and draws on courses offered by various departments of the University. It is not primarily a program for a graduate degree in classics; nevertheless, it provides a sound basis for preparing teachers at the secondary school and junior college levels. In addition to the normal college requirements for the B.A., the following shown on the department of the major:

Ancient art
6 s.h.

Ancient history
6 s.h.

Ancient philosophy or religion
6 s.h.

Classics (either "classics in English"
6 s.h.

courses, or Latin or Greek language courses)
6 s.h.

Appropriate courses in art, history,
philosophy, religion, or linguistics
3 s.h.

14-194 Seminar in Ancient Civilization
3 s.h.

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 reading and discussions are on an ancient author or a field in ancient history or literature chosen by seniors and the instructor. During the senior year seniors present an essay on a set topic; at the end of the senior year they present a long paper, which is marked by two members of the department.

Minors

A minor requires a minimum of 15 semester hours in classics courses, with a minimum grade-point average of 2.00. Of the 15 semester hours, at least 6 must be in advanced courses taken at the University of Illinois. Students may select a minor from the following: Latin, Greek, classics, and ancient civilizations.

The following courses are considered advanced for the minor:

Greek
14-111 12-Year-Second Year Greek I
6 s.h.

All courses numbered 14-121 or higher

Latin
20-167 1-Year Second Year Latin I
5 s.h.

20-181 Age of Cicero
3 s.h.

20-182 Age of Augustus
3 s.h.

All courses numbered 20-121 or higher

Classics numbered 20-100-199 do not count toward the minor because they are not courses in the Greek language.

Classics

14-101-12 Second-Year Greek I
6 s.h.

20-107 12-Year Second-Year Latin I
6 s.h.

20-81 Age of Cicero
3 s.h.

20-82 Age of Augustus
3 s.h.

*These courses or their equivalents are required for the minor in classics, so that students will have both Greek and Latin.

Ancient Civilization

All courses in Greek numbered 14-100 or above

All courses in Latin numbered 20-100 or above

Appropriate courses from the School of Arts and Sciences and the Departments of History and Philosophy, as selected by the undergraduate committee.

14-25 Introduction to Ancient Art
3 s.h.

20-81 Age of Cicero
3 s.h.

20-82 Age of Augustus
3 s.h.

Language for Nonmajors

Students who want to satisfy the College of Liberal Arts foreign language requirement for the B.A. by studying Greek should take 14-12 Elementary Greek and 14-111-12 Second-Year Greek I-II. Students who want to meet the requirement by studying Latin may elect 20-112 Elementary Latin or 20-115 Accelerated Latin, and 20-161-17 Second-Year Latin I-II.

Graduate Programs

The general requirements of the Graduate College, including the comprehensive examinations, are 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 101-199.

Master of Arts

The department offers the M.A. in Latin, Greek, or classics. Candidates must have a minimum of 6 semester hours of credit in the major by taking courses numbered 191 and above. Usually, students in the Latin program who have not had Greek are expected to include at least elementary Greek in their programs.

Doctor of Philosophy

Requirements for the Ph.D. include course work as listed below, precomprehensive and comprehensive examinations, and a dissertation.

Required Courses

Greek oral readings, one semester
Latin oral readings, one semester
Advanced Greek composition or equivalent
Advanced Latin composition or equivalent
Survey of Ancient Near East and Orient
The Hebrew Bible and Rome

Any two of:

Comparative Religion
Greek Philosophy
Philosophy and Religion

The minimum Graduate College requirement is 72 semester hours; the difference is to be made up under the provisions of the Graduate College.

Ph.D. Examinations

Precomprehensive exams must be taken in Greek, Latin, and English (2 s.h. each), and German or French (1 s.h.). The written exam must be taken at the end of the first year of graduate study. Students must be in the program at least three weeks before the date of the exam. Candidates must take the following exams in any sequence:

Greek literature (including passages)-4 hours, written
Latin literature (including passages)-4 hours, written
Special field or author (Greek)-3 hours, written
Special field or author (Latin)-3 hours, written

Facilities

Extensive collections of classical texts and periodicals in the Main Library and the Art and Art History Library facilitate research in the major areas of Greek and Roman civilization.

The department has a valuable collection of slides on classics, subjects and a small library. The Classics Reading Room is open to the graduate student officer, contains a valuable collection of books and periodicals from Ancient History, Aeschylus, and Herodotus.

The University is a supporting institution of the Classical Institute at Athens, the American Academy in Rome, and the Vergilian Society, thereby making these facilities available to its faculty and students.

Courses

Greek—Undergraduates

14-1 Elementary Greek
4 s.h.

14-2 Elementary Greek
4 s.h.

14-3 Elementary Greek
2 s.h.

14-101 2-Year Greek I
5 s.h.

14-102 2-Year Greek II
5 s.h.

14-103 2-Year Greek III
5 s.h.

14-111 1-Year Second-Year Greek I
3 s.h.

14-112 1-Year Second-Year Greek II
3 s.h.

14-113 1-Year Second-Year Greek III
3 s.h.

14-115 Accelerated Greek
3 s.h.

14-51 Accelerated Greek
1 s.h.

14-121 Elementary Latin
5 s.h.

14-122 Elementary Latin
3 s.h.

14-123 Elementary Latin
2 s.h.

14-124 Elementary Latin
1 s.h.

14-125 Accelerated Latin
3 s.h.

14-126 Accelerated Latin
1 s.h.

14-34 Latin literature
3 s.h.

14-35 Latin literature
3 s.h.

14-36 Latin literature
3 s.h.

14-37 Latin literature
3 s.h.

14-38 Latin literature
3 s.h.

14-39 Latin literature
3 s.h.

14-41 Latin literature
1 s.h.

14-42 Latin literature
1 s.h.

14-43 Latin literature
1 s.h.

14-44 Latin literature
1 s.h.

14-45 Latin literature
1 s.h.

14-46 Latin literature
1 s.h.

14-47 Latin literature
1 s.h.

14-48 Latin literature
1 s.h.

14-49 Latin literature
1 s.h.

14-50 Latin literature
1 s.h.

14-51 Latin literature
1 s.h.

14-52 Latin literature
1 s.h.

14-53 Latin literature
1 s.h.

14-54 Latin literature
1 s.h.

14-55 Latin literature
1 s.h.

14-56 Latin literature
1 s.h.

14-57 Latin literature
1 s.h.

14-58 Latin literature
1 s.h.

14-59 Latin literature
1 s.h.

14-60 Latin literature
1 s.h.

14-61 Latin literature
1 s.h.

14-62 Latin literature
1 s.h.

14-63 Latin literature
1 s.h.

14-64 Latin literature
1 s.h.

14-65 Latin literature
1 s.h.

14-66 Latin literature
1 s.h.

14-67 Latin literature
1 s.h.

14-68 Latin literature
1 s.h.

14-69 Latin literature
1 s.h.

14-70 Latin literature
1 s.h.

14-71 Latin literature
1 s.h.

14-72 Latin literature
1 s.h.

14-73 Latin literature
1 s.h.

14-74 Latin literature
1 s.h.

14-75 Latin literature
1 s.h.

14-76 Latin literature
1 s.h.

14-77 Latin literature
1 s.h.

14-78 Latin literature
1 s.h.

14-79 Latin literature
1 s.h.

14-80 Latin literature
1 s.h.

14-81 Latin literature
1 s.h.

14-82 Latin literature
1 s.h.

14-83 Latin literature
1 s.h.

14-84 Latin literature
1 s.h.

14-85 Latin literature
1 s.h.

14-86 Latin literature
1 s.h.

14-87 Latin literature
1 s.h.

14-88 Latin literature
1 s.h.

14-89 Latin literature
1 s.h.

14-90 Latin literature
1 s.h.

14-91 Latin literature
1 s.h.

14-92 Latin literature
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14-93 Latin literature
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14-94 Latin literature
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COMMUNICATION STUDIES

Graduate Programs

Master of Arts

A master's degree may be earned in one of the following areas: Journalism, Communication Studies, or Communication. The requirements for the Master of Arts degree are:

- A minimum of 30 semester hours, including 6000-level introduction to Research, at least two courses numbered 600 or above (the requirements for some programs in the department are greater than this minimum);
- A research thesis or, for the non-thesis degree, a graduate seminar paper involving significant original research;
- Successful completion of a comprehensive exam, the scope of which is determined by the candidate's division and graduate committee, and at least a 3.00 cumulative grade-point average in all courses in the plan of study.

Applications for summer sessions or fall semester payment are received by February 1 because these terms are the best choice for admission and financial aid.

Education Specialist (for Junior College Teaching)

Departmental requirements for the Educational Specialist are:

- A minimum of 40 semester hours, including 6000-level introduction to Research, a course in teaching communication; at least two courses numbered in the College of Education graduate program in higher education; and successful completion of a research project;
- A semester internship in an assigned teaching position;
- Satisfactory performance on a master's written examination covering areas of learning agreed upon by the student and the graduate committee;
- Successful completion of such additional requirements as specified by the departmental division in which the student's work is completed.

Doctor of Philosophy

Departmental requirements for the Doctor of Philosophy are:

- A minimum of 64 semester hours of graduate credit, including dissertation, including a 12-hour sequence in an approved research area; and
- A minimum of 10 semester hours of dissertation credit.
Communication

Communication studies

Within the frame of philosophy, communication studies major study written, verbal, and electronic messages and media, and their environments, from theoretical, critical, historical, and social-scientific perspectives. Students also improve their oral and written communication skills through practical exercises. Courses include social science, social sciences, and the arts. Communication students must demonstrate an understanding of mass media, media studies, and media studies. Students may choose to specialize in an additional focus of study within the department, such as advertising, public relations, organizing and development, politics, entrepreneurship, and research. In the communication programs, students have an opportunity to work in the field and gain practical experience in non-academic, non-profit, and non-profit organizations.

Teaching Minor Certification in Communication Studies

Completion of 23 semester hours of course work in communication and theory is required. This course must be approved by an advisor.

Communication Research

The program in communication research leads to the Master of Arts degree and the Ph.D. Program designed for individual students pursue background research and experience in research on interpersonal communication and group communication from a social science perspective with special emphasis on group decision making and interpersonal communication. In addition to the general program requirements, students are required to identify and select appropriate courses from the major.

Media Studies and Film

Undergraduate Program

This program is open for students interested in film or electronic media as the focus of a general liberal arts education. It requires that students pursue a minor in the areas that they need to succeed in the field of communication and media studies. This program is designed for students who have completed an undergraduate degree and are planning to pursue an advanced degree in communication.

To graduate with a specialization in media studies and film, students must complete 33 semester hours in the field, including the following:

Four core courses across the four areas of film, interpersonal communication, mass media, and media theory

At least four additional 236 hours of coursework, including an additional 12 hours of study above 236 hours

At least six additional 236 hours of additional coursework

The department and division sponsor an annual undergraduate research program that provides students with opportunities to work in the field and gain practical experience in non-academic, non-profit, and non-profit organizations.
at least 15 semester hours of courses in biological studies, including a seminar (any course numbered 500 or above); at least 6 semester hours of courses in other divisions of the College; and a comprehensive examination across three areas of study selected by students and their committees.

Doctor of Philosophy

The program leading to the Ph.D. in the College of Arts and Sciences is designed to give candidates a mature grasp of the major perspectives and problems established in this division and to develop research competence essential to a life of productive scholarship.

Work in related departments—political science, history, sociology, English, comparative literature, anthropolgy, American studies, and journalism—complements theoretical studies course offerings. Many doctoral students also do extensive work in media studies. Sim or communication research to improve their range of teaching opportunities and their research skills.

Persons who want information on basic requirements should write to the department. Teaching and research assistantships are available; evaluation of these opportunities begins mid-February each year.

Institute for Cinema and Culture

The Institute for Cinema and Culture serves as a bank of information concerning availability of films. Film materials for faculty and students. It helps departments, faculty members, and student groups bring to campus films and speakers that attract an interdisciplinary audience.

Each semester the institute sponsors a symposium and related film series on topics that alternate between genre, aesthetic or theoretic interest and those focusing on a specific culture or era. The Program in Cinema and Culture (108-176, 460-176) gives undergraduate and graduate students an opportunity to prepare for the symposium through weekly readings and screenings.

Facilities

The Communication Studies Building is designed specifically to meet both research and technical needs. Included are two studio production areas, a complete video postproduction facility, a film sound stage, a scene shop, areas for animation and graphic production, a radio studio, and an advanced 24-track audio studio that services the needs of courses throughout the program. A large pool of equipment is available to support student work in both studio and course settings. Students and scholars have access to a video and film library, individual viewing areas, a lab computer for experimental and survey research, and computers for research efforts. The Communication Studies Building is one of the best facilities of its kind in higher education.

Courses

Interdisciplinary

3020 Cooperative Education Internship

3022 Hours Colloquium

Phenomena: 2.0-7.0 inclusive grade-point average.

36 6-Hour Course in Communication Studies

36.492 Problems in Communication Studies

36.178 Workshop in Teaching Communication and Persuasion

Methods, materials, preparation, evaluation of teaching and supervising students in courses and classes; various aspects of teaching, learning, and communication; preparation for teaching, including design and evaluation of curriculum, syllabus, course and class evaluations, course and seminar management, academic writing, communicating information to diverse audiences, and setting standards of learning.

36.169 Independent Study

36.300 Independent Study in Research: Communication studies 1.0-7.0 basis of scholarship, election of research problems, format of research report. Field of department, office, and individual study. For students not enrolled in the PhD program.

36.115 Master's Dissertation

36.145 PhD. Dissertation

Communication

A 2.0-5.0 cumulative grade-point average is required for enrollment in all courses except 36.300 and 36.302 which require 3.0 cumulative grade-point average.

Additional prerequisites are listed in course descriptions.

36.320 Communication in Public

Appendical analysis, audience analysis, data collection, case studies, arbitrary of speaking and speaking. This is one of the few courses in the College of Communication Studies that is open to students from other departments.

36.325 Introduction to Communication

Introduction to communication, purposes of communication, and the nature of communication in society.

36.326 Elements of Debate

Debate, debate procedures, debating skills, debating as a social science.

36.337 Organizational Communication: Theory and Practice

Major concepts, theories in organizational communication, corporate communication in written and written communication applications of organizational communication concepts, theories on social organizational practices, corporate

36.359 Persuasive Communication

Applications of persuasive communication, written and oral techniques.

36.360 Ethical and Professional Conduct

Ethical and professional conduct in communication studies, critical thinking, research, and publication.

36.379 Interpersonal Communication

Interpersonal communication in business, education, other professions, guided practice.

36.404 Fundamentals of Public Relations

36.420 Fundamentals of Public Relations

36.440 Media and Public Relations

36.450 Mass Communication

36.460 Mass Communication

36.470 Communication and Society

36.480 Communication and Society

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COMPARATIVE LITERATURE

Chair: Hiroshi Rapoport
Professor: J. Dwyer Avery, Donna Catugana, Kristin E. Kearn, Alex J. Hughes, Nathan Seymour, Steven Utz, Daniel Whiting
Associate professors: Thomas J. Lyons, David A. Reisner, Sarah J. Rueck
Assistant professors: Sabine Stur, Katherine T. Thompson

Undergraduate degree: B.L. in Comparative Literature
Graduate degree: M.A., Ph.D. in Comparative Literature

The Program in Comparative Literature presents literature as the subject of international and interdisciplinary study and provides a basis for innovative work in literature, literary theory, and critical methods.

The program encourages study in comparative arts, particularly with emphasis on cinema, where the program's resources are strong. Students and faculty have easy access to the resources in the Institute for Cinema and Culture (see the Special Resources at lower section of the Catalog).

In addition to its own faculty, the program calls upon faculty members in other areas, including classics, Asian languages and literature, communication studies, English, film, French and Italian, German, historiography, and psychiatry.

Undergraduate Program

The undergraduate major in comparative literature provides a multidisciplinary study designed to promote cultural literacy, to develop speaking and writing skills, and to develop capacities for critical reasoning. Students who major in comparative literature must acquire substantial knowledge in foreign languages, gain an international perspective on literature, and 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 one foreign language. Literature and languages are included in the curriculum. Familiarity with the literatures and cultures of other nations is afforded by theoretical inquiry into the nature of literature itself and by course work that investigates relations among various national literatures and between literatures and other arts, such as film, painting, or music.

Course work in comparative literature also emphasizes interdisciplinary relations between literature and other areas of study, such as history, philosophy, ethnology, anthropology, law, and psychology.

Majors in comparative literature do not proceed through a strictly prescribed course curriculum toward the B.A. degree. Working closely with faculty advisors, students develop coherent, individualized programs of study that reflect their own interests and developing skills.

In addition to completing General Education Requirements for the B.A. degree, majors complete a minimum of 36 semester hours in courses distributed across three areas as follows:

COMPARATIVE LITERATURE

Students should take the following courses, for a total of 21 semester hours.

600-610 Major Terms in World Literature
4.0

600-650 Non-Western Literature Traditions
3.0

600-660 Undergraduate Seminar
3.0

600-680 Introduction to Critical Pedagogy
3.0

Elective comparative literature course work at the 600 level
3.0

Undergraduate Programs

Students should take 9 semester hours of courses in one foreign literature, read in the original language. In addition to courses that satisfy the General Education Requirement in foreign language, courses in composition and criticism may count toward the major.

RELATED AREAS

Students should take 6 semester hours of courses in a related area(s), e.g., English and American literature, film, linguistics, anthropology, philosophy, history) or courses in a second foreign literature.

Honsors

To graduate with honors in Comparative Literature, students must meet eight core standards listed in "Guide to Honors," published by the University Honors Program. They must identify an area that extends beyond regularly offered courses and must complete a project in consultation with one or two faculty members, including the major advisor. Information is available from the Program in Comparative Literature office.

Minor

Students majoring in other disciplines may earn a minor by completing 17 semester hours of work in comparative literature, with a minimum grade point average of 3.0. Of these 15 semester hours, at least 12 must be in University of Iowa courses numbered 480-05 and above.

Graduate Programs

Master of Arts

The Master of Arts degree in comparative literature requires 37 semester hours of course work. The focus is on literature in an international context, with concentration on one or more national literatures and on the theory and study of literature in general. In consultation with faculty advisors, students complete courses in comparative literature and in the technical allied disciplines in 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 advisors, 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. may also be awarded upon successful completion of the comprehensive examinations for the Ph.D.

Master of Fine Arts in Translation

The Master of Fine Arts in Translation program promotes creativity, professional competence and study, and cultural literacy. The aim of the program is to encourage the practice of literary translation and to bring about greater awareness of its traditions, its contributions, and its possibilities. The Iowa Translation Workshop is the central core of the program. Admissions to the program is based on the basis of a submitted portfolio, including translations into and original writing in English, as well as supporting evidence of competence. Degree requirements include a thesis—usually a book-length "translation of poems or stories, or a short novel, translated out of the original language into English" accompanied by a critical introduction. A total of 45 semester hours of graduate study is required, 24 of which must be taken at The University of Iowa. Besides workshop hours,
course work includes study of the foreign language(s), creative writing (fiction, etc.), and criticism. Thus, M.F.A. students may expect to take courses in foreign language departments, the creative writing program, and the English department, as well as in comparative literature.

Doctor of Philosophy

Students seeking a doctorate in comparative literature study at least three languages, and in historical depth and two or three in limited areas of specialization. Students are encouraged to include an interdisciplinary area of concentration. All candidates devote a portion of their programs to comparative study, bringing the several areas into focus. Specific areas and intersections of areas are determined by the student in consultation with appropriate faculty members.

Some typical critical and comparative areas are European Renaissance, romanticism, structures and postmodernism, narrative theory in literature and film, semiotic poetics and modern literature, oral literature in antiquity and today, and satire, rhetoric, and the theory of social interaction.

The Ph.D. dissertation should demonstrate the candidate's ability to write a substantial piece of scholarship or criticism. A translation of a work of sufficient significance and linguistic competence, preceded by a critical introduction, may serve as an acceptable dissertation. The final oral examinations center on the dissertation and its background.

Admission

The study of literature along linguistic boundaries requires special training in languages. A thorough knowledge of at least one foreign language is required for admission to the M.A. programs, knowledge of at least two foreign languages is a prerequisite for doctoral study.

Further information is available in the procedural guide for graduate students in comparative literature, available by request from the program office.

Courses

46:08 Comparative Education Internship 0 s.h.
46:10 Major Test in World Literature I 3 s.h.
46:12 Major Test in World Literature II 3 s.h.
46:14 Major Test in World Literature III 3 s.h.
46:16 Major Test in World Literature IV 3 s.h.
46:18 Major Test in World Literature V 3 s.h.
46:20 Major Test in World Literature VI 3 s.h.
46:22 Major Test in World Literature VII 3 s.h.
46:24 Major Test in World Literature VIII 3 s.h.
46:26 Major Test in World Literature IX 3 s.h.
46:28 Major Test in World Literature X 3 s.h.
46:30 Major Test in World Literature XI 3 s.h.
46:32 Major Test in World Literature XII 3 s.h.
46:34 Mediums of Modern Literature 3 s.h.
46:36 Medieval Literature 3 s.h.
46:38 Modern Literature 3 s.h.
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46:98 Modern Literature 3 s.h.
46:00 Comparative Cultural Criticism 3 s.h.
46:02 Individual Study 3 s.h.
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DANCE ELECTIVES
Seven semester hours from the following:
137-105 Workshop: Artistic-Residence 1 s.h.
137-106 Dance Performance 1 s.h.
137-107 Repertory Dance Company 1 s.h.
137-133 Ballet Pointe 1 s.h.
137-134 Improvisation 2 s.h.
137-140 Honors Project in Dance 3 s.h.
137-142 Elementary Ballet Pedagogy 3 s.h.
137-144 Teaching of Modern Dance I 3 s.h.
137-146 Honors Studies in Dance 3 s.h.
137-151 Intermediate Labanotation 3 s.h.
137-152 Independent Choreography Study 1 s.h.
137-190 Independent Study 3 s.h.
137-191 readings in Dance 3 s.h.

STUDIO TECHNIQUE
Toward semester hours from the following:
137-1 Beginning Tap 2 s.h.
137-2 Beginning Jazz 2 s.h.
137-3 Beginning Ballet 2 s.h.
137-4 Beginning Modern Dance 3 s.h.
137-11 Contemporary 2 s.h.
137-12 Jazz 2 s.h.
137-13 Ballet 2 s.h.
137-14 Beginning Intermediate Modern Dance 3 s.h.
137-21 Beginner Labanotation 2 s.h.
137-22 Intermediate Jazz 2 s.h.
137-23 Intermediate Ballet 2 s.h.
137-24 Intermediate Modern Dance 3 s.h.
137-33 Intermediate Training for the Main Dancer 2 s.h.
137-50 Major Ballet I 1-2 s.h.
137-51 Major Modern Dance I 1-2 s.h.
137-53 Major Modern Dance II 1-2 s.h.
137-124 Major Modern Dance III I-2 s.h.
137-63 Major Modern Dance III 1-2 s.h.
137-126 Creative Threads 2 s.h.
137-127 Creative Threads 2 s.h.
137-128 Creative Threads 2 s.h.
137-129 Creative Threads 2 s.h.
137-141 Creative Threads 2 s.h.

HOMEDEPARTMENT
21-53 Human Anatomy 3 s.h.
21-142 Biomechanics of Physical Education 3 s.h.
28-81 Kinesiology 3 s.h.
25-165 Opera Dance Theater Production (section 1) 4 s.h.

Bachelor of Fine Arts
In contrast to the B.A. in dance, the B.F.A. requires 12 more semester hours in studio courses and emphasizes performance and choreography at the undergraduate level. Students must be admitted to the B.F.A. program after they have completed a minimum of 50 semester hours at the University of Iowa. Only those students who have achieved the minimum of "Major II" technique and who have academic and professional promise are admitted. B.A. candidates must complete three to four semesters in 137-123 Major Ballet III or 137-124 Major Modern Dance III with a grade of B+ or higher.

B.F.A. students may select 3 semester hours of the General Education Requirement in natural sciences (invasive) and 4 semester hours of the General Education Requirement in physical education.

Required Courses

DANCE THEORY
137-40 Introduction to Dance 1 s.h.
137-50 Dance Production 3 s.h.
137-60 Rhythmic Anatomy of Dance 2 s.h.
137-150 Beginning Labanotation 3 s.h.
137-160 Dance History: From Primitive Through the Nineteenth Century 3 s.h.
137-181 Twenty-First Century Dance 3 s.h.

STUDIO (NONTHEATRICAL)
137-70 Choreography I 2 s.h.
137-71 Choreography II 2 s.h.
137-72 Choreography III 2 s.h.
137-73 Choreography IV 2 s.h.

Honors Program
The 8-10 semester hour honors program is designed to serve and recognize outstanding students in the areas of performance and special projects. Honors students must maintain a 3.50 grade-point average during their junior and senior years. All honors projects must be approved by the dance department faculty. Students must be members of the University Honors Program to graduate with honors in dance.

Minor
A minor in dance requires 15 semester hours of credit in dance department courses with a minimum grade-point average of 2.00, of which 12 semester hours of which must be in University of Iowa courses numbered 137-100 and above.
Graduate Program

Master of Fine Arts

Students who demonstrate exceptional ability in dance technique and choreography may apply for admission to the M.F.A. program. Admission is based on an interview, a teaching and technical audition, review of videotaped choreographic work, and letters of recommendation. The M.F.A. program is designed to be completed in six semesters in residence, but students who have completed some of the prerequisites before entering the program may complete it in five semesters.

Students select the choreography or performance track. A total of 90 semester hours is required.

Prerequisites

Advanced technique (ballet and modern) Demonstrated accomplishment in choreography music for dance or equivalent.

Required Courses

DANCE CORE
137:143 Elementary Ballet Pedagogy 1 s.h.
137:144 Teaching of Modern Dance 3 s.h.
137:200 Graduate Seminar in Dance 2 s.h.
137:201 Graduate Production 1 s.h.
137:202 Dance Theory 1 s.h.
137:234 Graduate Improvisation 10 s.h.
137:277 Thesis 4 s.h.

DANCE TECHNIQUE
Eighteen semester hours from the following courses may be repeated:
137:213 Graduate Major Ballet I 3 s.h.
137:214 Graduate Major Ballet II 3 s.h.
137:233 Graduate Major Modern I 3 s.h.
137:234 Graduate Major Modern II 3 s.h.
137:264 Graduate Major Modern III 3 s.h.
Ballet students must take a minimum of 4 semester hours of modern dance; students in modern dance must take a minimum of 4 semester hours of ballet.

EMPHASIS COURSES—CHOREOGRAPHY TRACK
137:206 Graduate Dance Performance 2 s.h.
137:207 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 Grad Plus Independent Choreography (one semester hour for each project) 4 s.h.

EMPHASIS COURSES—PERFORMANCE TRACK
137:107 Repertory Dance Company 8 s.h.
137:206 Graduate Dance Performance 4 s.h. (one semester hour for each performance)
137:274 Grad Plus Independent Choreography (one semester hour for each project) 2 s.h.

ELECTIVES
M.F.A. candidates must earn a total of 9 semester hours in elective courses numbered 100 or higher. A minimum of 9 hours must be earned in nonprofessional courses; the remaining 3 may be earned in dance or nonprofessional courses.

Facilities

The dance department has some of the finest facilities in the country: six studio rooms, two classrooms, video viewing and laboratory/computer rooms, and the own performance theater space for informal concert. Hunter Auditorium, the University's premier performance hall, is available for formal concerts.

Courses

Primarily for Undergraduates

137:000 Cooperative Education Internship 0 s.h.
137:115 Beginning Tap 2 s.h.
137:116 Beginning Jazz 2 s.h.
137:117 Beginning Ballet 2 s.h.
137:118 Beginning Modern Dance 2 s.h.
137:119 Advanced Tap 2 s.h.
137:121 Intermediate Ballet 2 s.h.
137:122 Intermediate Modern Dance 2 s.h.
137:123 Advanced Tap 2 s.h.
137:124 Advanced Modern Dance 2 s.h.
137:125 Advanced Jazz 2 s.h.
137:126 Advanced Ballet 2 s.h.
137:127 Advanced Modern Dance 2 s.h.
137:128 Advanced Jazz 2 s.h.
137:129 Advanced Tap 2 s.h.
137:130 Beginning Modern Dance 2 s.h.
137:131 Advanced Tap 2 s.h.
137:132 Advanced Modern Dance 2 s.h.
137:133 Advanced Jazz 2 s.h.
137:134 Advanced Ballet 2 s.h.
137:135 Advanced Tap 2 s.h.
137:136 Intermediate Modern Dance 2 s.h.
137:137 Advanced Tap 2 s.h.
137:138 Advanced Modern Dance 2 s.h.
137:139 Advanced Jazz 2 s.h.
137:140 Beginning Ballet 2 s.h.
137:141 Intermediate Ballet 2 s.h.
137:142 Advanced Ballet 2 s.h.
137:143 Advanced Tap 2 s.h.
137:144 Advanced Modern Dance 2 s.h.
137:145 Advanced Jazz 2 s.h.
137:146 Advanced Tap 2 s.h.
137:147 Advanced Modern Dance 2 s.h.
137:148 Advanced Jazz 2 s.h.
137:149 Advanced Tap 2 s.h.
137:150 Beginning Jazz 2 s.h.
137:151 Intermediate Jazz 2 s.h.
137:152 Advanced Jazz 2 s.h.
137:153 Beginning Modern 2 s.h.
137:154 Intermediate Modern 2 s.h.
137:155 Advanced Modern 2 s.h.
137:156 Beginning Tap 2 s.h.
137:157 Intermediate Tap 2 s.h.
137:158 Advanced Tap 2 s.h.
137:159 Beginning Ballet 2 s.h.
137:160 Intermediate Ballet 2 s.h.
137:161 Advanced Ballet 2 s.h.
137:162 Beginning Modern Dance 2 s.h.
137:163 Intermediate Modern Dance 2 s.h.
137:164 Advanced Modern Dance 2 s.h.
137:165 Beginning Jazz 2 s.h.
137:166 Intermediate Jazz 2 s.h.
137:167 Advanced Jazz 2 s.h.
137:168 Beginning Modern 2 s.h.
137:169 Intermediate Modern 2 s.h.
137:170 Advanced Modern 2 s.h.
137:171 Beginning Jazz 2 s.h.
137:172 Intermediate Jazz 2 s.h.
137:173 Advanced Jazz 2 s.h.
137:174 Beginning Modern 2 s.h.
137:175 Intermediate Modern 2 s.h.
137:176 Advanced Modern 2 s.h.
137:177 Beginning Tap 2 s.h.
137:178 Intermediate Tap 2 s.h.
137:179 Advanced Tap 2 s.h.
137:180 Beginning Ballet 2 s.h.
137:181 Intermediate Ballet 2 s.h.
137:182 Advanced Ballet 2 s.h.
137:183 Beginning Modern Dance 2 s.h.
137:184 Intermediate Modern Dance 2 s.h.
137:185 Advanced Modern Dance 2 s.h.
137:186 Beginning Tap 2 s.h.
137:187 Intermediate Tap 2 s.h.
137:188 Advanced Tap 2 s.h.
137:189 Beginning Modern 2 s.h.
137:190 Intermediate Modern 2 s.h.
137:191 Advanced Modern 2 s.h.
137:192 Beginning Tap 2 s.h.
137:193 Intermediate Tap 2 s.h.
137:194 Advanced Tap 2 s.h.
137:195 Beginning Ballet 2 s.h.
137:196 Intermediate Ballet 2 s.h.
137:197 Advanced Ballet 2 s.h.
137:198 Beginning Modern Dance 2 s.h.
137:199 Intermediate Modern Dance 2 s.h.
137:200 Advanced Modern Dance 2 s.h.
137:201 Beginning Jazz 2 s.h.
137:202 Intermediate Jazz 2 s.h.
137:203 Advanced Jazz 2 s.h.
137:204 Beginning Modern 2 s.h.
137:205 Intermediate Modern 2 s.h.
137:206 Advanced Modern 2 s.h.
ECONOMICS

Chair: Robert Foerster


Associate professor: Michael Sattler, John Soule, Stephen Milliken

Assistant professors: Andrea B. Blaylock, James V. Kneale, Ronald C. Haegele, Nadia Moschos, Robert J. Tucek, Robert C. Tucek, Robert Tucek

Adjunct professors: J. Richard Zehrer

Undergraduate degrees: B.A., B.B.A. in Economics, minor in Economics

Graduate degrees: M.A., Ph.D. in Economics

Economics is the study of how societies allocate limited resources to achieve competing ends. Both empirical and descriptive economics analyzes incentives, constraints, organizations, formal markets, and self-regulated behaviors of markets and consumption of goods and services. It studies diverse issues such as wealth and poverty, government expenditures and taxation, property and pollution, inflation and unemployment, relations between management and labor, economic growth, environmental protection, health care delivery, the war on drug abuse, trade versus protectionism, U.S. competitiveness on international markets, and the quality of American education.

Undergraduate Programs

The business core program in economics provides an excellent educational background for a variety of positions in business and government. Graduates find employment in banking, financial institutions, investment firms, and trade organizations; in industry, state, and local government agencies dealing with economic policy, regulation, and analysis. Economists also is regarded as excellent preparation for law school and for graduate study in fields such as business management, public administration, health and hospital administration, urban and regional planning, transportation, telecommunications, political science, and statistics.

The department offers three undergraduate degrees—the Bachelor of Arts (B.A.) and the Bachelor of Science (B.S.) in the College of Liberal Arts, and the Bachelor of Business Administration (B.B.A.) in the College of Business Administration.

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 actuarial fields. The B.B.A. emphasizes economic foundations of business firms; accounting, finance, marketing, human resource and management.

Requirements for the B.A. and B.B.A. degrees are described below; those for the B.S. degree are described in the College of Business Administration section of the Catalog. In planning a program of study, students should be aware that the order in which courses are taken is important, since courses are prerequisites for others. The American Institute of Economic Affairs, available from the department office, often help in planning an economics degree program.

Bachelor of Arts

Requirements for the B.A. with a major in economics are as follows.

22M/25 Calculus I 4.0

225-50 Calculus and Mathematical Methods II 4.0

3.0

Economic Theory 3.0

- Statistical Analysis 3.0

Twelve semester hours of credit in 100-level economics courses, including the following.

60-104 Microeconomic Theory 3.0

60-105 Macroeconomics 3.0

Two field courses from 68-170 through 68-199 6.0

Credit is not allowed for both 60-104 and 60-105, and 68-104 does not count toward the 21 semester hours of 100-level course credit required for the B.A.

BACHELOR OF SCIENCE

Most 100-level courses in economics have as prerequisites both 60-1 and 60-2 or winter standing. 60-104 and 60-105 are prerequisites to most courses numbered above 60-170. grades of C or better in 60-1 and 60-2 or consent of the undergraduate director are required for 60-106, 60-107, and 60-150.

22M/25 is a prerequisite to 60-104, and 225-8 is prerequisite to 68-85 and 68-71.

Bachelor of Science

The B.S. requires the following.

22M/25 Calculus I 4.0

225-120 Probability and Statistics 4.0

150-151/154 Introduction to Research Methods

Mathematical Statistics 6.0

Two-fourteen semester hours of credit in 100-level courses, including the following.

62-104 Microeconomic Theory 3.0

62-105 Macroeconomic Theory 3.0

62-184 Introduction to Economics 3.0

Two other field courses numbered from 68-170 through 68-199 6.0

For students planning to pursue a graduate degree in economics, 225-155 and 225-154 are recommended in lieu of 225-120.

Coursework

Some of the prerequisites listed under "Bachelor of Arts" apply; dose 225-150 is prerequisite to 225-120 and 225-153, and 225-154 is prerequisite to 62-184.

Bachelor of Business Administration

The B.B.A. program is described in the College of Business Administration section of the Catalog.

Honor Students

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 advanced study.

To enter the honors program, students should have completed 60-104 Microeconomic Theory and 60-105 Macroeconomic Theory and must have an overall grade-point average of at least 3.20. Honor students enroll in an honors seminar, write an honors thesis, and take an examination on their honors work. To graduate with honors, students must maintain an overall 3.20 grade-point average. Interested students should consult the departmental honors advisor 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 minimum grade-point average of 2.00. Twelve of these semester hours must be taken in The University of Iowa courses numbered 60-100 and above. Students cannot receive credit for both 60-103 and 60-104.

Course Work for Nonmajors

Courses 68-1(Principles of Microeconomics) and 68-2(Principles of Macroeconomics) satisfy the College of Liberal Arts General Education Requirement in social sciences and introduce the broad field of economics and the specialized
topics of upper-division courses. The intermediate theory course in microeconomics (HE-103 and HE-104) and macroeconomics (HE-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 EOE-178 American Economic History; political science majors could elect EOE-119 Economics of the Government: Sector and DOD-125 International Economics; global studies majors, MCT-163 Comparative Economic Systems and MCT-163 Traditions and Newness Resource Economics; pre-law majors, MCT-163 Antitrust, Legal and Economic Analysis; mathematicians and engineering majors, MCT-104 Microeconomic Theory and MCT-187 Introduction to Mathematical Economics; and statistics majors, MCT-164 Introduction to Econometrics. The Handbook for Economics Majors lists economics courses that complete studies in other majors.

A number of students combine related interests by pursuing double majors in economics and in fields such as computer science, psychology, global studies, history, musicology, political science, sociology, or statistics.

Economics Forum

Students are invited to join Economics Forum, the official university economics organization. The forum sponsors social events, special lectures, and mixed-table discussions. It is an excellent way for students to meet other economics majors and department faculty members.

Graduate Program

The department offers the Masters of Arts (M.A.) and the Doctor of Philosophy (Ph.D.). The doctoral program has a theory and quantitative analysis requirement, followed by field courses and a dissertation. The Ph.D. program is designed to provide students with rigorous training in microeconomics, macroeconomics, mathematical economics, and econometrics. Advisors are chosen from the department's faculty, and students are expected to take the core area, students select a major area, and a minor area of specialization. The usual time required to complete the Ph.D. program is four years.

The Master of Arts is offered only to students working toward a Ph.D. degree or to those who earn, through the College of Business Administration, a joint M.A. with geography or a joint M.A./J.D. with law.

See the College of Business Administration 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 California, Davis. The programs are sponsored by faculty and student members of the department; also featured are

Courses

Primarily for Undergraduates

Notes: MCT-1 and MCT-2 may be taken in either order or they may be taken simultaneously. The students close the College of Liberal Arts General Education Requirement in social sciences.

MCT-000 Cooperative Education Internship 3 cr.

MCT-301 Principles of Microeconomics 4 cr.

MCT-302 Principles of Macroeconomics 4 cr.

MCT-303 Principles of Microeconomics 4 cr.

MCT-305 Principles of International Economics 4 cr.

MCT-306 Principles of Economic Analysis 3 cr.

MCT-307 Health Economics 3 cr.

MCT-310 Introduction to Microeconomics 3 cr.

MCT-311 Labor Economics 3 cr.

MCT-312 International Economics 3 cr.

MCT-313 Money, Banking, and Financial Markets 3 cr.

MCT-314 Environmental Economics 3 cr.

MCT-315 Industrial Economics 3 cr.

MCT-316 Fiscal and Monetary Policy 3 cr.

MCT-317 Health Economics 3 cr.

MCT-318 Economics of the Government 3 cr.

MCT-319 Economic Growth and Development 3 cr.

MCT-320 Environmental and Natural Resource Economics 3 cr.

MCT-321 Urban Economics 3 cr.

MCT-322 Business Economics 3 cr.

MCT-323 International Economics 3 cr.

MCT-324 Economic Growth and Development 3 cr.

MCT-325 Money, Banking, and Financial Markets 3 cr.

MCT-326 Economic Growth and Development 3 cr.

MCT-327 International Economics 3 cr.

MCT-328 Environmental and Natural Resource Economics 3 cr.

MCT-329 Urban Economics 3 cr.

MCT-330 Business Economics 3 cr.

MCT-331 International Economics 3 cr.

MCT-332 Economic Growth and Development 3 cr.

MCT-333 Money, Banking, and Financial Markets 3 cr.

MCT-334 Economic Growth and Development 3 cr.

MCT-335 International Economics 3 cr.

MCT-336 Economic Growth and Development 3 cr.

MCT-337 Money, Banking, and Financial Markets 3 cr.

MCT-338 Economic Growth and Development 3 cr.

MCT-339 International Economics 3 cr.

MCT-340 Economic Growth and Development 3 cr.

MCT-341 Money, Banking, and Financial Markets 3 cr.

MCT-342 Economic Growth and Development 3 cr.

MCT-343 International Economics 3 cr.

MCT-344 Economic Growth and Development 3 cr.

MCT-345 Money, Banking, and Financial Markets 3 cr.

MCT-346 Economic Growth and Development 3 cr.

MCT-347 International Economics 3 cr.

MCT-348 Economic Growth and Development 3 cr.

MCT-349 Money, Banking, and Financial Markets 3 cr.

MCT-350 Economic Growth and Development 3 cr.

MCT-351 International Economics 3 cr.

MCT-352 Economic Growth and Development 3 cr.

MCT-353 Money, Banking, and Financial Markets 3 cr.

MCT-354 Economic Growth and Development 3 cr.

MCT-355 International Economics 3 cr.

MCT-356 Economic Growth and Development 3 cr.

MCT-357 Money, Banking, and Financial Markets 3 cr.

MCT-358 Economic Growth and Development 3 cr.

MCT-359 International Economics 3 cr.

MCT-360 Economic Growth and Development 3 cr.

MCT-361 Money, Banking, and Financial Markets 3 cr.

MCT-362 Economic Growth and Development 3 cr.

MCT-363 International Economics 3 cr.

MCT-364 Economic Growth and Development 3 cr.
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62.211 Economics 3 h.

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62.222 Applied Econometrics 3 h.

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the opportunity to learn about and acquire methods for understanding literary themes, interpretations, and the craft basics of fiction, and nonfiction. In addition to providing these essential elements of a liberal education, the department offers courses as background for students who have specialized interests in other fields. It also participates in interdisciplinary programs such as American Studies, African-American World Studies, Comparative Literature, Literature, Science, the Arts, and Women's Studies.

The English faculty is committed to expanding the traditional liberal arts orientation of the college. Faculty members devote their attention to the challenges of modern, non-Western cultures. Some teach and write about literature and culture, supplementing the use of literary texts with paintings, photography, music, films, video, popular literature, and significant texts from many fields. Including history, philosophy, physics, psychology, and sociology. The department has a strong, language commitments to teaching creative and literary writing.

Although most students in the Ph.D. program are preparing for careers as teachers and scholars and most in the M.A.-A program are preparing for live as poets and writers, the R. A. and M.A. programs provide valuable training for careers in many other fields. Students who have received English degrees from The University of Iowa are now writing for advertising firms, newspapers, and book publishers; teaching in primary and secondary schools; practicing in law and medicine; working in business and industry; and participating in a wide variety of governmental programs. Each academic program is designed to meet students' individual needs and objectives.

Undergraduate Programs

The major in English gives students a solid core of interpretive, analytical, and writing skills, rather than a uniform view of any particular literary theory or theory. The department's goal is to offer an undergraduate program designed to develop essential reading and communication skills, and to introduce them to the many pleasures and rewards of the study of artful language.

Bachelor of Arts

A Bachelor of Arts with a major in English requires a minimum of 33 semester hours of credit in courses offered by the Department of English, of which at least 18 must come from courses taken in the Department. This total must include 18 semester hours of courses numbered 200 or above. The core curriculum should include one introductory course in each of the following fields: British literature, American literature, and world literature. The remaining 15 hours of English courses may be selected from any other English courses at the 300 level or above.

Three hours in cultural study courses.

These requirements apply to all students who have declared the major in English after the close of the spring 1996 semester. The Schedule of Courses for each semester specifies which English department courses fit the above categories. The requirement of at least 9 semester hours in foreign language literature written before 1800 may be satisfied by courses that also satisfy other requirements of the major. Only 9 semester hours of creative writing courses may be applied toward the 33 semester-hour total for the major.

Students interested in an English major should consult the director of undergraduate studies in the English department. The Handbook for the Iowa English Major offers more detailed information about the requirements, procedures, and procedures for the English major. It is available from the director of undergraduate studies.

General Education Requirement in Humanities for English Majors

English majors may take GO-1: The Interpretation of Literature plus 6 more semester hours of approved humanities courses or they may take 9 semester hours of approved courses.

No GC course can be counted toward the 33 semester hours required for the English major.

Honors

The English major with honors gives talented students the opportunity to pursue an advanced course of study through special courses and independent study. Each student's department offers four honors presentations covering a wide range of historical areas and topics. Students who wish to earn a degree with honors have three options. They may take:

three presentations during the junior and senior years, and then the three honors essays written as senior papers and, with an introduction, present them as the honors project;

three presentations during the junior and senior years, then, in the senior year, write an honors thesis under the supervision of a faculty member;

a creative thesis is possible under the second option, but only with permission of the Writers' Workshop.

Students interested in more information should contact the chair or any member of the honors committee. The names of the committee members and their office hours are available in the English department office. A handbook, Guidelines and Deadlines, which describes both options for the final project in greater detail and specifies deadlines for turning in the prospectus and the final honors project, is available in the English office.

Minor

Students seeking a minor in English must first complete GO-1: The Interpretation of Literature. Since GO-1 course toward the General

Education Requirement in Humanities, that requirement may be satisfied by a minimum of 6 additional semester hours of course work selected from approved offerings in the humanities.

The minor in English requires 15 semester hours of course work in Department of English courses, with a grade-point average of 2.00. At least 12 of the 15 semester hours must be taken on campus, in English courses 200-384 and above, all 400-level, and 384 courses. Courses designed GO-1 do not count toward the minor in English. Either transfer credit or credit by examination is accepted toward the 12 semester hours of advanced work.

No course in the minor may be taken pass/credit.

The minor is first officially acknowledged and recorded only after the student has completed the application for graduation.
Graduate Programs

Master of Arts (Literary Studies)

The M.A. in literary studies is a program for students who want to understand what it means to study literature professionally. Those who seek an M.A. in literary studies may include students who would like more exposure to graduate study before deciding whether to continue toward a Ph.D. or who are secondary school teachers who want to gain extra credits/hours.) or independent readers and writers seeking intellectual growth unrelated to a specific career objective.

As M.A. students first participate in the community of the department and then enroll in any of its graduate courses or seminars.

The requirements for the degree are designed to give students a general knowledge of the periods, movements, and major works of English and American literary history, to develop modern sensitivity to verbal language and expression, and to introduce some critical methods of literary study. Each of the requirements allows a wide choice of courses within the specified areas.

Elective courses, which constitute about half of the course work toward the degree, may be chosen from graduate course work in literature and outside the English department. The program's flexibility enables students, consulting closely with their advisors, to select their plan of study to their interests. Depending on whether the student takes an examination or writes a thesis, the program requires either 30 or 33 semester hours of graduate-level credit. 26 of which must be earned in residence with a grade-point average no lower than 3.00.

Core Requirements

Students must take one course in each of the following areas: British Literature to 1700, British literature 1700-1914, American literature to 1914, twentieth-century literature in English, and literary theory. Three of these courses must be numbered 200 or above.

Theses or Comprehensive Examination

There are two ways to complete the program.

Students may write a thesis in a single area and present a substantial written document with a comprehensive examination. Students must pass the Graduate Studies Committee on permission to write an M.A. thesis in literature. The thesis must be approved by the student's thesis director and at least two readers.

Students must also pass a written examination covering the material in the three core courses. The examination may be taken individually or as part of the comprehensive examination.

Doctor of Philosophy

The doctor of philosophy is a terminal degree designed for students who want to pursue professional specialization and a stimulating environment for students with prior achievement or notable promise in writing poetry or fiction. The flexible requirements include 48 semester hours of graduate level credit, at least 72 semester hours of graduate credit, at least 30 of which must be earned in residence at The University of Iowa.

Concentration in areas such as literary history, literary theory, cultural studies, and criticism are offered. The doctorate includes a comprehensive examination covering modern poetry or fiction.

Doctor of Philosophy

The Ph.D. program is designed as a professional guide and a stimulating environment for students with prior achievement or notable promise in writing poetry or fiction. The flexible requirements include 48 semester hours of graduate credit, at least 72 semester hours of graduate credit, at least 30 of which must be earned in residence at The University of Iowa.

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Concentrations are offered in areas such as literary history, literary theory, cultural studies, and criticism. The doctorate includes an examination covering modern poetry or fiction.
three seminars taken at The University of Iowa;

a comprehensive examination that consists of the following: written responses to questions in a period of 5 hours on American literature and/or American history, and a subsequent oral examination;

a dissertation, usually a scholarly work in rare cases and with special permission, it may be a novel or a collection of poems or short stories;

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 sciences. General Education Requirement.

Application forms and a complete description of the program are available from the graduate secretary of the department.

Financial Aid

Financial aid is available to graduate students in the form of scholarships, fellowships, and teaching and research assistantships. It is awarded on a competitive basis. Since sources are limited, usually fewer than half of new doctoral students receive aid. Many, but not all, advanced doctoral students receive support.

Financial aid applications are considered only from students who have applied or been selected to a degree program in the Graduate College. Applications and all necessary supporting material must be submitted by February 15. Applications and further information forms are available from the University Office of Admissions.

Admission

Admission requirements are set in Special Requirements and Information/Graduate Admissions, which is available from the English department graduate office.

Writing Programs

For the past 50 years, The University of Iowa has been a national leader in the teaching of writing. In 1923 it became the first institution of higher education to accept creative dissertations for advanced degree programs.

Founded in 1950, the Writers' Workshop was a pioneer in the field of creative writing; it numbers scores of distinguished poets and novelists among its alumni. The workshop provides opportunities for students at all levels to work with outstanding teachers. It also brings numerous prominent authors to campus each year for lectures and readings.

The International Writing Program, founded in 1966, brings prominent foreign writers to campus each year.

The University of Iowa also is a leader in the area of nonfiction writing and literary theory; it is one of the few academic institutions in the nation that offer a full range of graduate course work in this area.

Facilities

The University's literary collection is strong in all areas of English and American literature. Particularly because of the influence of the Writers' Workshop, the library has particular strengths in seventeenth-century fiction and poetry, including manuscript collections of eighteenth-century authors.

The Zorach Reading Room (the departmental library) has a small but select collection of books and journals for use by faculty and students.

Several periodicals are published under the department's sponsorship: The Iowa Review, The Writers Quarterly Review, and Philological Quarterly. These journals offer opportunities for especially qualified graduate students to work as research assistants or editorial assistants.

The Iowa Journal of Literary Studies, edited by English department graduate students, features creative and scholarly work by students in English and related areas.

The Writers Press, which publishes fine editions of works by contemporary authors, also is housed in the department. It offers qualified students the opportunity to learn the art of fine printing.

The Department of English, the Women's Workshop, and the International Writing Program 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 provides social, cultural, and intellectual events during the year and provides a forum for student kept. All graduate students in the department are members.

Courses

Individual descriptions for the courses listed here are not included because content and emphasis may vary considerably from one semester to the next. Detailed course descriptions for all undergraduate courses in a specific semester are published in the Liberal Arts Guide to Courses. Detailed course descriptions for each semester's graduate courses are available in the English department office.

General Education Literature

Students can satisfy the General Education requirement in the humanities by taking 13-14 credits in literature and other approved humanities courses. English majors need not take 13-14, but may satisfy the requirement by taking 15 semester hours of approved humanities courses. BC 8-10 (or equivalent by examination or transfer) is prerequisite for the other courses (BC 8 through BC 15) and must be taken first. The pass/no-pass option is available only for students in the College of Nursing and Engineering with the consent of the student's advisor and the instructor. Students must successfully complete the menmonic requirement before they may take RC course.

BC 8 Biblical and Classical Literature

Survey of western literature, prose and drama, through the Middle Ages and humanism. For those who have already studied the subject, M 10 is recommended. 3 cr.

BC 9 Medieval and Renaissance Literature

English and European poetry, prose, drama from 1150 to 1630 in dialogue with contemporary concern, dissertation. 3 cr.

BC 10 Epic and Tragic Literature

Survey of the literary tradition from epic to tragedy, from Homer to Shakespeare, with emphasis on the oral and written traditions. For those who have already studied the topic, M 11 or M 12 is recommended. 3 cr.

RC 1 The Poems of Common Men

Survey of American literature as a social and cultural movement and offers selected poems of American and creative writers to help interpret literary concern. 3 cr.

RC 2 Modern American Literature

Survey of American literature since the early 20th-century and the development of the modernist tradition. 3 cr.

RC 3 Lyric Poetry

Fiction and poetry of the Romantic era. 3 cr.

RC 4 McGuffey's Reader

Selections and excerpts from McGuffey's Reader (for the study of American literature). 3 cr.

RC 5 American Indians

Study of American Indian literature. 3 cr.

RC 6 Cosm and Classic Literature

Survey of the literary tradition from epic to tragedy, from Homer to Shakespeare, with emphasis on the oral and written traditions. For those who have already studied the topic, M 11 or M 12 is recommended. 3 cr.

RC 7 Literature of the Atlantic People

Survey of the literature of the Atlantic peoples. 3 cr.

RC 8 Women's Literature and Culture

Survey of women's literature and culture through history, with emphasis on the cultural, political, and intellectual movements that have defined literary and cultural production. 3 cr.

Primarily for Undergraduates

English department courses are open to all undergraduates who have satisfied the menmonic requirement. In most cases, undergraduates should complete one or more departmental courses before the 100-level courses. English majors are required to take at least one course from the first four categories.

Readings

These specialized dissertation courses are intended for English majors, but other students should consult the instructor before registering.

03 Reading Novels

03 Reading Poems

03 Reading Short Stories

03 Reading Plays
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>BR.186</td>
<td>Approaches to Teaching Literature</td>
<td>3 cr.</td>
</tr>
<tr>
<td>BR.187</td>
<td>Language and Learning</td>
<td>2 cr.</td>
</tr>
<tr>
<td>BR.190</td>
<td>Methods of English</td>
<td>3 cr.</td>
</tr>
<tr>
<td>BR.191</td>
<td>Methods of Adolescence</td>
<td>3 cr.</td>
</tr>
<tr>
<td>BR.215</td>
<td>Seminar: Remedial Development in Elementary Education</td>
<td>3 cr.</td>
</tr>
<tr>
<td>BR.220</td>
<td>Teaching in a Hearing Lab</td>
<td>3 cr.</td>
</tr>
<tr>
<td>BR.290</td>
<td>MA Seminar: English Education</td>
<td>3 cr.</td>
</tr>
<tr>
<td>BR.300</td>
<td>Seminar: English Education</td>
<td>3 cr.</td>
</tr>
<tr>
<td>BR.320</td>
<td>Colloquium: Teaching Practice</td>
<td>3 cr.</td>
</tr>
</tbody>
</table>

### Nonfiction Writing

The following courses may be repeated: BR.10, BR.100, BR.120, BR.150, BR.205, and BR.350. Others may be repeated with consent of the instructor and either the director of undergraduate studies or the director of graduate studies.

### Practise in Writing

- BR.186 Approaches to Teaching Literature: 3 cr.
- BR.187 Language and Learning: 2 cr.
- BR.190 Methods of English: 3 cr.
- BR.191 Methods of Adolescence: 3 cr.
- BR.215 Seminar: Remedial Development in Elementary Education: 3 cr.
- BR.220 Teaching in a Hearing Lab: 3 cr.
- BR.290 MA Seminar: English Education: 3 cr.
- BR.300 Seminar: English Education: 3 cr.
- BR.320 Colloquium: Teaching Practice: 3 cr.

### Creative Writing

All may be repeated.

### General Interest

- BR.220 Creative Writing: 3 cr.
- BR.460 Introduction to Translation Studies: 3 cr.
- BR.106 History of Theory of Translation: 3 cr.
- BR.107 Fiction Writing: 3 cr.
- BR.108 Fiction Writing II: 3 cr.
- BR.113 Writing for Business and Industry: 3 cr.
- BR.115 Writing for the Arts: 3 cr.
- BR.130 Directed Projects: New Journalism Writing: 3 cr.
- BR.171 Forms of Writing: 3 cr.
- BR.190 Undergraduate Essay Workshop: 3 cr.
- BR.200 Advanced Writing: 3 cr.
- BR.211 Writing Workshop for Teachers: 3 cr.
- BR.290 Critical Writing: 3 cr.
- BR.350 Essay Seminar Workshop: 3 cr.

### Theory and Practice of Writing

These courses (except BR.100 and BR.120) are offered with limited enrollment and will be offered as a part of the liberal arts program. The following courses require the consent of the instructor and the director of undergraduate studies.

- BR.137 Theories of the Essay: 3 cr.
- BR.138 Art of the Essay: 3 cr.
Exercise science majors must complete the following core courses plus 17 semester hours in their elected subfield(s).

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>4:14 Principles of Chemistry II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>7:143 Introduction to Statistical Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>221:102 Introduction to Statistical Methods</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>222:101 Biometrics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>222:7 Introduction to Computing with FORTRAN</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>221:70 Computer Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>57:17 Computers in Engineering</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>24:11 College Physics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>24:17 Introductory Physics I</td>
<td>3-7 s.h.</td>
</tr>
<tr>
<td>29:12 College Physics</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>26:18 Introductory Physics II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>2:3 Principles of Animal Biology</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>72:150 Human Physiology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>72:150 Intermediate Physiology</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

The following courses should be completed prior to the junior year.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>27:141 Exercise Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:142 Exercise Physiology Laboratory</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>27:150 Exercise Science Seminar</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>27:140 Motor Control I</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>27:190 Exercise Science Seminar</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>27:155 Exercise Science Seminar</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>27:191 Exercise Science Seminar</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

Subspecialties

Elective courses for the 17 semester hours in the subspecialties in exercise science are listed below.

**ANATOMY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:121 Cell, Tissue and Organ Biology</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>27:153 Advanced Anatomy and Embryology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>27:155 Skeletal Muscle Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:157 The Nervous System of Human Motion</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:154 Exercise Science Seminar</td>
<td>2-3 s.h.</td>
</tr>
<tr>
<td>27:253 Laboratory in Advanced Anatomy</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

**BIOCHEMISTRY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>22:26 Calculus II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>22:36 Engineering Biology II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>27:155 Skeletal Muscle Biology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**CHEMISTRY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>27:157 The Origin and Analysis of Human Motion</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:190 Exercise Science Seminar</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>57:70 Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>72:150 Mechanisms of Determinate Bodies</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**GERIATRIC PHYSIOLOGY**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:150 Introductory Geriatriology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>2:152 Geriatriology Laboratory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>2:153 Organic Chemistry II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>2:154 Organic Chemistry II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>2:155 Skeletal Muscle Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>2:156 Exercise Science Seminar</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>90:110 Biochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>90:120 Biochemistry and Molecular Biology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>90:130 Biochemistry and Molecular Biology</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

**MOTOR CONTROL**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2:40 Biology of the Brain</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>2:112 Cell, Tissue, and Organ Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>2:143 Animal Behavior</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>2:155 Cell Physiology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>2:190 Endocrinology, Neuroendocrinology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>2:181 Neurophysiology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>27:155 Advanced Anatomy and Embryology</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>27:155 Skeletal Muscle Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:157 The Nervous System of Human Motion</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:159 Exercise Science Seminar</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>3:120 Physiological Psychology and Psychobiology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**BACHELOR OF SCIENCE IN PHYSICAL EDUCATION**

The B.S. degree in physical education is offered as a general major or as a specialization in athletic training.

**GENERAL MAJOR**

Students who elect the general major in physical education must complete the following courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>27:153 Human Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:56 First Aid and CPR</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>28:71 Human Growth and Motor Development</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>28:75 Contemporary Issues in Health Promotion</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:107 Biomechanics of Physical Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:108 Motor Learning and Motor Control</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:149 Exercise Physiology for General Majors</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>28:82 Psychosocial Dimensions of Physical Activity</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>28:101 Physical Education for the Handicapped</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:110 Measurement and Evaluation in Physical Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>72:150 Human Physiology</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

**ATHLETIC TRAINING PROGRAM**

The athletic training program provides the following core courses plus 17 semester hours in their elected subfield(s), leading to the National Athletic Training Association certification in athletic training. Employment opportunities for graduates include serving as health care professionals for sports medicine clinics and professional teams as well as university, college, and secondary school athletic teams. Teacher certifications are recommended but not required.

- Students who have not formally contacted the athletic training program director prior to the second year of study should contact the University of Iowa athletic training advisor before enrolling in the program. Early advising should be sought for course counseling since prerequisite courses and sequenced skill development must be completed along with general education courses.

College of Liberal Arts and Sciences students are formally admitted into the program and begin clinical experience as sophomores. Application is made between January 1 and March 1 of the freshman year. To be considered for admission, students must complete preprofessional experiences and at least one college-level course in a minimum of two of the following areas: biology, chemistry, microbiology, physics, introductory psychology, human anatomy, human growth and development, health, and introductory athletic training.

Program requirements include the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>27:107/108 Biomechanics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:140/141 Exercise Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>3:120 Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:149 Exercise Science Seminar</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>27:157 The Nervous System of Human Motion</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:159 Exercise Science Seminar</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>3:120 Physiological Psychology and Psychobiology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**GRADUATE PROGRAMS**

**BACHELOR OF SCIENCE without Thesis**

The program leading to the B.S. without thesis is the minimal course of study for athletic trainers and students in the combined physician assistant-exercise science program.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>27:153 Human Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>27:190 Exercise Science Seminar</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>57:70 Anatomy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>72:150 Mechanisms of Determinate Bodies</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**COLLEGE OF LIBERAL ARTS AND SCIENCES**
Athletic Training Emphasis

The newsletter program in athletic training is designed to train an advanced area of study in clinical practice and research for the clinical 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 32 semester hours) is required background for the minor. M.S. program in athletic training.

- Cadet anatomy 4 s.h.
- Human physiology 3 s.h.
- Exercise Science Core:
  - Prevention 3 s.h.
  - Evaluation & Remediation 3 s.h.
  - Rehabilitation 3 s.h.
  - Administration 2 s.h.
- Massage Therapy 3 s.h.
- Exercise Science Core:
  - Kinesiology 3 s.h.
  - Exercise Laboratory 3 s.h.
- Exercise Science Core:
  - Biomechanics 3 s.h.
  - Electives in Related Area 3 s.h.
- Current emunragy certificates NATA certification or eligibility

Course Requirements

For the M.S. without thesis, students must complete 30 semester hours, at least 30 of which must be in exercise science, including 27.141 Exercise Physiology and 27.142 Exercise Physiology Laboratory. The following courses are required for the M.S. without thesis in athletic training.

Exercise Science

Three courses from the following:
- 27.141 Exercise Physiology 3 s.h.
- 27.142 Exercise Physiology Laboratory 1 s.h.
- 27.153 Advanced Anatomy and Physiology 3 s.h.
- 27.155 Skeletal Muscle Biology 3 s.h.
- 27.157 The Qualitative Analysis of Human Motion 3 s.h.
- 27.160 Motor Control I: Neurophysiological Basis 3 s.h.

Clinical Research Tools

Two courses from the following:
- 70-143 Introduction to Statistical Methods 3 s.h.
- 65-161 Introduction to Biostatistics 3 s.h.

An approved data processing or instructional language course in computer science 2-4 s.h.

Athletic Training

- 27.301 Non-Thesis Seminar 3 s.h.
- 27.184 Seminar in Athletic Training (3 registrations) 6 s.h.

130:158 Principles of Epidemiology 3 s.h.
- 794:121 Design and Developing Instructional Materials 3 s.h.
- 691:123 Introduction to Human Performance 3 s.h.

Electives

A total of 4 semester hours.

Physician Assistant-Exercise Science Emphasis

For the M.S. without thesis, physician assistant-exercise science combined program. See "Physician Assistant Program" in College of Medicine section of the Catalog.

Master of Science with Thesis

The thesis program leading to the M.S. in exercise science is designed primarily for a first year in graduate study leading to the Doctor of Philosophy. As such, it is a research-oriented program that introduces students to the nature and extent of research in exercise science and gives them an opportunity to specialize in an area of interest.

Because the M.S. with thesis is regarded as the first step toward the Ph.D. in one of four areas of specialization, the graduate program consists of 30 semester hours required on the area in which the candidate intends to specialize for doctoral study leading to the Doctor of Philosophy. As such, it is a research-oriented program that introduces students to the nature and extent of research in exercise science and gives them an opportunity to specialize in an area of interest.

Electives

A total of 4 semester hours.

Doctor of Philosophy

Admission

Admission to the Ph.D. program is based on applicants' grade-point average on work completed for the M.A. and baccalaureate degree and their score on the Graduate Record Examination (GRE) General Test. To be considered for admission, applicants must have earned a grade-point average of 3.0 or higher on their baccalaureate work. For consideration to the Ph.D. program in exercise science, applicants must be graduates of an approved professional program in physical therapy and must hold a master's degree, which need not be in physical therapy. 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. Specialization areas offered include anatomy, biomechanics, exercise physiology, motor control, and therapeutics.

The thesis program for the M.S., together with the Ph.D. core courses, provides the background required for the Ph.D. candidate's specialization. Candidates must complete a minimum of 72 semester hours beyond the B.S. or B.A. This must include a comprehensive dissertation on a problem 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. The majority of the courses in the specialization areas are offered by departments other than the Department of Exercise Science. Professors from these departments frequently serve on the comprehensive examination committees and on the final examinations which give the candidate the opportunity to present the candidate's proposed problem. They also participate in the final oral examination in which the candidate defends the dissertation.

General Requirements

Ph.D. candidates must fulfill all the following requirements.

Completion of the M.A. or M.S. with thesis is not a minimum of 30 semester hours of independent research. The thesis requirements (provides students with additional opportunities to conduct research, the results of which may be submitted for publication) at least 27 semester hours of graduate credits beyond the M.A. or M.S. (typically over 30 semester hours) and have a minimum of 30 semester hours of independent research. The thesis requirements (provides students with additional opportunities to conduct research, the results of which may be submitted for publication) at least 27 semester hours of graduate credits beyond the M.A. or M.S. (typically over 30 semester hours) and have a minimum of 30 semester hours of independent research. The thesis requirements include an additional opportunity to conduct research, the results of which may be submitted for publication. The thesis requirements (provides students with additional opportunities to conduct research, the results of which may be submitted for publication) at least 27 semester hours of graduate credits beyond the M.A. or M.S. (typically over 30 semester hours) and have a minimum of 30 semester hours of independent research. The thesis requirements include an additional opportunity to conduct research, the results of which may be submitted for publication. The thesis requirements include an additional opportunity to conduct research, the results of which may be submitted for publication.

Core Course Requirements

Two approved courses in statistics

Two approved computer science courses

Total (minimum of 10 s.h.)
27-203 Practicum in College Teaching · minimum of 3 s.h.
27-405 Thesis· Ph.D. (12 s.h.)

SCIENTIFIC AREA COURSES
In order to ensure that exercise science doctoral candidates obtain a minimal breadth of knowledge over the key scientific areas that comprise the basis of the major, the following scientific area course requirements must be satisfied.

Students specializing in anatomy, biomechanics, exercise physiology, and motor control must select one course from each of the four areas below. There must be two second-level courses. Students specializing in therapeutics must select one course from each of the four areas below. They must select two second-level courses. They must submit a formal request to the exercise science faculty to substitute specific courses from their program for the scientific area courses listed below, provided the substitute courses contain both a lecture and a laboratory format.

Anatomy
First level: 27-150 and 27-151 (4 s.h.)
Second level: 27-253 (6 s.h.)

Biomechanics
First level: 27-117 (3 s.h.)
Second level: 27-197 (4 s.h.)

Motor Control
First level: 27-108 (3 s.h.)
Second level: 27-101 (6 s.h.)

Exercise Physiology
First level: 27-141 and 27-142 (4 s.h.)
Second level: 27-274 and 27-302, or 27-275 and 27-303, or 27-276 and 27-305 (3 s.h.)

QUALIFYING AND COMPREHENSIVE EXAMINATIONS
To ensure general background knowledge, all Ph.D. candidates must pass the qualifying examination, which should be taken prior to the third semester of graduate study (prior to the fifth semester if the student 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 (prior to the sixth semester following the bachelor's degree). Candidates specializing in exercise physiology who wish a 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 50-60 semester hours. Recommended courses for each area of specialization are in italics.

KINESIOLOGY 5 s.h.
27-212 Cell, Tissue, and Organ Biology
27-153 Advanced Anatomy and Biophysics
27-253 Laboratory in Advanced Anatomy

CHOOSING A SECOND AREA

Kinesiology and Exercise Science

27-203 Electromyography in Kinesiology and Biomechanics
27-212 Developmental Anatomy
27-212 Medical Neuroscience
27-101 Introduction to Radiobiology and Radiotherapy
27-214 Biokinetics in Biological Research
95-310 Biochemistry and Molecular Biology I
95-100 Biochemistry and Molecular Biology II
95-101 Biochemistry

Biomechanics 6 s.h.
27-253 Laboratory in Advanced Anatomy
27-254 Electromyography in Kinesiology and Biomechanics
27-357 Research Techniques in Biomechanics
27-199 Mechanics of Deformable Bodies
27-202 Mechanics of Fluids and Transient Processes
27-311 Principles of Design I
58-161 Intermediate Dynamics
63-162 Design and Analysis of Experiments in the Biomechanical Sciences
101-312 Biomechanical Instrumentation

Exercise Physiology 6 s.h.
21-112 Cell, Tissue, and Organ Biology
60-305 General Histology for Graduate Students
21-150 Introductory Endocrinology
21-152 Endocrinology Laboratory
71-105 Pharmacology for Health Sciences Medical
72-112 Medical Physiology
72-234 Medical Neurophysiology
27-174 Exercise Physiology Seminar
27-103 Introduction to Radiobiology and Radiotherapy
27-214 Biokinetics in Biological Research
95-210 Biochemistry and Molecular Biology I
95-130 Biochemistry and Molecular Biology II

Motor Control 6 s.h.
21-100 Fundamental Neurophysiology
27-305 Electromyography in Kinesiology and Biomechanics
27-314 Seminar in Motor Control
101-212 Biomechanical Instrumentation

Therapeutics 6 s.h.
Candidates for this specialization must be accepted into the graduate program in physical therapy education as well as in exercise science. Prerequisites are listed under required courses for the Master of Arts in physical therapy under "Evolution of Associated Medical Sciences" in the College of Medicine section of the Catalog. Students specializing in therapeutics must satisfy the scientific area course requirements listed for the exercise science major.

General Core 2 s.h.
22C-100 Introduction to Computing with Python (or equivalent)
22-273 Research Data Management
75-247 Data Processing
27-405 Thesis· Ph.D.
101-214 Advanced Seminar in Physical Therapy
101-380 Teaching Practicum

Research 3 s.h.
27-203 Research
101-204 Practicum in Research
101-205 Independent Study
101-327 Research in Therapeutics

Total 10 s.h.

Facilities

Classroom and research laboratories for anatomy, biomechanics, physiology of exercise, and motor control are located in the building. House and in other buildings on campus. They provide extensive 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.

Courses

Primarily for Undergraduates 4 s.h.
27-000 Cooperative Education Internship
27-001 Human Anatomy
27-003 Human Anatomy (covering all aspects of the body, for students majoring in physical education and athletic coaching or planning career in the health professions)
25H First Aid and CPR
25H First Aid and CPR (American Red Cross certification; basic first aid, CPR procedures. Offered fall and spring semesters. Same as 25H-
27-007 Basic Exercise Training
27-008 Exercise Testing and Prescription
27-013 Kinesiology
27-018 Exercise Testing and Prescription
27-019 Exercise Testing and Prescription
27-020 Exercise Testing and Prescription
Bachelor of Arts in Italian
Requirements for the major in Italian total 28 semester hours, as follows:

18-111 12 Introduction to Modern Italian Literature
18-111 12 Advanced Composition and Conversation
18-111 12 Advanced Composition and Conversation

A 100-level course taught in Italian

Elementary and Secondary Teaching Certification in Italian
Italian majors interested in certification to teach in elementary and/or secondary schools must successfully complete the requirements for a major in Italian, including an additional 2 semester hours in either 18-13 or 18-14, 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. Further information can be obtained by contacting the College of Education, Division of Curriculum and Instruction for more information.

French majors interested in certification to teach in elementary and/or secondary schools must successfully complete the requirements for a major in French and 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. Further information can be obtained by contacting the College of Education, Division of Curriculum and Instruction for more information.

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.

Applied French Track
The applied French track is designed for students with an interest in areas such as law, business, journalism, or foreign affairs. It requires 36 semester hours in French, as follows:

18-105 12 French Composition and Conversation
18-111 12 Third Year Composition
18-115 Business French
18-120 French Conversation: Third Year
18-130 French Conversation: Fourth Year
18-135 Techniques of Translation
18-150 Transition Project

Two courses each in French civilization and literature

Courses in French methodology and criticism, another language, economics, political science, and/or business administration are recommended as elective subjects.

Ceremonies in Latin, the program combines formal class work in language skills, courses in the culture and civilization of France, and visits to sites of cultural and historical interest. Students may earn 6 or 9 semester hours of credit 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 Ducez-d'etre pour mon Universite 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.

Foreign Language House
The French and Italian department maintains close connections with the Maison Francaise in the Foreign Language House at Elmhurst Residence Hall. Residents major in cultural and educational programs with the participation of the faculty and other students, providing a unique opportunity to combine living with language learning.

Graduate Programs
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 9-209 Advanced Grammar and Lexicology, 9-340 Comparative Statistics, and at least four graduate-level (200 and above) literature courses. With the permission of the department chairman, candidates may take up to 6 of their 30 semester hours outside the department. Teaching assistants in the department also must take 9-234 Proctor in Teaching and Learning, Foreign Languages.

Master of Arts in French with Thesis
The requirements for the thesis program are the same as for the M.A. without thesis, except that candidates may earn up to 6 semester hours of credit for thesis work. Candidates must defend the thesis at the time of the comprehensive examination.

Master of Arts in French Education
This program is intended primarily for prospective secondary school and junior college teachers. Requirements include a total of 38 semester hours of graduate credit, of which 8
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 in graduate study, of which at least one must be spent in residence at the University of Iowa. They must pass a comprehensive examination and make a successful viva-voce defense of their dissertation.

Specific requirements include 9-125 Introduction to Old French Literature and four semester hours of course study in one of the following areas: phonology in a foreign language other than French.

Candidates also must complete three graduate courses, for a total of at least 8 semester hours of credit in a related field, such as another language, literature, history, or philosophy, and must earn at least a 3.0 average in those courses.

These courses working toward the dissertation 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. Students may make up deficiencies in previous training by taking appropriate courses.

The M.A. degree is such 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.

Following admission to the Ph.D. program, students must be formally accepted for candidacy by a vote of the faculty, usually in the third or fourth semester of doctoral study.

The Graduate Record Examination (GRE) General Test scores are required by the Graduate College.

Appointments

Teaching and research assistantships and University fellowships and scholarships are available to qualified graduate students. The Graduate College section of this catalog gives requirements for these and for other graduate fellowships.

Examination and graduation requirements with the University of Iowa’s graduate schools. The University of Iowa, and the University of Paris 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 stated. Students may not receive credit for a course that is prerequisite to, or whose equivalent is prerequisite to, a higher level course they have already completed.

French — For Undergraduates

Courses numbered 150-199 are intended primarily for advanced undergraduates; graduate students should consult with their advisor before registering for these courses.

Courses numbered 140-149 are conducted in English and do not count toward the requirements for the major or minor in French but may be taken as electives; consultation with the advisor is recommended prior to registration. Students who have had significant experience with French or foreign languages are advised to consult with the department before enrolling.

000 Cooperative Education Internship

3.0 A. for students who are knowledgeable of French. CFB: Foreign language.

8.0 Beginning French

4.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

103 First-Year French Review

5.0 A year to review grammar, CFB: Foreign language.

104 Intermediate French

3.0 Open only toSatiation. CFB: Foreign language. Pre-Requisite: 01 or equivalent.

122 Beginners French

3.0 Open only to freshmen. CFB: Foreign language. Pre-Requisite: 01 or equivalent.

122 Introduction French

3.0 Conversation of H.L. Open only to freshmen. CFB: Foreign language. Pre-Requisite: 01 or equivalent.

225 French Pronunciation

2.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

526 French Composition: First Year

5.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

530 French Composition: Second Year

5.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

537 Special Work

4.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

612 Second-Year Composition

6.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

613 Second-Year Composition

6.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

9.0 Comp. of 01, 02, or 03. CFB: Foreign language. Prerequisite: 01 or equivalent.

111 Business French

1.0 Open only to freshmen. CFB: Foreign language. Pre-Requisite: 01 or equivalent.

116 French Composition: First Year

1.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

119 French Composition: Second Year

1.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

120 French for Business

1.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

126 French Composition: Third Year

1.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

129 French Composition: Fourth Year

1.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

131 French for Business

1.0 Open only to freshmen. CFB: Foreign language. Pre-Requisite: 01 or equivalent.

134 French Composition: Fifth Year

1.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

141 Latin for Business

1.0 Open only to freshmen. CFB: Foreign language. Pre-Requisite: 01 or equivalent.

144 French for Business

1.0 Open only to freshmen. CFB: Foreign language. Pre-Requisite: 01 or equivalent.

150 French Composition: Sixth Year

1.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

151 French Composition: Seventh Year

1.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

160 French Composition: Eighth Year

1.0 CFB: Foreign language. Pre-Requisite: 01 or equivalent.

161 French Composition: Ninth Year

1.0 Open only to freshmen. CFB: Foreign language. Pre-Requisite: 01 or equivalent.
General Education Requirements

Students must complete the College of Liberal Arts General Education Requirements, including two semesters of college-level foreign language or the equivalent. (See the College of Liberal Arts introductory section for specific information.)

Advanced Course Work

Students must complete at least 36 semester hours of advanced course work at the University of Iowa. No more than 16 semester hours of advanced course work from any one department may count toward this requirement. (However, students who earn more than 16 semester hours in advanced course work from one department, may count toward the 124 semester hours needed for graduation.)

Students must take the General Education Requirements may be counted toward the number of advanced course work requirements.

Advanced courses are those numbered 100 and above. With approval of the Office of Program Academic Programs, courses numbered below 100 but listed as advanced-level may be used to satisfy this requirement. See "Advanced Courses Numbered below 100." in this section of the Catalog.

Some courses in art and design, as well as courses in architecture, may be counted toward the B.A. or B.S. degree. However, course work in these areas must be approved by the College of Liberal Arts.

Restrictions

No more than 40 semester hours of credit in one department may count toward the 124 semester hours required for graduation. This includes both upper- and intermediate course work, and both UI and transfer course work.

Students completing a B.S. degree 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 administration, engineering). Undergraduate courses offered by the College of Education are an exception to this rule.

All other College of Liberal Arts majors require satisfactory, pass/fail, or academic standards apply to B.G.S. students.

American Studies

45-90 Seminar in American Cultural Studies 3.s.h.

Art and Art History

1K-49 Advanced Painting 2.5.s.h.

1M-22 Undergraduate Graphic and Printmaking 3.s.h.

1N-17 Undergraduate Sculpture Workshop 3.s.h.

Asian Languages and Literature

56-23 Senior-Year Seminar in Art and Design 3.s.h.

50-50 Non-Western Literatures 3.s.h.

Biological Sciences

2-4 Intermediate Laboratory in Biology 2.s.h.

(accepted as advanced course work only if 110.101 Plant Taxonomy also is completed)

Classics

14-11 Second-Year Greek I 3.s.h.

14-12 Second-Year Greek II 3.s.h.

20-81 Age of Cicero 3.s.h.

20-82 Age of Augustus 3.s.h.

Communication Studies

All courses numbered 356-695 and above All courses numbered 360-695 and above

Comparative Literature

46-40 Major Tests in World Literature I 3.s.h.

46-41 Major Tests in World Literature II 3.s.h.

46-50 Non-Western Literatures 3.s.h.

46-95 Undergraduate Seminar 3.s.h.

Computer Science

220-21 Algorithms and Data Structures 3.s.h.

220-23 Programming Language Concepts 3.s.h.


220-32 Introduction to Systems Software 3.s.h.

220-51 Computer Graphics 3.s.h.
general studies exists outside traditional departmental structures, a specific firm for approval of an honor's project must be found with the B.G.S. coordinator, the associate director of the honors program, and the student's B.G.S. adviser.

Career Considerations
Since the B.G.S. degree affords opportunities outside the traditional degree pattern, students must create programs of study that fulfill their individual educational and career objectives. The earlier students decide on pursuit of graduate or professional school, the easier it is for them to complete any necessary prerequisites.

B.G.S. students who design a coherent program and maintain a competitive grade-point average may be considered equally with students who elect other undergraduate degrees for employment or advancement to some graduate and professional fields.

Courses

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>800:000</td>
<td>Comparative Education Supervision</td>
<td>Undergraduate</td>
</tr>
</tbody>
</table>

Honors

B.G.S. students qualify for membership in the University Honors Program by maintaining a cumulative grade-point average of at least 3.50. Graduating with honors usually signifies the successful completion of the honors requirements in a particular department. A list of departmental requirements is available from the University Honors Program or from the B.G.S. coordinator.

B.G.S. students who desire to graduate with honors must contact the B.G.S. coordinator. Students are encouraged to begin inquiries early in their junior year to allow time for foundation course work. The associate director of the Undergraduate Honors Program can offer suggestions for contacting a supervising faculty member or committee from one or several appropriate departments.

Students who enroll in the program are encouraged to obtain a broad background in genetics, ranging from molecular to population 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 90:15 Biochemistry and Molecular Biology I, 2:215 Genetics Seminar (two 61:315, 91:315), and either 2:171 Molecular Genetics or 12:151 Molecular Biology I. In addition, they must earn a total of at least 10 semester hours of credit in molecular and microbial genetics, cell and developmental genetics, and quantitative and population genetics.

More important than formal course work is the opportunity to do significant research in genetics. Students are encouraged to begin their research as quickly as possible. Research interest of the participating faculty include viral evolutionary areas, ranging from bacteriophage genetics to human medical genetics. In each area of genetics, there is a group of faculty members who share closely related interests. The Undergraduate is also strong in several related disciplines, including microbial physiology, molecular biology, pharmacology, and developmental, cell, and population 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 within their first two years in the program.

Admission

Prospective doctoral students in genetics should have a strong undergraduate background in sciences, including training in general genetics, organic chemistry, introductory biology, and microbiology, as well as a strong interest in general research and teaching. Students can qualify for admission in a particular year during their first year of graduate study.

Admission to the program is based on consideration of applicants' undergraduate academic records, performance in the Graduate Record Examination (GRE) Advanced Test (verbal and quantitative), and letters of recommendation. Admission decisions cannot be reversed. All applicants must be registered at the University for at least two undergraduate grade point averages at least 3.50, and their average GRE Multiple Scores (verbal plus quantitative) exceed 1030. Students with lower gradepoint averages or GRE scores may be admitted, depending on other indicative aspects of academic excellence.

The program accepts applications for admission at any time, but students generally begin graduate work during the fall semester.

Financial Aid

All graduate students currently receive a stipend that is in the range of $11,000 to $12,000 per year. By April 1, nearly all financial aid is committed for students entering in the fall.

<table>
<thead>
<tr>
<th>Final Exam</th>
<th>B.G.S.</th>
<th>GENETICS</th>
<th>Program</th>
<th>Undergraduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>800:000</td>
<td>Comparative Education Supervision</td>
<td>Undergraduate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Financial support comes from research universities, teaching endowments, scholarships, individual research grants, or other governmental or college funds. All students are encouraged to do some teaching as part of their development as scientists and teachers.

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.

Departmental Ph.D. Programs

The Departments of Biochemistry, Biological Sciences, Theology and Ethics, and Microbiology offer degree programs in which students may specialize in a particular aspect of genetics. See the appropriate departmental sections in the Catalog for information about these programs.

Courses

The following genetics courses are open to graduate students. Not all courses are offered every year.

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
<th>Type</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-125</td>
<td>Genetics I</td>
<td>3 credit hours</td>
<td>3</td>
</tr>
<tr>
<td>2-131</td>
<td>Evolution</td>
<td>4 credit hours</td>
<td>4</td>
</tr>
<tr>
<td>2-142</td>
<td>Genetics and Biogenesis of Cell Organelles</td>
<td>3 credit hours</td>
<td>3</td>
</tr>
<tr>
<td>2-161</td>
<td>Plant Molecular Biology</td>
<td>3 credit hours</td>
<td>3</td>
</tr>
<tr>
<td>2-162</td>
<td>Population Genetics and Molecular Evolution</td>
<td>3 credit hours</td>
<td>3</td>
</tr>
<tr>
<td>2-164</td>
<td>Seminar in Plant Molecular Biology</td>
<td>2 credit hours</td>
<td>2</td>
</tr>
<tr>
<td>2-171</td>
<td>Molecular Genetics</td>
<td>4 credit hours</td>
<td>4</td>
</tr>
<tr>
<td>2-172</td>
<td>Topics in Molecular Genetics</td>
<td>2 credit hours</td>
<td>2</td>
</tr>
<tr>
<td>2-176</td>
<td>Topics in Ecological Molecular Biology</td>
<td>2 credit hours</td>
<td>2</td>
</tr>
<tr>
<td>2-215</td>
<td>Developmental Biology</td>
<td>2 credit hours</td>
<td>2</td>
</tr>
<tr>
<td>2-215</td>
<td>Introduction to Development (same as 41-215, 20-215)</td>
<td>2 credit hours</td>
<td>0.5</td>
</tr>
<tr>
<td>2-267</td>
<td>Developmental Genetics</td>
<td>2 credit hours</td>
<td>2</td>
</tr>
<tr>
<td>61-179</td>
<td>Bioethics in Research</td>
<td>3 credit hours</td>
<td>3</td>
</tr>
<tr>
<td>61-358</td>
<td>Molecular Biology of Apoptosis and the Liver</td>
<td>3 credit hours</td>
<td>3</td>
</tr>
<tr>
<td>61-379</td>
<td>Topics in Molecular Biology</td>
<td>2 credit hours</td>
<td>2</td>
</tr>
<tr>
<td>70-141</td>
<td>Human Genetics</td>
<td>2 credit hours</td>
<td>2</td>
</tr>
<tr>
<td>92-150</td>
<td>Biochemistry and Molecular Biology II</td>
<td>4 credit hours</td>
<td>4</td>
</tr>
<tr>
<td>94-223</td>
<td>Gene Expression</td>
<td>1 credit hour</td>
<td>1</td>
</tr>
<tr>
<td>94-271</td>
<td>Advanced Genetics</td>
<td>1 credit hour</td>
<td>1</td>
</tr>
<tr>
<td>127-301</td>
<td>Graduate Research in Genetics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>142-215</td>
<td>Molecular Biology II</td>
<td>3 credit hours</td>
<td>3</td>
</tr>
</tbody>
</table>

Assistant professor: Cline Hoyt

Advisory Committee: Matthew H. Hoyt

Undergraduate degree: B.S. in Genetics

Graduate degree: Master of Science in Genetics

Geography seeks to understand spatial organization and examine the interactions of the physical and social systems. This program involves an advanced research project and introduces students to the principles of ecology, environmental science, and physical geography.

General Requirements

All geography majors must complete one of the following computer programming courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-107</td>
<td>Introduction to Computing</td>
<td>3 credit hours</td>
</tr>
<tr>
<td>22-116</td>
<td>Introduction to Programming with Pascal</td>
<td>4 credit hours</td>
</tr>
</tbody>
</table>

Bachelor of Science students must satisfy a mathematics requirement consisting of one of the following pairs of courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>22M-101</td>
<td>Calculus I</td>
<td>3 credit hours</td>
</tr>
<tr>
<td>or</td>
<td>22M-105</td>
<td>Calculus I</td>
</tr>
<tr>
<td>22M-102</td>
<td>Calculus II</td>
<td>4 credit hours</td>
</tr>
<tr>
<td>or</td>
<td>22M-106</td>
<td>Calculus II</td>
</tr>
<tr>
<td>22M-155</td>
<td>Engineering Calculus I</td>
<td>4 credit hours</td>
</tr>
<tr>
<td>or</td>
<td>22M-156</td>
<td>Engineering Calculus II</td>
</tr>
</tbody>
</table>

With the consent of the geography faculty, students may fulfill the computer programming and mathematics requirements by taking approved courses with equivalent subject matter.

All geography majors must complete one of the three core course sequences described below. Students are advised to pay close attention to the prerequisites of the intermediate and advanced courses in each sequence since development of study skills is an important component of the geography major.

Urban and Regional Studies

The undergraduate program in urban and regional studies is designed for students who are preparing for positions in government and the business sector, graduate education in geography, or professional careers such as urban and regional planning, business administration, applied policy analysis, or regional science.

Course work covers location theories and their application to applied problems, such as analyzing sites for development potential, finding the best locations for public and private facilities, developing plans for regions and communities, evaluating improved transport services in a city or region, and forecasting the populations of small areas.

Methods for solving these applied problems are based on a thorough understanding of the processes of urban and regional development, the role of individuals and institutions in effecting change, and the processes through which policy decisions are reached. Relevant skills are developed in quantitative analysis, development and management of geographical information systems, and computer methods.

Chair: Michael L. McIntyre

Professors: John R. Fosberg, Joel L. Hubert, James R. Fosberg, Michael L. McIntyre, Kellogg, David R. Hendrick, Ken Kister

Associate professors: Mel P. Arneson, Beth D. Joubert, Frances R. McIlwraith, Peter R. Wiekhe, Rebecca S. Ribbens, Jack Stewart

Graduate Research in Geography

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>22-215</td>
<td>Advanced Genetics</td>
<td>1 credit hour</td>
</tr>
</tbody>
</table>
Opportunities for experience in working with real problems are included.

Students concentrating on urban and regional studies are required to complete the following sequence of courses.

**INTRODUCTORY COURSES**
- 44:1 Introduction to Human Geography 4 s.h.
- 44:3 Introduction to Physical Geography 4 s.h.

At least one of the following:
- 44:11 Introduction to Social Geography 3 s.h.
- 44:13 Introduction to Political Geography 3 s.h.
- 44:30 Introduction to Economic Geography 3 s.h.

**INTERMEDIATE COURSES**
At least two of three:
- 44:120 Location Strategy of Firms 3 s.h.
- 44:122 Industrial Location 3 s.h.
- 44:123 Introductions to Economics of Transportation 3 s.h.
- 44:135 Urban Geography 3 s.h.

**METHODS COURSES**, All of these:
- 44:168 Statistical Methods of Geographical Analysis 3 s.h.
- 44:169 Computer Methods in Geographical Analysis 1 s.h.
- 44:150 Undergraduate Seminar for Geography Majors 3 s.h.

**ADVANCED COURSES**
Students are required to take at least one course from each group A and B.

**Group A**
- 44:134 Methods of Transportation, Analysis 3 s.h.
- 44:137 Economic Theory of Location 3 s.h.
- 44:139 Economic Analysis of Urban Structure 3 s.h.

**Group B**
- 44:166 Contemporary Europe: Interaction and Change 3 s.h.
- 44:171 Social, Economic and Political Development 3 s.h.
- 44:175 Locational Conflict 3 s.h.

**International Development Studies**

The undergraduate program in international development studies is designed for students interested in the process of economic, social, and political development, particularly in the inner cities of Third World countries. This concentration gives students a better understanding of regional and national development in international and cross-cultural perspective. Students who are interested in the problems of developing countries who wish to examine competing theories of development intended to explain international and regional disparities and who wish to understand the economic, social, and political factors that make these disparities possible.

Students concentrating in international development studies are required to complete the following sequence of courses.

**INTRODUCTORY COURSES**
- 44:1 Introduction to Human Geography 4 s.h.
- 44:3 Introduction to Physical Geography 4 s.h.

**INTERMEDIATE COURSES**
- 44:131 Urban Geography 3 s.h.
- 44:132 Earth Surface Processes 3 s.h.
- 44:138 Biogeography 3 s.h.
- 44:151 Natural Resources Policy 3 s.h.
- 44:122 Environmental Conservation in the United States 3 s.h.

**METHODS COURSES**
- 44:106 Special Methods of Geographical Analysis 3 s.h.
- 44:107 Computer Methods in Geographical Analysis 3 s.h.
- 44:150 Undergraduate Seminar for Geography Majors 3 s.h.

At least one of the following:
- 44:137 Map and Mapping 2 s.h.
- 44:153 Geographic Information Systems 3 s.h.

**ADVANCED COURSES**
- 44:133 Landscape Ecology 3 s.h.
- 44:125 Environmental Impact Analysis 4 s.h.
- 44:130 Wildlife in the Biosphere 3 s.h.
- 44:127 Water Quality Science, Technology, and Policy 3 s.h.
- 44:135 Hazard Analysis, Form and Process 3 s.h.
- 44:124 Water Resources Management 3 s.h.
- 44:150 Field Studies 3 s.h.

**RELATED COURSE WORK**
Undergraduate, lower division, students should select at least 12 semester hours of courses from one of the following clusters.

**Biophysical Systems**
- 2100 Earth's Physical Environment 4 s.h.
- 2111 Plant Ecology 4 s.h.
- 2116 Field Ecology 4 s.h.
- 2119 Plant-Animal Interactions 3 s.h.
- 1209 Introduction to Geology 2 s.h.
- 1210 Introduction to Marine Sciences 3 s.h.
- 1212 Geologic and Marine Geology 3 s.h.
- 1213 Geology of the Earth's Interior 3 s.h.

**Environmental Engineering**
- 3176 Principles of Hydrology 2 s.h.
- 3185 Environmental Hydrology 2 s.h.
- 3150 Principles of Environmental Engineering 3 s.h.
- 3152 Environmental Chemistry 3 s.h.
- 3153 Environmental Chemistry Laboratory 3 s.h.
- 3154 Environmental Microbiology 3 s.h.
- 3176 Environmental Microbiology 3 s.h.
- 3178 Hydrochemistry 3 s.h.

**Environmental Studies**

The undergraduate program in environmental studies is designed for students who have career aspirations or personal interests in resource management or environmental protection, or who are interested in physical geography. The program provides a knowledge of physical, chemical, and biological processes in landform development, atmospheric conditions, hydrology, soil development, and biological communities. It stresses the interactions among these processes and helps students acquire knowledge necessary to assess the impact of human activities on physical systems.

Training in field observation, quantitative analysis, computer methods, and cartographic representation are included in this concentration. The program also provides a sound foundation for graduate or professional level studies. This undergraduate program has been designed as an introduction to the graduate level physical geography and water resources subgroups of the Department of Geography.

Students concentrating in environmental studies are required to take 15 semester hours of intermediate and advanced courses.

**INTRODUCTORY COURSES**
- 44:1 Introduction to Human Geography 4 s.h.
- 44:3 Introduction to Physical Geography 4 s.h.
- 44:19 Contemporary Environmental Issues 3 s.h.
- 293:101 Climatology and Physics of the Environment (in a more advanced course in climatology or physical geography) 3 s.h.

**INTERMEDIATE COURSES**
- 44:101 Climatology 3 s.h.
- 44:102 Earth Surface Processes 3 s.h.
- 44:103 Biogeography 3 s.h.
- 44:121 Natural Resources Policy 3 s.h.
- 44:122 Environmental Conservation in the United States 3 s.h.

**METHODS COURSES**
- 44:106 Special Methods of Geographical Analysis 3 s.h.
- 44:107 Computer Methods in Geographical Analysis 3 s.h.
- 44:150 Undergraduate Seminar for Geography Majors 3 s.h.

At least one of these:
- 44:137 Map and Mapping 2 s.h.
- 44:153 Geographic Information Systems 3 s.h.
Environmental Management
63.105 Economics
63.106 Economic Development
63.133 Environmental and Natural Resource Economics
63.160 Administrative Management
63.161 Individual Behavior in Organizations
63.163 Organizational Design and Operations
92.091 Introduction to Planning and Policy Development
92.092 Introduction to Environmental Policy and Planning
53.204 Themes of Environmental Policy and Assessment

Environment and Development
44.012 International Development
44.141 Third World Development Support
44.151 Africa Development
44.152 Planning and Geography of Underdevelopment
44.150 Geographers of the Newly Industrializing Countries
44.172 Development Planning and Policy
44.144 Geographic Perspectives on Development
30.015 Introduction to the Third World
110.136 Economic and Political Development: Women's Roles
115.111 Environment and Culture
115.115 Sociology of the Third World
115.117 Women's Roles in Cross-Cultural Perspective

Honors
The honors major is for students of superior ability who want to pursue studies beyond the normal undergraduate level. To graduate with honors in geography, a student must be admitted to the University Honors Program and the honors program in geography by the fall semester of the senior year, and must maintain a grade-point average of 3.200 in all University work and a 3.400 in geography; and prepare and successfully defend an honors thesis.

The thesis consists of original research under the direction of a faculty member and is assessed by a three-member faculty committee.

Students complete the thesis through a 2-term honors tutorial in 44.140 Honors Tutorial and 44.149 Honors Thesis. The senior course, 44.150 Undergraduate Seminar for Geography Majors, may be substituted for 44.199 Honors Thesis, provided the student continues work on the thesis under the direction of a faculty member.

Minor
To major in geography, a student must complete at least 15 semester hours in geography courses with a minimum grade-point average of 2.00. Twelve of the 15 must be taken at The University of Iowa to 100 level courses. Minors are encouraged to select one of the department's three areas of concentration—urban or regional studies, international development studies, or environmental studies—and take courses from these lists in that concentration. Minors who wish further assistance in selecting courses may contact the department secretary to prepare an 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 secure cooperative training assignments related to their academic programs.

Courses for the Nonmajor
Students in the College of Liberal Arts as well as other areas of the University may find geography courses meaningful to their own program of study. The beginning-level courses, 44.11 Introduction to Human Geography, 44.15 Introduction to Urban Geography, 44.19 Contemporary Environmental Issues, and 44.30 Introduction to Economic Geography are approved for the General Education Requirement in social sciences; 44.137 Third World Development Support is approved for the General Education Requirement in natural sciences; and 44.172 Development Planning and Policy is approved for the General Education Requirement in natural sciences. These courses serve as part of a liberal education.

Other courses may also be attractive as individual electives. These include 44.15 Introduction to Political Geography, 44.24 World Cities, 44.26 Water in the Biosphere, 44.28 Economic Basis of Form and Process, and 44.33 Introduction to Economics of Transportation.

Graduate Programs
The department's graduate programs prepare students to carry on creative and productive research in selected areas of geography involving the use and further elaboration of theory. They also prepare students for positions in research, teaching, or an area of applied geography. Success in achieving these goals has been demonstrated by the strong demand for University of Iowa graduates to fill positions on college and university faculties, in private research organizations, and in business and government.

The department offers specialized instruction in the teaching of geography at the college level for those pursuing academic careers. Opportunities are provided for all graduate students to gain practical teaching experience through service as departmental teaching assistants or graduate instructors.

Master of Arts

An MA degree in geography is appropriate for any teaching program, but students are expected to have an undergraduate background relevant to pursuing graduate work. A strong analytical background in any of the social or environmental sciences and a minor in exploring the regional and spatial perspectives characterizing modern geography are more important than the particular disciplinary integration of the student's baccalaureate degree. Competency in statistical analysis and the reliability of their prior training, however, may require them to take courses that are prerequisites for courses in their elected subprograms. Credit awarded for such courses cannot be applied toward the 26 semester hours required for the MA.

Each of the MA subprograms is designed to be completed in four semesters. This means that the student typically will accumulate 40 to 48 semester hours of graduate credit in completing the MA. Students are advised to take those additional hours to elect graduate courses in other subprograms in geography and/or in other University requirements and programs, thereby tailoring their programs of study to their individual interests.

The department offers six MA subprograms: historical and cultural, physical geography, political geography, regional development, transportation systems analysis, and water resources. These specialties are designed for students seeking positions in community planning, public policy, development planning, development planning in the Third World, water resources management, and public policy. For those interested to pursue the Ph.D., each subprogram covers some of the more traditional fields of geography and builds on the research specialties of the faculty. For example, subprograms in urban and regional geography are included in three subprograms—laboratory instruction in regional and urban development, general instruction in regional and urban development, and general instruction in regional and urban development. The more traditional fields of geography and the more recent advances in the field of geography are included in the preliminary analysis and transportation systems analysis programs. The subprograms in physical geography emphasize interacting processes and theoretical and field studies with computer modeling. The water resources subprogram builds on foundations in environmental science and physical geography. Although MA students pursue a program of study within one of the subprograms, they must gain a basic proficiency in another. The MA emphasizes the acquisition of analytical skills and their application in research methods that provide necessary training in oral and written communication, computer programming and graphics, statistics, mathematics, and technical writing. The MA program is offered on an integral or nonintegral basis. In the MA program, students in the transportation subprogram must take additional electives that enable them to receive a transportation certificate in addition to their MA.

General Requirements
The MA requires a minimum of 30 semester hours of graduate work, of which 15 semester

...
hours must be in courses numbered 200 or above. In addition to fulfilling the course requirements in one of the department's six subgroups, students must complete at least one course out of its own subprogram from the following introductory geoscience courses: 41:121, 41:123, 41:125, 41:128, 41:134, 41:137, 41:125, 41:129. Enroll in the department's general colloquium series (41:350 Research Seminar: Staff) during each semester in residence; satisfy the department's B.S. requirements or equivalent qualifications in mathematics, statistics, and computer programming; or complete, with a grade of B or better, at least one five-semester-hour quantitative methods course from a list of courses approved by the faculty.

The M.A. must be earned in a specified field, except in the physical geographic and water resources subgroups, which require a thesis. A maximum of 6 semester hours of credit may be earned by thesis work.

Students who earn the M.A. without thesis must pass a written examination and, in most subprograms, an oral examination. For students electing the M.A. without thesis, the written examination can be waived and the thesis defense serves as the oral examination.

**Subprogram Requirements**

**LOCATIONAL ANALYSES**
- 41:134 Methods of Transportation Analysis 3 s.h.
- 41:107 Economic Theory of Location 3 s.h.
- 41:203 Microeconomics I 3 s.h.

Three of these:
- 41:246 Statistical Analysis in Geography 3 s.h.
- 41:236 Urban Demand Modeling 3 s.h.
- 41:237 Urban Economics and Urban Spatial Structure 3 s.h.
- 41:255 Methods of Regional Analysis: Regional Science 3 s.h.
- 41:244 Urban Geography 3 s.h.

**PHYSICAL GEOGRAPHY**
An M.A. thesis is required of all students in this subprogram.

- 41:113 Geographic Information Systems 3 s.h.
- 41:153 Landscape Ecology 3 s.h.
- 41:128 Drainage Basin: Form and Process 3 s.h.
- 41:238 Research Seminar: Physical Geography 3 s.h.
- 41:450 Thesis 3 s.h.

Two of these:
- 41:225 Water Resources Systems Analysis 3 s.h.
- 41:256 Advanced Biogeography/ Landscape Ecology 3 s.h.
- 41:258 Advanced Earth Surface Processes 3 s.h.

Two from one of the following groups:
- 12:128 Cartographic Palaeontology and Palaeography 3 s.h.
- 12:123 Cartographic Environment 3 s.h.
- 2:119 Human-Animal Interactions 3 s.h.
- 12:132 Sedimentology 3 s.h.
- 12:127 Glacial and Pleistocene Geology 3 s.h.
- 53:170 How in Open Channels 3 s.h.
- 53:172 Mechanics of Sediment Transport 3 s.h.
- 53:157 Environmental Chemistry 3 s.h.
- 53:154 Environmental Microbiology 3 s.h.
- 53:215 Limnology 3 s.h.
- 53:251 Environmental Systems Modeling 3 s.h.

or

Equivalent group of courses

**POLITICAL GEOGRAPHY**
- 44:210 Philosophy and Epistemology in Geography 3 s.h.
- 44:273 Social Theory and Human Geography 3 s.h.
- 44:315 Research Seminar: Political Geography 3 s.h.

Three of these:
- 44:175 Locational Conflict 3 s.h.
- 44:251 Nature Society Theory 3 s.h.
- 44:232 Advanced Industrial Geography 3 s.h.
- 44:26c Political Economy of Regional Development 3 s.h.
- 44:270 Jurisdictional Organizations/Public Service Functions 3 s.h.

**REGIONAL DEVELOPMENT**
- 44:294 Geographic Perspectives on Development 3 s.h.
- 44:210 Philosophy and Epistemology in Geography 3 s.h.
- 44:26d Political Economy of Regional Development 3 s.h.
- 44:240 Agricultural Change and Rural Development in the Third World 3 s.h.
- 44:394 Research Seminar: Regional Development 3 s.h.

**TRANSPORTATION SYSTEMS ANALYSIS**
*225:120 Probabilities and Statistics 4 s.h.
- 41:164 Introduction to Environmental and Water Resources Management 3 s.h.
- 41:203 Microeconomics 3 s.h.
- 41:134 Methods of Transportation Analysis 3 s.h.
- 41:236 Travel Demand Modeling 3 s.h.
- 44:205 Transportation Regulation and Management 3 s.h.
- 102:250 Transportation Policy and Planning 3 s.h.

**Additional Requirements**
- 102:261 Problems in Transportation and Land Use 3 s.h.
- 44:131 Cartography 3 s.h.
- 44:205 Transportation Planning and Management 3 s.h.

**WATER RESOURCES**
- 41:297 Research Seminar: Water Resources Systems Analysis 3 s.h.
- 41:440 Thesis (required of all students in the subprogram) 4 s.h.

The following courses, with at least 9 semester hours earned at the 200-level:

**One course:**
- 44:126 Water in the Biosphere 3 s.h.
- 44:128 Drainage Basin: Form and Process 3 s.h.

Three of these:
- 44:111 Natural Resource Policy 3 s.h.
- 44:125 Environmental Impact Analysis 3 s.h.
- 44:205 Water Resources Planning 3 s.h.
- 44:225 Water Resources Systems Analysis 3 s.h.
- 44:211 Nature Society Theory 3 s.h.

An additional sequence of three courses in social theory and regional development, systems analysis, or biophysical processes, chosen under the direction of a faculty advisor is required. This may include courses in other departments and will fill out of subprogram requirements.

**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 in specialized expertise in a specific subfield. The former usually represents the major 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 fundamentally a research degree and as such is constrained by the expertise of the faculty. At the Ph.D. level, the department is best known for its rigorous professional orientation, particularly in the areas of sociological analysis, spatial behavior, transportation, third world regional development, and political geography, physical geography, and water resources management and policy.

The Ph.D. is a 40-credit hour full-time sequence program for the first two years of which are essential to the department's M.A. program. Students entering the program immediately from a B.S. or B.A. must fulfill all departmental requirements for the M.A. except for the M.A. examination. It also includes a sub-program whose ultimate objective is the Ph.D. required to complete at least 3 additional semester hours in graduate-level geography courses from those required or recommended for one of the department's subprograms that is not the student's general area of interest.

At least one additional quantitative methods course (3 semester hours) that is at a level above that required for the B.S. and is
44.197 Outdoor Safety/Legal Issues in Sports 3 h.
44.198 Natural Hazards 3 h.
44.199 Earth Science 3 h.
45.191 Hazards to the Environment 3 h.
45.200 Fundamentals of Management 3 h.
46.202 Principles of Geology 3 h.
46.203 Introduction to Geology 3 h.
46.204 Environmental Geology 3 h.
46.205 Coastal Geology 3 h.
46.206 Environmental Science 3 h.
46.207 Environmental Policy 3 h.
46.208 Environmental Law 3 h.
46.209 Environmental Economics 3 h.
46.210 Environmental Education 3 h.
46.211 Environmental Assessment 3 h.
46.212 Environmental Impact 3 h.
46.213 Environmental Justice 3 h.
46.214 Environmental Policy 3 h.
46.215 Environmental Law 3 h.
46.216 Environmental Economics 3 h.
46.217 Environmental Education 3 h.
46.218 Environmental Assessment 3 h.
46.219 Environmental Impact 3 h.
46.220 Environmental Justice 3 h.
46.221 Environmental Science 3 h.
46.222 Environmental Policy 3 h.
46.223 Environmental Law 3 h.
46.224 Environmental Economics 3 h.
46.225 Environmental Education 3 h.
46.226 Environmental Assessment 3 h.
46.227 Environmental Impact 3 h.
46.228 Environmental Justice 3 h.
46.229 Environmental Science 3 h.
46.230 Environmental Policy 3 h.
46.231 Environmental Law 3 h.
46.232 Environmental Economics 3 h.
46.233 Environmental Education 3 h.
46.234 Environmental Assessment 3 h.
46.235 Environmental Impact 3 h.
46.236 Environmental Justice 3 h.
Undergraduate Programs

The undergraduate program puts greater stress on the basic aspects of geography than on the engineering or agricultural phases of the discipline. Geographers 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 geography.

Students majoring in geology must meet the general requirements of the College of Liberal Arts. It is recommended that they satisfy the foreign language requirement with French, German, or Russian, and the social sciences requirement with approved courses in economics, geography, and/or anthropology. The department offers the Bachelor of Science and the Bachelor of Arts. The B.S. program features two tracks—general education and environmental. Options in the environmental track are informal; they are recommended paths of study for students seeking employment in the environmental sciences. Although they are designed for B.S. students, they may be followed by B.A. students as well.

Bachelor of Science

The Bachelor of Science professional program in geology is designed primarily as preparation for graduate study and for employment in industry. The following courses are required:

- 12:4 Evolution and the History of Life 4.s.h.
- 12:5 Introduction to Geology 4.s.h.
- 12:9 Palaeontology 4.s.h.
- 12:12 Physical Geology 4.s.h.
- 12:13 Structural Geology 5.s.h.
- 12:93 Geologic Field Methods 2.s.h.
- 12:15 Summer Field Course 2.s.h.
- 12:12 Principles of Paleontology 3.s.h.
- At least two elective geology courses 6.s.h.

Total: At least 38 s.h.

Students may substitute 12:10 Advanced Historical Geology; Iowa for 12:4 Evolution and the History of Life, and 12:23 Earth History and Resources for 12:5 Introduction to Geology.

The geology major requires at least 10 semester hours of college mathematics, including 225M-26 Calculus II or 225M-36 Engineering Calculus II. Computer science or statistics courses may be counted toward the 10-semester-hour requirement. Additional mathematics courses are strongly recommended.

Eight semester hours each of physics and chemistry, and a laboratory course in a biological science also are required.

Bachelor of Arts

The Bachelor of Arts program, divided into general education and environmental geology tracks, is designed to provide a varied background in geology and a broader choice of electives than is available in the B.S. program. The B.A. is designed for students interested in the fundamentals of geology or in interdisciplinary environmental programs.

General Education Track

The general track provides a background in geology and allied topics necessary for careers in conservation, urban planning, or professional consulting. With appropriate course work in education, the B.A. program also provides a base for high school or college college teaching in earth science. See the College of Education section of this Catalog. The following courses are required:

- 12:4 Evolution and the History of Life 4 s.h.
- 12:5 Introduction to Geology 4 s.h.
- 12:9 Palaeontology 4 s.h.
- 12:12 Principles of Paleontology 3 s.h.
- 12:15-12:16 Field Trip (two sessions) 4 s.h.
- Geology electives 12 s.h.

Total: 35 s.h.

*Students may substitute 12:10 Advanced Historical Geology; Iowa for 12:4 Evolution and the History of Life, and 12:23 Earth History and Resources for 12:5 Introduction to Geology.
- 12:12 Physical Geology 4 s.h.
- 12:13 Structural Geology 5 s.h.
- 12:93 Geologic Field Methods 2 s.h.
- 12:15 Summer Field Course 2 s.h.
- 12:12 Principles of Paleontology 3 s.h.
- At least two elective geology courses 6 s.h.

Total: At least 38 s.h.

Students planning to take graduate work in geology should complete general geology and supporting courses equivalent to those required for an undergraduate major in geology at the University of Iowa. Subject substitutions may be made with the approval of the Program Director. A minor in Geology is also available.

Joint Programs

Joint programs can be arranged, usually with chemistry, physics, biological sciences, environmental engineering, and anthropology.

Original Research

A senior or a senior who is ready to pursue original research projects may initiate a faculty member or graduate student with a current research program. A master's thesis or a small-scale project (including a combination field, laboratory, and library investigation) is encouraged. Independent study is encouraged.

Undergraduate classes have produced term reports that subsequently were published.

Graduate Programs

Students planning to take graduate work in geology should complete general geology and supporting courses equivalent to those required for an undergraduate major in geology at the University of Iowa. Subject substitutions may be made with the approval of the Program Director. A minor in Geology is also available.

Graduate students who begin their programs in August 1992 or later must deliver a 15-minute presentation about his or her thesis topic. The format of the presentation is decided individually by each student in consultation with his or her committee. Suggestions of presentations include oral or poster presentations at local, regional, national, or international meetings, presentation as part of a conference seminar, and informal brown-bag-lunch presentations. Students who begin their study...
graduate study in German must take the humanities track.

The applied track gives students practical skills and proficiency in German for business and governance. 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 the College of Business Administration section of the Catalog.

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.

Each track usually requires 30 semester hours of course work beyond the basic program.

(Students who first enrolled at The University of Iowa before June 1984 are held to a 24-semester-hour requirement.)

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**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:11</td>
<td>Elementary German I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>13:12</td>
<td>Elementary German II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>13:21</td>
<td>Intermediate German I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>13:22</td>
<td>Intermediate German II</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

The basic program also may be satisfied by various combinations of 13:13, 13:14, 13:23, 13:26, and 13:27. See the German department undergraduate advisor for details.

**HUMANITIES TRACK**

Third Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:101</td>
<td>Introduction to Modern German Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:102</td>
<td>Shakespeare and Modern German Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:103</td>
<td>Composition and Conversation I</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Fourth Year

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:105</td>
<td>Cultural Topics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:111</td>
<td>Survey of Modern German Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:112</td>
<td>Survey of German Literature</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:116</td>
<td>Advanced Composition and Conversation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:104</td>
<td>Advanced Special Topics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

An elective from the courses offered within the department, or a course related to Germanic studies offered by another department (approval of major adviser required) | 3 s.h. |

**APPLIED GERMAN TRACK**

Third and Fourth Years

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:103</td>
<td>Composition and Conversation I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:104</td>
<td>Composition and Conversation II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:105</td>
<td>Principles and Techniques of Translation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:106</td>
<td>The German Media</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:114</td>
<td>Business German</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**GRADUATE PROGRAMS**

**Master of Arts with Thesis**

Graduate students who show potential for productive scholarship and who plan to pursue doctoral study in German should elect the major's options with the thesis program. The thesis program requires a minimum of 36 semester hours, including at least 21 hours of course work 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 applied linguistics, or German literature.

**Elementary and Secondary Teaching Certification in German**

German majors who want certification to teach in elementary and/or secondary schools must successfully complete the requirements for a major in German and must be admitted to the College of Education's foreign language teacher education program.

**Elementary**

Contact the College of Education, Division of Curriculum and Instruction for further information.

**Secondary**

Students who plan to use a German minor to teach at the elementary and/or secondary level must contact the College of Education concerning requirements.

**Honors**

Honors in German is open to exceptional students who are in the University Honors Program and have completed three years of college-level German, or the equivalent, with a grade-point average of at least 3.50 in upper-division German courses.

Participating students register for the following courses:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>13:190</td>
<td>Honors Project in German</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>13:191</td>
<td>Honors Research and Thesis</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Honors students are expected to engage in meetings and discussions in German literature and culture and to write essays in German and English. Students meet with their faculty director of studies on a regular basis.

The program concludes with presentation of an honors thesis to a faculty committee of at least three members.

**Minor**

A minor in German requires 15 semester hours of course work in college-level German with a minimum grade-point average of 2.00. Twelve of these semester hours must be in advanced courses (13:100 and above) at The University of Iowa. At least one course must be numbered 100 and above, and count toward the minor except 13:118, 13:123, 13:154, 13:173, 13:162, and 13:183.

**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 applied linguistics, or German literature.

Credit received toward the M.A. usually is applied to the Ph.D. Students may earn up to 12 additional semester hours of credit 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 advisor.
### Programs

**Honors Interdisciplinary Major**

The global studies honors major is a broadly conceived program that provides a solid and flexible, yet definite, structure to be. It is designed to prepare students for a career in the global arena. Depending on their interests, students can provide a solid, informed base for more specialized or advanced work in a variety of academic disciplines, or for law school or a law. It also provides a suitable background for work in international business and with international and government agencies.

Global Studies is a constituent program of the Center for International and Comparative Studies (CICS).

### Honors Core Curriculum

**Group A: Global Studies**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>47:100</td>
<td>Global Interdependence and International Security</td>
<td>3.0</td>
</tr>
<tr>
<td>47:150</td>
<td>Global Studies Seminar</td>
<td>3.0</td>
</tr>
</tbody>
</table>

**Group B: Disciplinary Studies of the Global Environment**

Four of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>05:125</td>
<td>International Economics</td>
<td>3.0</td>
</tr>
<tr>
<td>15A:142</td>
<td>United States in World Affairs 1900-1973</td>
<td>3.0</td>
</tr>
<tr>
<td>20:163</td>
<td>American Foreign Policy</td>
<td>3.0</td>
</tr>
</tbody>
</table>

**Group C: Introduction to Topical Concentrations**

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>16:143</td>
<td>War and Society</td>
<td>3.0</td>
</tr>
<tr>
<td>20:166</td>
<td>Politics of War and Peace</td>
<td>3.0</td>
</tr>
<tr>
<td>44:1</td>
<td>Contemporary Environmental History</td>
<td>3.0</td>
</tr>
<tr>
<td>44:2</td>
<td>International Development</td>
<td>3.0</td>
</tr>
<tr>
<td>44:5</td>
<td>Introduction to the Politics of the Third World</td>
<td>3.0</td>
</tr>
<tr>
<td>113:151</td>
<td>Sociology of the Third World</td>
<td>3.0</td>
</tr>
</tbody>
</table>
World Area

Students take 12 semester hours of courses that focus on a major world area other than their home area. Areas for which there are sufficient course offerings at The University of Iowa are listed below. Students who wish to study a particular area for which courses are not available in sufficient number may take the courses at another institution and transfer them, with the approval of the program chair.

Africa
Asia: China, Japan, India
Latin America
Middle East
Russia and Eastern Europe
Western Europe, Germany, Great Britain
Western Europe as a whole

For listing of courses in these areas, contact the Global Studies Program office.

Foreign Language

Each student is required to demonstrate an ability to use a foreign language that is widely used in the world area studied. The details of this requirement are worked out on an individual basis. In no case is the requirement less than four semesters of college-level study, and it commonly requires more work. Because of the additional time required for Chinese, Japanese, or Russian students who elect these languages may count some semester hours of language study (for Chinese and Japanese and 3 for Russian) as partial fulfillment of the world area requirement.

Topical Concentration

Each student develops a topical concentration (12 semester hours) focused on one of the following:

War, peace, and security
Development, health, and human resources

For a current list of courses that may be used to complete the topical concentration, contact the Global Studies Program office.

Senior Honors Project

Each student completes an honors project, usually during the senior year. Students register for 3 semester hours of research on the project.

Certificate Program

The Certificate Program in Global Studies is designed to promote an international and global orientation for students in a variety of majors. Students in such diverse fields as engineering, business, anthropology, journalism, history, economics, and political science have completed the requirements of the certificate program. Requirements total 27 semester hours.

Students complete all requirements for their major program as well as the requirements of this certificate program. Courses counted for the major may be counted toward the certificate. Those who complete the requirements are awarded a certificate in global studies when they receive their bachelor’s degree, and completion of the program is noted on their transcript.

Requirements

Students in the certificate program must take courses in the basic area, in each of four emphasis areas, and in a foreign language.

Basic Area

Both of these:
411: Global Interdependence and Human Security 3 s.h.
41:050 Global Studies Seminar 3 s.h.

One of these:
541:255 International Economics 3 s.h.
164:152 United States in World Affairs 1900-1973 3 s.h.
30:600 Introduction to International Relations 3 s.h.
30:621 American Foreign Policies 3 s.h.
30:170 The Politics of International Economics 3 s.h.
44:15 Introduction to Political Geography 3 s.h.
47:195 Introduction to Public International Law 3 s.h.

Emphasis Areas

Each student takes one course in three of the following areas, and three courses in a fourth.
The first three to be taken in each area is listed here. For a complete list of courses that can be counted in each area, contact the Global Studies Program office.

War, Peace, and Security

This component deals with the use of armed force for pursuit of political ends on a continuing range from avowedly global nuclear war to individual acts of terrorism. The approaches covered involve cause, effect, intention, and resolution of violence in the contemporary world.
14:513 War and Society 3 s.h.
30:106 Politics of War and Peace 3 s.h.

Development, Health, and Human Resources

This component deals with the problems of developing societies within the framework of a competitive global economy.
20:429 Introduction to the Politics of the Third World 3 s.h.
44:04 International Development 3 s.h.
113:151 Sociology of the Third World 3 s.h.

Environment and Natural Resources

This component is concerned with the use, availability, and disposal of global resources. Of special concern are environmental problems that arise from the transformation of those resources by humans using modern technology.
44:19 Contemporary Environmental Issues 3 s.h.

Cross-Cultural Understanding

Global issues mean that people be educated to understand that perceptions, values, and beliefs vary among societies; that these differing values complicate the process of people communicating about and arriving at possible solutions; and that without careful examination, it is too easy to accept as absolutes the perceptions, values, and beliefs of any one society or culture.

The goals of this component are to highlight cross-cultural differences as a major contemporary global issue; to address some of the sources, dilemmas, and policy implications of these value differences; to foster the cross-cultural sensitivity necessary for dealing with global issues; and to encourage students to clarify their own values as they bear on the analysis of global problems.

Students who choose to take three courses in this area may select courses that bear on the history, culture, and politics of a single world region. Students who take five or more courses should take 113:3 Introduction to the Study of Culture and Society for 3 s.h.

Foreign Language

All certificate program students are required to complete four semesters (or equivalent) of a foreign language and are encouraged to go beyond the minimal requirement.

Minor

The requirements for the global studies minor are the same as those for the certificate, except that certain courses may be taken to count toward the student's major that do not count toward the minor.

Financial Aid

Students are encouraged to apply for a Stanley Undergraduate Scholarship for International Relations. The scholarship is administered by the International Relations Student Organization and the Center for International and Comparative Studies. The scholarships are awarded to outstanding University of Iowa undergraduates who, in close consultation with a faculty member, propose a well-conceived research or fieldwork project on an international topic.

Courses

411: Global Interdependence and Human Security 3 s.h.
41:050 Global Studies Seminar 3 s.h.
44:04 International Development 3 s.h.
113:151 Sociology of the Third World 3 s.h.
44:19 Contemporary Environmental Issues 3 s.h.
47:195 Introduction to Public International Law 3 s.h.
The general major is for students with a general interest in history. The program requirements are as follows:

Students must earn a minimum of 24 semester hours in courses offered by the Department of History numbered 16:51 or higher, of which at least 12 semester hours must be in non-U.S. history courses. The 24 semester hour in history courses must include 3 semester hours in 16:51 Colleges for History Majors, preferably taken after the student has finished a number of other history courses. In addition to the 24 semester hours in history courses, students must complete a minimum of 15 semester hours of course work in related areas, such as anthropology, economics, fine arts, including studio courses, geography, literature including written work, philosophy, political science, psychology, religion, and sociology. Courses taken to satisfy General Education Requirements will not be counted toward the related area requirement. Students also may fulfill this requirement by electing a second major or a minor in one of the related areas.

Of the 24 semester hours of history required for the major, 12 (including the 3 semester hours of civilization) must be taken in residence at The University of Iowa. Credit earned through the College-Level Examination Program (CLEP) may not be counted toward the major.

Courses 14.10/110: Issues in Human History, 14.10 Western Civilization Since 1792, and 14.5-6 Civilizations of Asia may not be included in the 24 semester hours of history required for the general major in history.

**Teacher Certification**

Students majoring in history who wish to qualify for a teaching certificate must complete an area of concentration in history and meet the following requirements.

**AMERICAN HISTORY CONCENTRATION**

Courses in U.S. history (including 16:51) in the College of Liberal Arts and Sciences.

Courses in related areas: 24 s.h.

Students must select 15 semester hours of course work in each of two related areas chosen from economics, geography, world history (non-U.S.), political science, and sociology.

Students also must fulfill a special requirement in early European history by taking a 100 level course covering a period to 1700. This course also may be counted toward the related area requirement in world history if that is one of the two areas chosen.

Courses in economics, geography, political science, or sociology that have been taken to satisfy the General Education Requirement in social sciences may be applied to the required hours in related areas, but no more than one such course may be applied to any one related area.

**Minor**

A minor may be earned by any student who completes at least 15 semester hours in history with a minimum grade point average of 2.00. Twelve of the 15 semester hours must be in advanced courses taken at The University of Iowa. For the minor, all courses numbered above 16:71 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, and government or other public service. With additional specialized training, students of history become qualified for careers in archival work, library work, museum work, or historical site preparation and display. Some students enter the joint program leading to a Ph.D. degree in both law and history (see "Joint Law and Graduate Degree Program" in the College of Law section of the Catalog).

Qualified graduate students are invited to apply for fellowships and teaching assistantships. These should be directed to the departmental office.

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 examination. A candidate must earn at least 24 semester hours of credit in the history department, including at least two seminars or one seminar and one reading 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 six semester hours must be in a second division, including either a seminar or a reading course.

The easy is the major division must be based on original research and should be approximately 12,000 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 10-200 Individual Study, Graduate The finished product should consist of the argument of a project, the project is of a thesis in the second division, that dissertation takes the form of a full-length scholarly essay.

The second M.A. program is designed for students who do not intend to pursue the Ph.D. degree. The basic curriculum and research requirements are much the same as those for the Ph.D. major M.A. They are: 30 semester hours overall; 24, 14, and 6 major division, including a selection of one or two seminars or seminar course. The two plans differ mainly in respect to concentration in fields; the Ph.D. emphasis on the development of research capabilities culminating in the essay, the major plan places emphasis on judging and selecting. Students in the major plan must take at least 6 semester hours in each of the other two divisions of history, or 6 semester hours in one other division in history, or 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 final two semesters of residence, a student must 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 exam 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 must submit a specimen of their writing, such as a seminar paper or an M.A. thesis. They must then 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 major's degree. The 72 semester hours must include at least 32 semester hours (eight quarter) in 200-level history courses, apart from thesis credit. At least 20 of these 32 hours must be completed before the student takes the comprehensive examination, and at least 20 of these 32 hours must be completed at The University of Iowa. Research seminars taken at the M.A. level may be counted toward this 20-hour requirement. The candidate must earn 3 semester hours of credit in the philosophy of history, historiography, or methods of historical research.

The department has no common 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 examinations until these requirements have been met.

The comprehensive written and oral examinations cover these distinct fields, two of which must be in a major division that is chosen from the following divisions: The ancient world Medieval Europe, including Great Britain 1500-1815 Europe, including Great Britain 1815-present Russia and the Soviet Union United States history Latin American history Chinese history Japanese history History of India Economic history Military history History of science and medicine

The major field must be either a division outside the candidate's major division or in a related department outside the history department. The candidate's major committee may define and extend the individual's field of examination. It may also require, separately for each field, 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 will focus 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, reject, or require it to be revised. When the dissertation is completed in final form, the committee administers the final examination for the doctorate, a formal defense of the dissertation, usually lasting two hours.

Admission

Applicants for admission to the graduate programs 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, and letters of recommendation from three personal familiar with the student's past academic work. To be considered for admission with financial aid for the fall semester, applicants must submit all of these materials by January 15. For admission without aid for the summer session or fall semester, the deadline is April 10; for the spring semester, November 10. Applicants who wish to be considered for a University of Iowa Fellowship should submit complete application materials by January 15.

Guide to Graduate Study

Further information on graduate study is available in the Graduate College's Guide to Graduate Study, available from the history department. 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 of interest to prospective students.

Special Facilities

The University's libraries are strong in all aspects of U.S. history. The Main Library houses the Henry A. Wallace papers and related collections of U.S. and European materials. The European history, special strengths are in the Otto Walter's materials. The Iowa State Historical Department in Iowa City and the Herbert Hoover Presidential Library in West Branch. The libraries possess additional valuable research materials.

Courses

Courses numbered 16:1 through 16:30 are ordinarily taken to satisfy the General Education Requirement in the liberal arts or sciences. They cannot be taken pass/fail, even when they are taken for general electives. History majors must have junior or senior standing in order to enroll in 16:51. Other courses numbered below 200 are open to freshmen who have already satisfied the General Education Requirement in historical perspectives. Most courses numbered below 200 are offered alternate semesters. Courses numbered 200 and above usually are offered as occasion demands.
departments and integrate varied approaches to a particular topic. In a few examples of interdisciplinary programs are aging studies, contemporary issues in corporate ethics, technical writing, family studies, urban studies, and medical sociology. Programs of this nature are covered by existing departmental majors and are not appropriate for the ISP major. In all cases, careful and detailed planning is essential.

Plan of Study

Students are required to submit a plan of study before obtaining an interdisciplinary studies major. Students should consult promptly with the interdisciplinary studies advisor to discuss an appropriate individualized program for their academic goals. The advisor can explain the plan of study review process. The earlier a plan of study is submitted, 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 prior to or during the junior year.

GUIDELINES

Each plan of study submitted for approval must provide the following information:

- A description of academic goals for the bachelor's degree, with a clear statement of the reasons for preferring the ISP to any departmental program;
- A list of advanced-level coursework already completed or planned for the quarter prior to the planned program of study; and
- A detailed explanation of the planned program of study, including a description of personal interests, and the central focus of the plan of study.

Each plan of study is approved by a committee that may include the coordinator, the faculty advisory committee, and the ISP advisor. Reviews are held several times each semester.

If the committee does not grant approval, the plan of study may be returned to the student for revisions and resubmission. In some cases, the student may be referred to a more 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 interdisciplinary focus in the approved plan of study and only if they are approved in advance by the ISP advisor. Unsanctioned substitutions may be designated as elective coursework.

Significant changes in the focus of a student's plan require reexamination and approval of a revised plan of study. The student's academic advisor determines whether changes warrant a revised plan.

Forms and guidelines for preparing the plan of study are available from the interdisciplinary studies advisor in the Liberal Arts Office of Academic Progress. A list of review committee meeting times is available each semester.

Interdepartmental Studies Requirements

Students must earn a total of at least 124 semester hours of credit with a B.A. in interdisciplinary studies. They must complete a minimum of 30 semester hours after enrolling the program, 15 of which must be at advanced-level course work. Hours taken during the semester in which the plan of study is approved are not counted as part of the final 30 semester hour.

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 Requirements

Students must complete the College of Liberal Arts General Education Requirements, including four semesters of college-level foreign language or the equivalent. (See the College of Liberal Arts introductory section for specific information.)

Advanced Course Work

Students must complete at least 36 semester hours of advanced course work at the University of Iowa. 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 the total toward the 124 semester hour needed for graduation.

Courses taken to satisfy the General Education Requirements 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 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 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 advisor 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 either UI course work.

Restrictions

No more than 40 semester hours of credit in any one academic department may count toward the 124 semester hour required for graduation. This includes both upper- and lowerevel course work, and both UI and transfer course work.

Students completing a B.A. in Interdisciplinary Studies may earn no more than 30 semester hours of credit toward the 124 required for graduation from courses taken in other colleges of the University (e.g., business administration, 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/fail, withdrawal/RF, and academic standards apply to ISP students.

Related Considerations

All courses numbered with the prefix 7 (College of Education) are considered to be in one department.

All courses numbered with the prefix 6 (College of Business Administration) except 65 (economics) is also considered a department in the College of Liberal Arts and is considered to be in one department.

Advanced Courses Numbered below 100

The following courses are accepted as part of the 36 semester hours of advanced course work required under the ISP rules. Students must earn a grade of 2.00 or better in these courses and in those numbered 100 and above.

Advanced courses numbered below 100 that were taken before spring semester 1988 are not considered advanced-level course work. Some of the courses have prerequisites or require special permission signatures.

AMERICAN STUDIES

45 American in American Cultural Studies 3 s.h.

ART AND ART HISTORY

19-49 Advanced Painting 2, 3 s.h.
19-42 Undergraduate Drawing and Design 3 s.h.
19-17 Undergraduate Sculpture Workshop 3 s.h.

ASIAN LANGUAGES AND LITERATURE

35-23 Second-Year Sanskrit 3 s.h.
35-24 Second-Year Sanskrit 3 s.h.
35-30 Hindi 3 s.h.

BILOGICAL SCIENCES

2-5 Iowa Books (accepted as advanced course work only if 2-5) Plant Taxonomy also is completed 3 s.h.

CLASSICS

14-11 Second-Year Greek I 3 s.h.
14-12 Second-Year Greek II 3 s.h.
20-81 Age of Creon 3 s.h.
20-82 Age of Augustus 3 s.h.
COMMUNICATION STUDIES
All courses numbered 350-699.

COMPARATIVE LITERATURE
48-40 Major Trends in World Literature 3 h.
48-41 Major Trends of World Literature 3 h.
48-50 Non-Western Literary Traditions 3 h.
48-95 Undergraduate Seminar 3 h.

COMPUTER SCIENCE
22C-52 Algorithms and Data Structures 3 h.
22C-53 Programming I 3 h.
22C-54 Languages and Computation 3 h.
22C-55 Introduction to Systems Software 3 h.
22C-56 Operating System Concepts 3 h.
22C-57 Operating Systems 3 h.

DENTAL HYGIENE
60.2 Human Histology 4 h.

DENTISTRY

ENGLISH
All courses numbered above 61.10, except 86 courses, RP-30, RP-50, and RP-40.

PHYSICAL EDUCATION AND SPORTS STUDIES

PHYSICAL EDUCATION AND SPORTS STUDIES

PHYSICS AND ASTRONOMY
29-19 Introductory Physics III 4 h.

STATISTICS AND ACTUARIAL SCIENCE
23-33 Probability and Statistics for the Engineering and Physical Sciences 3 h.

THEATRE ARTS
49-21 Basic Acting II 3 h.
49-23 Elements of Design 3 h.
49-30 Play Sci 6 Analysis 3 h.
49-62 Basic Playwriting 3 h.
49-72 Shakespeare 3 h.
49-94 Oral Interpretation of Literature 3 h.

HONORS

IUP students qualify for membership in the University Honors Program by achieving a cumulative grade-point average of at least 3.20. Graduating with Honors, the same criteria may be applied in the selective Honors Program or from the IUP coordinator.

IUP students should initiate inquiries about graduating with honors by contacting their counselor. Students are encouraged to inquire early in their junior year to allow time for transition course work. The associate 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 IUP allows outside traditional departmental structures, a special honor in which an honors project must be filed with the IUP coordinator, the associate director of the honors program, and the student's IUP advisor.

Double Major

Students in Interdepartmental Studies 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.

Minor

The Interdepartmental Studies Program does not offer a minor, Interdepartmental studies. IUP students may earn a minimum of 18 semester hours in another major. Courses may not be used to meet the requirements of both the Interdepartmental Studies and the minor.

Career Considerations

Since the B.A. in Interdepartmental studies offers opportunities outside the traditional degree pattern, students must create programs of study that suit their individual educational and career objectives. Those who plan to work employers immediately following graduation should familiarize themselves with the educational background and qualifications required by employers and should include courses that correspond to these needs.

Students preparing for advanced study should become familiar with the admission requirements of graduate or professional schools. The earlier students decide on pursuing graduate or professional study, the easier it is for them to complete any necessary prerequisites.

IUP students who design a cohesive program and maintain a cumulative grade-point average may be considered equally with students who earn other undergraduate degrees for employment or admission to some graduate and professional schools.

Courses

IAW 145.00 Cooperative Education Internship 4 h.

IOWA LAKESIDES LABORATORY

Area director: Robert W. Chetcuti
Professor Emeritus: Robert K. Chetcuti, The University of Iowa.
Professor Emeritus: Donald A. Schoute, Iowa State University.
Professor Emeritus: Donald R. Schoute, Iowa State University.
Professor Emeritus: Robert E. Schoute, Iowa State University.
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either an additional advanced reporting and writing course or a media workshop.

BACHELOR OF ARTS

A student seeking a B.A. in journalism and mass communication must complete the journalism major requirements (90 semester hours), and must fulfill the school’s second area of concentration requirement in one of two ways:

• obtain a full B.A. major in another department;
or
• complete a 24-semester-hour concentration of related courses in one or more departments that offer B.A. degree.

BACHELOR OF SCIENCE

A student seeking a B.S. in journalism and mass communication must complete the journalism major requirements (50 semester hours), and must fulfill the school’s second area of concentration requirement in one of two ways:

• complete a B.S. major in a natural, mathematical, or social science;
or
• complete the following two requirements:
  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
  All the special math, research methods, statistics, computer science, and/or computer science requirements necessary for the B.S. degree in the department in which the majority of second-area work is done.

HONORS

Majors with outstanding academic records who already participate in the University Honors Program may earn a Bachelor of Arts in journalism and mass communication. The program gives students the opportunity to complete individual work under the guidance of a faculty mentor.

A major with an overall grade point average of 3.20 or higher should contact the honors advisor in the School of Journalism and Mass Communication to receive possible honors 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 should 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. The student must develop the form and topic of the thesis or project in a written proposal, which must be accepted by a faculty member. Once the proposal is accepted, the student enrolls in 19-154 Honors Project under the faculty member’s section number. Students become official honors candidates in the school once they enroll in this course.

The honors candidate must meet a formal presentation of the project to a committee consisting of the faculty advisor, as chair, and two other faculty members selected by the student in consultation with the advisor. At least two committee members must accept the completed project before the student can receive an honors degree in journalism and mass communication.

The school’s maximum limit of 34 semester hours of journalism courses may be waived for students who complete honors degrees in journalism, subject to the recommendation of the honors advisor.

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 2.00; 15 of the 15 semester hours must be taken in advanced courses at The University of Iowa. Advanced courses are those numbered 19100 or higher, or those numbered below 19100 which are considered to be advanced. A list of advanced courses numbered below 19100 is published with the degree requirements for the undergraduate Studies Program in this section of the Catalog. One of the following courses is strongly recommended:

19-05 Social Scientific Foundations of Communication

19-01 Cultural and Historical Foundations of Communication

The minor is not intended to be sufficient professional preparation for a career in journalism or mass communication. It should not be regarded as an introduction to the field. Courses for the minor may not be taken pass/merit.

TRANSFER STUDENTS

All 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 60 semester hours including those earned from The University of Iowa and other institutions, their minor requirements, 19-00 Social Sciences Foundations of Communication, and 19-01 Cultural and Historical Foundations of Communication. However, the major course requirements may be waived on the basis of work taken at other institutions; thus, a transfer student will be a premajor 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, 30 percent of the total number of semester hours the student must earn toward a major in journalism and mass communication at Iowa. Some journalism course work taken elsewhere might 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 advisor 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 communication mass media. Applicants should indicate the emphasis for their initial application.

Each emphasis requires 30 semester hours of approved course work and successful completion of a master's thesis or project. The specific requirements of each emphasis are listed below.

Professional Program in Journalism
This program is for individuals who wish to improve their technical and analytical skills and to broaden their understanding of the role and function of mass communication in contemporary society, but do not plan to engage in Ph.D. work.

It serves the student who has a background in a field other than journalism and has not completed an undergraduate degree in another field or has worked in a career unrelated to journalism (see Group 1 Requirements). It also serves the student who has worked in some area of mass communication (see Group 2 Requirements).

The program is not designed or intended for individuals who have just completed undergraduate programs in journalism and have no subsequent work experience in mass communication.

GROUP 1 REQUIREMENTS
19115 Insurance Reporting and Writing (does not count toward degree) 4 s.h.
19220 Master's Seminar 3 s.h.
Two advanced course in writing and reading courses (19-270-19-273) 6 s.h.
A third 400-level reporting and writing course 3 s.h.
One media workshop (19-240-19-249) Electives 15 s.h.
19220 Master's Research (project) 3 s.h.

Electives require consent of the advisor and may be selected from either School of Journalism and Mass Communication courses or courses offered by other departments.

GROUP 2 REQUIREMENTS
19220 Master's Seminar 3 s.h.
19240 Master's Research (thesis) 3 s.h.
Journalism and mass communication electives 9 s.h.
Other Electives 15 s.h.

Electives require consent of the advisor. The 15 semester hours of "other electives" may be selected from either School of Journalism and Mass Communication courses or courses offered by other departments.

Every student in the professional program must complete a practical project (19-294) under the supervision of a committee of three members of the graduate faculty.

There is considerable flexibility within the professional (journalism) program. The model programs are intended as a general information for new and prospective students. The actual program of study for every student is planned in close cooperation with the advisor.

Communication and Mass Communication Emphasis
This emphasis offers a specialization in the study of communication phenomena with special emphasis on theory and methodology. Qualified individuals may petition the graduate admissions committee of the School of Journalism and Mass Communication for admission to the Ph.D. program after successful completion of their M.A. work. The following courses are required.

19-220 Master's Seminar (two semesters) 2 s.h.
19-221 Approaches to the Study of Communication: Issues and Concepts 3 s.h.

One of the following methods courses:

19-350 Communication Research: Hypothesis Approach 3 s.h.
19-351 Communication Research: Behavioral Approaches 3 s.h.
19-352 Communication Research: Phenomenological Approaches 3 s.h.
19-353 Communication Research: Legal Approaches 3 s.h.

Electives in journalism and mass communication and in other departments 15 s.h.

19-399 Master's Research (thesis) 3 s.h.

Every student in the communication and mass communication emphasis must complete an M.A. thesis (19-249) under the supervision of a committee of three members of the graduate faculty.

All students are expected to take course work necessary to complete an M.A. thesis under the supervision of a committee of three members of the graduate faculty.

All students are expected to take course work necessary to complete an M.A. thesis under the supervision of a committee of three members of the graduate faculty.

All students are expected to take course work necessary to complete an M.A. thesis under the supervision of a committee of three members of the graduate faculty.

Doctor of Philosophy
The Ph.D. program emphasizes interdisciplinary inquiry into mass communication phenomena within cultural and historical perspectives. Approaches include philosophical, evaluative, and critical inquiry. The program's substantive nature is defined by the scholarly interests of its faculty, who focus primarily on the investigation of historical, legal, economic, cultural, social, and historical aspects of communication, both verbal and visual.

The Ph.D. program is highly individualized, depending 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 its cultural context. A more complete description of the graduate program is available from the School of Journalism and Mass Communication. Students should ask for the Graduate Student Handbook.

Facilities
The School of Journalism and Mass Communication is housed in the three-story Communications Center. The school has special laboratories for photography, typography, audio and video, electronic newswriting, and desktop publishing. Students also have access to the Newsroom and other facilities in the university's award-winning student newspaper, The Daily Iowan, which is housed in the Communications Center. Special facilities in the building include the Leslie G. Moeller Seminar Room, the Myrtle Spatial Presentation room, and the Iow M. Powell Seminary Room.

The school has its own radio station, the KIOW and KUOW, Community Radio, and pays for equipment for offices of the Iowa High School Press Association and the Student Council. A display case is available for student and faculty photography and other projects.

Iowa Center for Communication Study
The center encourages and facilitates student and faculty research in the field of communication. Among its publications are The Journalism Review and the newsletter of graduate students, etc. The Iowa Guide: Scholarly Journal to Mass Communication and Related Fields.

Financial Aid
More than $40,000 in scholarships is available to undergraduate and graduate journalism majors. Scholarships 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 encourages students to participate in lectures and opportunities outside the classroom. Interdisciplinary seminars in journalism and public relations positions are available to students. These experiences are selected and monitored to contribute to students' professional growth. The School of Journalism and Mass Communication does not award academic credits for internships, but students may earn credits by applying independent study in conjunction with internships. In addition to seminars, student-operated media stations, The Daily Iowan, The Iowa Magazine, and The Newseum yearbook provide opportunities for journalism experience.
Latin American Studies Program • Liberal Arts

Latin American Studies Program

Chair: Nora Cortizal
Professors: Thomas Charnley (Anthropology), New England (Anthropology), North Frankfurt (Spanish and Portuguese), Chile Lima (Spanish and Portuguese), Costa Rica (Spanish and Portuguese), Honduras (Spanish and Portuguese)
Associate professors: Patricia Salas (Anthropology), Women's Studies, Foreign Caracas (College of Law), Maryland. Julio (Anthropology), Mexico. R. Quar Bovare (Spanish and Portuguese), Nora Cortizal (Spanish and Portuguese), Phyllis Ellis (Spanish and Portuguese), Adina Milinda (Spanish and Portuguese), Douglas Wilkins (Anthropology), Mexico Servia (Spanish and Portuguese), Diana Yolanda (Spanish and Portuguese), Three Whiting (Spanish and Portuguese):
Assistant professor: Lourdes Guillén (Anthropology), Kecky Higgins (History), Kathleen Newman (Spanish and Portuguese), M. Marida Nortcole (Spanish and Portuguese)

Undergraduate degree: certificate, minor in Latin American Studies

Latin American studies is an interdisciplinary undergraduate program that focuses on the history, politics, social organization, economy, geography, art, and literature of Latin America. It prepares students for graduate study or for Latin America-related careers in business, communications, government, bilingual/ multicultural education, secondary teaching, community organizing, and international work.

Students enrolled in the program may earn the certificates in Latin American studies, or they may declare a minor in Latin American studies. All students plan their programs in close cooperation with Latin American studies advisers.

The Latin American Studies Program (LASP) is a constituent program of the Center for International Cooperation Studies.

Programs

Certificate

Students pursuing the certificate in Latin American Studies must earn at least 27 semester hours of credit in courses selected from the list of approved LASP courses below. This includes those courses which also fulfill the requirements for a major.

Minor

To earn a minor in Latin American Studies, students complete 15 semester hours in courses selected from the list of approved LASP courses, with a 2.00 minimum grade-point average. 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. Students with double majors may not count more than 3 semester hours from their major department.

Cultural Experience

It is highly recommended, but not required, that students have an in-depth Latin American cultural experience, usually through study or volunteer work abroad, before they complete their undergraduate requirements. Students should consult the Latin American studies advisers regarding available options. Courses taken in study-abroad programs may be applied toward requirements for the certificate or minor, subject to prior approval by the appropriate LASP advisers and the Latin American studies advisers.

Approved LASP Courses

In addition to the courses listed below, courses concerned in part with Latin America sometimes may be used as electives to satisfy the requirements for the certificate or minor. Students should consult the Latin American studies advisers for more detailed descriptions, and the appropriate departmental sections of the Catalog.

ANTHROPOLOGY
113-119 Literature and Anthropology
113-115 Ethnography of South America
113-116 Ethnography of Mesoamerica
113-118 Social Anthropology of the Caribbean
113-119 Latin American Economy and Society

113-114 Special Topics in Anthropology
113-115 Archaeology of Mesoamerica
113-116 The Aztec, Their Predecessors, and Their Contemporaries
well-conceived research or fieldwork project on an international topic.

Courses

130:20 Contemporary Latin American News and Culture 2 h.
130:21 Latin American Studies Seminar 3 h.

LEISURE STUDIES

Chair: Michael L. Tongue
Assistant professors: Carolee Avison, Kenneth E. Marks
Visiting Lecturer: Carlos L. Jesus
Undergraduate degree: B.S. in Leisure Studies
Graduate degree: M.A. in Leisure Studies

In 1949 The University of Iowa became the first institution of higher education in the U.S. to offer courses in leisure studies, and in 1960 the first to offer a program in leisure studies. The mission of the Department of Leisure Studies has three major components: liberal education through leisure studies, professional preparation for the leisure service professions, and the research of leisure as a behavioral and cultural phenomenon.

By studying the value and function of leisure in a modern society that is so once blased and bored with more free time, the department serves the cause of the liberal arts ideal, a fuller and more humane life.

The Department of Leisure Studies emphasizes the education of all liberal arts students. Specifically, it offers two courses designed to satisfy 3 semester hours of the College of Liberal Arts General Education Requirements in the humanities (104-20) and in the social sciences (104-50). Both are intended for all students.

In the past 40 years, the number of people employed in recreation and parks has increased dramatically. There are opportunities for professional placement throughout the United States and Canada in a wide range of public parks and recreation settings: voluntary and social agencies; recreation programs; therapeutic recreation programs; school, military service, commercial, and industrial recreation programs; and teaching and research.

Undergraduate Program

Applicants to the undergraduate program in leisure studies must have a minimum cumulative grade point average of 2.00 based on at least 15 semester hours of completed course work. They must also present a one-page statement of their interest in leisure studies, significant work or volunteer experience, exceptional personal qualities, and other pertinent information. Letters of reference are optional. Applications are available from the departmental office. Deadline for Fall semester admission is March 1, for spring semester, October 1.

Requirements

Students must take 37 semester hours of core courses, including the following:

104:40 Leisure in Contemporary Society 3 h.
104:61 Recreation Leadership and Programming 4 h.
104:101 Leisure Research 3 h.
104:105 Introduction to Therapeutic Recreation 3 h.
10:106 Administration of Recreation 3 h.
110:107 Elective course in leisure studies (prefix 104) 3 h.
110:107 Internship in Recreation 1 h.
104:109 Internship in Recreation 3 h.
104:267 Internship in Recreation 2 h.
104:275 Internship in Recreation 2 h.
104:277 Internship in Recreation 2 h.
104:278 Internship in Recreation 2 h.
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Minor

Students wanting to minor in leisure studies may do so by completing a minimum of 15 semester hours in the leisure studies curriculum with a grade-point average of 2.00. Twelve of the 15 semester hours must be taken in advanced (300-level) courses at The University of Iowa. The course selection is determined by the student interest and is not recommended by the undergraduate coordinator.

No course credits toward the minor may be taken on a pass/no pass basis.

Graduate Program

The master's program is designed to prepare students for administrative, supervisory, and teaching positions in recreation systems and in universities. It offers two areas of specialization: public, private, and commercial recreation, and therapeutic recreation administration. It may be taken with thesis (33 semester hour) or without (30 semester hour). An introduction to scholarly activities and research is provided through 440 (191) Leisure Research and preparation of a thesis. Graduates are eligible for professional certification examinations in recreation administration and therapeutic recreation.

Undergraduate preparation in leisure studies is not essential to successful completion of the master's program. However, prospective students from diverse backgrounds are encouraged to apply.

Public, Private, and Commercial Recreation

This area focuses on the development and administration of recreational programs in areas such as government, business, industrial, educational, religious, patronized, and park agencies, institutes, and private organizations. Administration and management are central to this area of study. To support this emphasis, the program draws from other disciplines, such as public administration, urban and regional planning, psychology, sociology, geography, and physical education.

Therapeutic Recreation: Administration

Therapeutic recreation requires the administration/supervision of individuals in rehabilitation programs. This program focuses on the development and administration of programs serving mentally disabled, physically disabled, emotionally disturbed, and aged persons in both institutional and community settings. The program is directed toward understanding therapeutic recreation's role in the rehabilitation process, including both clinical and community settings; it prepares students to work with a broad range of disability areas in either setting. Students may develop specific disability areas through the use of related area courses.

Financial Aid

Assistance for graduate students is available in the form of research fellowships and teaching assistantships. Students are encouraged to apply for assistance through the department.

Facilities

Students majoring in leisure studies have the opportunity to gain extensive experience, paid or voluntary, through independent research in these and other locations: The University of Iowa Research Parks, The University of Iowa Division of Recreational Services, Iowa City Parks and Recreation Department, Systems Unlimited, various university and community recreation sites, for the Granite City Parks and Recreation Department, and the Iowa Medical Rehabilitation Center.

Courses

Primary for Undergraduates

104:00 Cooperative Education Internship 3 s.h.

104:25 Leisure and the Liberal Arts 3 s.h.

104:64 Social Scientific Perspectives on Leisure and Play 3 s.h.

104:65 Scientific Research in Leisure and Play 3 s.h.

104:70 Public Health (2) 1 s.h.

104:80 Recreation Leadership and Programming 3 s.h.

104:81 Recreation Leadership and Programming 3 s.h.

104:112 Introduction to Health Science 3 s.h.

104:113 Introduction to Psychology 3 s.h.

104:120 Psychomotor Development in Children 3 s.h.

104:121 Orientation to Special Populations 3 s.h.

104:122 Work and Leisure in American Culture 3 s.h.

104:123 Recreation Program Development and Evaluation 3 s.h.

104:124 Recreation Program Development and Evaluation 3 s.h.

104:125 Yoga and Therapeutic Recreation 3 s.h.

104:245 Recreation Program Development and Evaluation 3 s.h.

104:246 Recreation Program Development and Evaluation 3 s.h.

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International Writing Program, Windrow Press

See "Iowa Center for the Arts" in the Special Sections at Iowa sections of the Catalog.

Translation Workshop

See "Master of Fine Arts in Translation" under "Comparative Literature" in this section of the Catalog.

Courses

106.130 Painting

106.132 Advanced Painting

108.130 Printmaking

108.131 Printmaking I

108.132 Printmaking II

108.134 Sculpture

108.151 Ceramics: Production Workshop

110.151 Ceramics I

110.152 Ceramics II

110.161 Drawing

110.162 Drawing

110.165 Letterpress Publishing

110.161 Intermediate Bookbinding

110.152 Advanced Bookbinding

110.153 Books in Bookbinding

110.154 Book and Page Design

110.157 The Hand-Printed Book: Problems in Design and Production

130.189 Medieval Manuscript and Illumination

130.200 Visual Communication

130.300 History of the Book

130.310 Individual Instruction in Printmaking/Photovet

130.234 Computer Design and Production

130.234

LIBRARY SERVICES

Coordinator: Elizabeth M. Degree offers: B.L.S., M.L.S.

The Bachelor of Liberal Studies (B.L.S.) program is offered by each of the three state boards of Regents universities (The University of Iowa, Iowa State University, and the University of Northern Iowa) to serve adult residents. It is designed to provide a general education that is transferable to the College of Liberal Arts at The University of Iowa, where prerequisite courses (at least 10 credits) are to be completed as part of an approved program offered by the Regents universities. At least 20 credits must be transferable for admission to the B.L.S. program from the specific Regents university that will grant the degree.

The B.L.S. candidate must meet the General Education Requirements of the Regents university from which the candidate expects to receive the degree. At the time of application for the degree, the candidate must have completed all general education requirements except physical education (see the College of Liberal Arts & Leisure Studies or the catalog of the specific Regents university for details).
The School of Library and Information Science offers a program of professional and academic preparation for careers in all types of libraries and information centers—public, school, academic, and special. It seeks to recruit and prepare librarians and information professionals to contribute to the advancement of librarianship through research, and to provide professional leadership in the field.

Program Goals and Objectives

The goals of the School of Library and Information Science are to offer a graduate program of professional preparation in library and information science that reflects the variety and growth of information needs led by society and individuals; to engage in research that increases understanding of the nature of information needs and of its role that can be taken to provide for those needs; to provide public service through consulting education and consulting and through association and other professional service, so that growth is fostered beyond student professional and so to people have the service they need.

Instructional Objectives

Upon completion of the program, students are able to:

- demonstrate an understanding of the history and theory of library and information science sufficient to recognize the role in today's society and the library's importance in the information process;
- articulate a philosophy of librarianship that includes an understanding of intellectual freedom and the role of libraries in society;
- demonstrate a professional attitude toward the librarian's role in libraries in meeting users and information need and show a commitment to improve the quality of library and information services in response to the needs of all segments of society;
- demonstrate an understanding of information services, the flow of information through society, and the role of libraries and information centers in the process;
- demonstrate an appreciation for the contribution that information, literacy, and learning can make to the quality of life, and its ability to convey that appreciation to others;
- demonstrate knowledge of the techniques and procedures of effective information service (i.e., the selection, acquisition, organization, storage, retrieval, and dissemination of information);
- identify and use bibliographic techniques and sources of information in a broad range of useful fields of knowledge;
- articulate an understanding of management theory and practice sufficient to plan library and information services and perform the professional responsibilities of identifying needs, setting goals, analyzing problems, implementing programs, and evaluating results.
- demonstrate an understanding of information technology and of software systems relevant to the functions of libraries and information centers;
- aid and evaluate research that built in the advancement of the profession;
- articulate an understanding of the management of library and information science and the contributions of librarians to the advancement.

Research Objectives

Further research on education and information problems that advances both theoretical and practical knowledge. This includes research that directly supports the instructional programs of the School of Library and Information Science.

Public Service Objectives

The school offers library and information personal and library consulting opportunities for continuing education that advances and updates their awareness of current developments in library operations and information services. It provides consulting services to individuals, libraries, and organizations in order to provide better library and information services for the citizens of Iowa and surrounding areas. Faculty and students in the school participate in the local, state, regional, and national levels.

Undergraduate Study

Although there is an undergraduate major in library science, bachelor and masters will enroll in the degree, all courses are designed for B.S. students.

Further information about the B.S. program is available from the Center for Credit Programs.

Courses

ZS04 Cooperative Education Internship

LIBRARY AND INFORMATION SCIENCE

Department: College of Education

Professor emeritus: Virna Joyce Gobin

Associate professors: Sharon L. Gilbert, Robert J. Herco, Carol Jones, James Innis, Patricia Longman

Assistant professor: Susan Morrison

Assistant professor: Paul Vlack

Lecturers: Brit Herms

Affiliated faculty: Key informant (Barnes and Noble Communication)

Graduate degree: M.A. in Library and Information Science

- demonstrate an understanding of information technology and of software systems relevant to the functions of libraries and information centers;
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- demonstrate an understanding of information technology and of software systems relevant to the functions of libraries and information centers;
- aid and evaluate research that built in the advancement of the profession;
- articulate an understanding of the management of library and information science and the contributions of librarians to the advancement.

Research Objectives

Further research on education and information problems that advances both theoretical and practical knowledge. This includes research that directly supports the instructional programs of the School of Library and Information Science.

Public Service Objectives

The school offers library and information personal and library consulting opportunities for continuing education that advances and updates their awareness of current developments in library operations and information services. It provides consulting services to individuals, libraries, and organizations in order to provide better library and information services for the citizens of Iowa and surrounding areas. Faculty and students in the school participate in the local, state, regional, and national levels.

Undergraduate Study

Although there is an undergraduate major in library science, bachelor and masters will enroll in the degree, all courses are designed for B.S. students.

Further information about the B.S. program is available from the Center for Credit Programs.

Courses

ZS04 Cooperative Education Internship

LIBRARY AND INFORMATION SCIENCE

Department: College of Education

Professor emeritus: Virna Joyce Gobin

Associate professors: Sharon L. Gilbert, Robert J. Herco, Carol Jones, James Innis, Patricia Longman

Assistant professor: Susan Morrison

Assistant professor: Paul Vlack

Lecturers: Brit Herms

Affiliated faculty: Key informant (Barnes and Noble Communication)

Graduate degree: M.A. in Library and Information Science

- demonstrate an understanding of information technology and of software systems relevant to the functions of libraries and information centers;
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consultant, subject specialist, notebook coordinator, cataloger, children's librarian, school library media specialist, or coordinator.

The Master of Arts degree in library and information science requires 36 semester hours of graduate credit with a minimum grade-point average of 2.00, and completion of a comprehensive examination.

Basic Plan of Study

The program consists of a core required courses basic to all areas of librarianship, and electives. The student's plan of study should be developed carefully in concert with career objectives. All courses to be taken in the 36-semester-hour program must be approved by the advisor.

Required Core Courses

Required of all M.A. candidates: 18 s.h.

21:151 Reference 3 s.h.
21:152 Description and Organization of Materials I 3 s.h.
21:153 Foundations and Collection Development 3 s.h.
21:201 Management of Libraries and Information Centers 3 s.h.
21:246 Introduction to Information Science 3 s.h.
21:249 Research Methods 3 s.h.
21:249: Electives 15-16 s.h.

For suggested electives, see "Public Librarianship," "Academic Librarianship," "Special Librarianship," "Information Science," and "School Library Media Centers." In this section of the Catalog.

Elective courses in other University departments must be shown as an integral part of the student's preparation for library and information science. To be applied toward the degree, electives outside the department must be taken after formal admission to the School of Library and Information Science, and must not exceed 9 semester hours. Only courses taken for graduate credit may be counted toward the 36-semester-hour requirement.

Thesis Option

The purpose of the thesis option is to extend research opportunities and to provide one means of independent study to a student with extensive preparation in library and information science. It is not intended to replace basic preparation courses.

Transfer Credit

Up to 6 semester hours of graduate credit may be accepted in transfer from another institution, provided that the work was taken in residence in a library and information science program accredited by the American Library Association. Approval is given on a case-by-case basis and is determined by evaluating the course's content, currency, and applicability to the master's degree.

Completion Time

The degree program can be completed in one calendar year (two semesters and a summer), but most students take an extra semester or two to fulfill the requirements. In particular, students who have full-time teaching responsibilities, such as faculty duties or half-time in graduate employment, may find it difficult to carry the maximum course load. The maximum load for graduate students is 15 semester hours during regular semesters and 12 semester hours during intersummer sessions.

Public Librarianship

Public libraries provide informational, educational, and recreational materials and a wide range of services for a diverse clientele. Public librarians usually receive the largest part of their funding from local taxes, but they often are organized on a regional or statewide Cooperative basis. The variety of roles, services, missions, 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 these needs, implementing the plans in an effective fashion, and evaluating the success of their efforts.

PLANNING OF STUDY

Required core courses 18 s.h.
Suggested electives 18 s.h.

21:120 Literature and Storytelling for Children 3 s.h.
21:231 The Public Library 3 s.h.
21:234 Library Materials for Children 3 s.h.
21:245 Library Materials for Adults 3 s.h.
21:247 Information Storage and Retrieval 3 s.h.
21:260 Information Literacy 3 s.h.
21:255 Information Storage and Retrieval 3 s.h.
21:351 Advanced Reference 3 s.h.
21:262 Precision in Libraries 2-3 s.h.

Academic Librarianship

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 are often required.

PLANNING OF STUDY

Required core courses 18 s.h.
Suggested electives 18 s.h.

21:232 The College and University Library 3 s.h.
21:247 Information Storage and Retrieval 3 s.h.
21:248 Library Automation 3 s.h.
21:251 Advanced Reference 3 s.h.
21:252 Description and Organization of Materials II 3 s.h.

21-253 Technical and Serial Services 3 s.h.
21:255 Government Publications 3 s.h.
21:256 Information Storage and Retrieval 3 s.h.
70171 The Community College: Technical for lower-division work in community colleges 2-3 s.h.

Special Librarianship

Special librarianship embraces libraries and information centers serving both profit and non-profit organizations — for example, businesses and industries, law firms, museums, historical societies. The ability to design services suitable to the parent organization, the provision of much of which still requires creativity in selecting, absorbing, online searching, systems analysis, and organizing; and the background of substantial subject expertise are commonly required in special librarianship work. Information brokers and entrepreneurs are also special librarians.

PLANNING OF STUDY

Required core courses 18 s.h.
Suggested electives 18 s.h.

21:230 Special Libraries 3 s.h.
21:140 Bibliography 3 s.h.
21:247 Information Storage and Retrieval 3 s.h.
21:255 Government Publications 3 s.h.
21:256 Information Storage and Retrieval 3 s.h.
21:252 Description and Organization of Materials I 3 s.h.
21:234 Library Automation 3 s.h.
21:262 Precision in Libraries 2-3 s.h.

Information Science

Information science, a rapidly growing multidisciplinary professional area, has a concern for understanding information sources, the rapid development of electronic technologies, and the need to store, retrieve, and disseminate information through the use of these technologies. Its focus is on developing skills in organizing and using information, determining and assessing information, and a need for a particular clientele, and the retrieval and delivery of information.

In addition to libraries and information centers, many organizations in the for-profit sector are finding that information is a valuable commodity in today's competitive world; they are employing information management personnel. An information science specialization can lead to multidisciplinary careers.

PLANNING OF STUDY

Required core courses 18 s.h.
Electives 18 s.h.

Two or three of these:
21:247 Information Storage and Retrieval 3 s.h.
21:248 Library Automation 3 s.h.
21:262 Precision in Libraries 2-3 s.h.
21:273 Information Analysis and Design 3 s.h.
Two or three non-interned courses in other segments 0 s.h.

The balance selected from these:

21:230 Special Libraries 3 s.h.
21:240 Bibliography 3 s.h.
21:251 Advanced Reference 3 s.h.
21:255 Technical and Serial Services Management 3 s.h.
21:264 Medical Librarianship and Bibliography 3 s.h.
21:265 Law Librarianship, Bibliography, and Research Techniques 3 s.h.
21:266 Periodicals in Libraries 3 s.h.
21:293 Independent Study 1-3 s.h.

School Library Media Centers

The school library media center makes available to teachers and students a wide range of library and instructional materials in a variety of formats. The work of the media specialist includes activities such as providing instruction to students in the use of media, consulting with teachers about the use of media in the instructional program, producing new materials, offering reading guidance, and providing reference service.

To qualify as school media specialists in Iowa, graduates must hold a valid teaching license and an appropriate media endorsement. The plan of study in the following section describes a program that is designed to prepare students for endorsement as Iowa school media specialists K-12.

STATE ENHANCEMENT FOR SCHOOL MEDIA SPECIALISTS

Students who complete the program below fulfill state requirements for endorsement as school media specialists K-12. To be admitted to the media endorsement program, a student must hold or be eligible for a teaching license. This program requires completion of 38.39 semester hours. Students completing the media endorsement program fulfill the requirements for the M.A. in Library Information Science as well. The plan of study is as follows:

21:151 Reference 3 s.h.
21:152 Description and Organization of Materials I 3 s.h.
21:153 Foundations and Collection Development 3 s.h.
21:205 Managed Libraries and Information Centers 3 s.h.
21:223 School Library Media Center Administration 3 s.h.
21:246 Library Materials for Children 3 s.h.
21:243 Library Materials for Adolescents 3 s.h.
21:254 School Library Media Center Practice 3 s.h.
21:720 Instructional Design and Technology 3 s.h.
72:135 Survey of Computer Applications to Instruction 3 s.h.
21:246 Research Methods 3 s.h.
72:222 Instructional Strategies 3 s.h.
72:263 Consultation Theory and Practice 3 s.h.
21:260 Multimedia and Interactive Technologies 3 s.h.
72:105 Design and Production of Multimedia 3 s.h.

Students who complete 29 of the above semester hours in a designated sequence are eligible for single certification. Graduates with a single elemental school media specialist certification (K-6) or secondary school media specialist certification (7-12) do not require a master's degree.

Iowa Community College Certification

The school offers a state-approved program for librarian/learning resource specialist in an area vocational school or community college. Students receive this endorsement upon completion of the M.A. with the program listed under "Academic Liasonship" in the section of the Catalog and 72:171 The Community College.

Joint Degree Programs

Joint degree programs between the School of Library and Information Science and other University units have as their primary goal the integration of the two areas of study, allowing the student to contribute to one discipline the insights and experience gained in the other. The school has established formal programs with the Colleges of Law and Business Administration. A student working in a joint program works with an advisor in the School of Library and Information Science to ensure the benefits of integration.

Objectives of a joint program must be consistent with the goals stated above, and since they vary from student to student, they are a matter of advising. An advisor, a specialist who enjoys a career in a law or business library requires a different sequence of courses from one attempting to study the legal basis of librarianship or the management of the library as a corporate organization. Yet another student may choose to seek the benefits a joint program could offer in records management and management information systems.

To enroll in a joint program, students must apply to and be accepted by the School of Library and Information Science and the other unit chosen. Up to 6 semester hours of each program may be applied toward the M.A. in Library and Information Science and up to 9 semester hours toward the M.A. or 12 semester hours toward the B.B.A. or 18 semester hours toward the B.S. in addition to the same joint formal programs, arrangements can be made for joint programs between departments on an ad hoc basis.

In no case may a student receive two degrees with fewer than 30 semester hours of graduate work, and joint programs usually require substantially more than this.

Facilities and Resources

The School of Library and Information Science is housed conveniently near the main wing of the University's Main Library, providing facilities for the visual instruction and research activities of the school.

Computer Facilities

A multipurpose technology laboratory provides student access to microcomputers. Equipment is available for CD-ROM software, online searching, use of bibliographic utilities, and use of local software.

In various courses, students learn to write programs, work with and create database management systems, conduct database searches, work with word processing and spreadsheet systems, and perform statistical analyses.

Cataloging Lab

The school maintains a reference collection of cataloging tools used in descriptions and organization courses. The collection is also available to students who need the materials for research or for joint course work.

Statewide Reference Service

The school serves as one unit of a state network of libraries. In cooperation with the Iowa State Library of Iowa, students provide backup service reference to libraries throughout the state. This helps to perform bibliographic verification and to answer reference questions. The service helps students sharpen and gain classroom instruction and provides reference experience.

University Libraries

All of the resources of the University Libraries are available to students enrolled in the program. The system contains more than three million volumes in the Main Library and 11 departmental libraries.

The online catalog and information system, OASIS, contains records for more than 60 percent of the collection as well as numerous containing periodical indexes and the accords of the Center for Research Libraries in Chicago. Also available are information resources in compact disc format and accessible to more than 200 million online readers.

The third floor of the Main Library houses the government publications, maps, and special collections needed as well as bound periodicals. The location of the School of Library and Information Science on this floor allows quick access to these frequently used materials.
Other Libraries
Students have access to a variety of libraries through field trips, practical experience, and personal use. The State Historical Society Library in Iowa City, the Iowa City and Coralville Public and school libraries; the Coon, Cordell, and Cordell College libraries; and the library at Hoover Presbyterian 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 connect to a totally computerized catalog. It services physical and contemporary management practices with an innovative public library model.

Other Resources
Lindquist Center, located across the street from the Main Library, houses the Learning Resources Center of the College of Education and Weing Computing Center. This 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 books and notebook instructional materials for children in preschool through grade 12. It is especially valuable for students interested in school or public library work.

Weing 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, data preparation, and coursework. Each graduate student will be assigned an email account and a small fund allocated by the Graduate College.

Faculty Advising
Each graduate student is assigned an advisor upon admission. Students are encouraged to discuss career alternatives with their advisor and other faculty members as well. The relatively small number of faculty members in the department allows students to get to know students individually and to take that time to strengthen personal relationships.

All courses are to be applied to the 30-semester-hour program must be approved by the advisor.

Student Activities
Students have a variety of activities available to aid in their academic and professional development. Conferences, short courses, workshops, seminars, field trips, and teleconference calls provide frequent exposure to contemporary developments in library and information science, as well as an opportunity to meet with practicing librarians from across the state and nation.

The Library and Information Science Student Organization (LISMO) is composed of all students accepted into the M.A. program. The Iowa Student Organization (ISL) serves as a liaison between students and faculty administration in matters of concern, and as a planning group for student activities and other activities. ISL sends a representative to faculty meetings. There is also an active student chapter of the Special Libraries Association.

Placement
The school provides active placement assistance to its graduates through job announcements, seminars on resume writing and interviewing, and personal counseling. The University’s Educational Placement Office issues a regular listing of job openings and provides a centralized service for Iowa graduates and positions in all types of libraries. The placement service for the past three years placed 41 percent of public librarians 34 percent, school librarians 15 percent, and special librarians 11 percent. Iowa graduates currently work in libraries in 40 states and 9 foreign countries. Strong personal and academic qualifications, job flexibility, and geographic mobility are important factors in obtaining a job.

Admission
Academic requirements for admission to the M.A. program include:

- A baccalaureate degree from an accredited college or university, with a minimum overall grade-point average of 2.50 on a 4.00 scale, and at least 65 semester hours of study in the liberal arts and sciences;
- A combined verbal/quantitative score of 1050 or a combined verbal/quantitative score of 1090 on the Graduate Record Examination (GRE) General Test.

Personal qualifications and professional potential are assessed by means of letters of recommendation and an on-campus interview with the student, through her or his personal interviews with the faculty. Telephone interviews are arranged when distance makes it impossible for an applicant to come to Iowa City. The school does not accept every applicant who meets the minimum admission requirements; an admissions committee selects each only on a competitive basis.

Foreign students whose native 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).

Applicants are to write the School of Library and Information Science for a preliminary information form. The information provided on the form indicates that the applicant satisfies the basic admission requirements, the school will schedule a personal interview.

Prospective students are urged to begin application procedures early enough to complete all requirements by the following deadlines. Applicants must arrive for the fall session if they have not taken the Graduate Record Examination (GRE) General Test.

Completed applications should be received by the school by March 1 for the fall semester consideration, October 1 for the spring semester, or February 1 for the summer session. 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, often is not available for late applicants.

Financial Aid
The School of Library and Information Science provides financial assistance to full-time graduate students. To be considered for a departmental grant, an applicant must have a minimum grade-point average of 3.50 on a 4.00 scale, and a combined verbal/quantitative score of 1000 on the GRE General Test. Those who do not meet these requirements receive stipends from the state or other agencies of higher education. The following minimum stipends for graduate work with a 3.00 grade-point average are available. Prospective students are urged to apply for other awards before March 1. For information on student loans, work-study eligibility, or other financial assistance, contact the Office of Student Financial Aid.

Students interested in part-time employment should contact the librarians in the Iowa City area. Positions usually are available in the University Libraries.

Courses
210 Cooperative Education Internship 6 s.h.
211 Internship for Undergraduates 6 s.h.
212 Supervision and Supervising for Children 3 s.h.
213 Graduate and Supervising in Public Libraries 3 s.h.
214 Supervision Techniques of Library Media 3 s.h.
215 Reference 3 s.h.
216 Bibliographic and Reference Services 3 s.h.
217 Bibliographic and Reference Services 3 s.h.
218 Introduction to Library Media 3 s.h.
219 Introduction to Library Media 3 s.h.
220 Introduction to School Libraries 3 s.h.
221 Introduction to School Libraries 3 s.h.
222 Introduction to School Libraries 3 s.h.
223 Introduction to School Libraries 3 s.h.
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245 Introduction to School Libraries 3 s.h.
246 Introduction to School Libraries 3 s.h.
247 Introduction to School Libraries 3 s.h.

English as a Second Language

ESL instruction is offered in three districts, but required, programs: the ESL credit support courses, the Iowa Intensive English Program (IEEE), and the Teaching Assistant Preparation in English Program (TAPE). These programs meet the needs of students whose native language is not English. The ESL credit support courses help students raise their English proficiency so they can complete their intended academic work. The IEEE provides intensive instruction for students who must raise their English proficiency to gain admission to a university or college. The TAPE 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. ESL courses are offered to increase proficiency in all skill areas, reading, writing, speaking, listening comprehension, 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.

Iowa Intensive English Program (IEEE)

The IEEE primarily serves students who have conditional admission or who have not yet been admitted to the University of Iowa. Each course is worth 3 semester hours, and the scores range from 500 to 599. Students are eligible to be admitted to the University of Iowa with TOEFL scores below 550. The program offers extensive English instruction and a culture, social, and academic orientation to the United States. Instruction emphasizes proficiency in written and spoken English, which is crucial to college and university work. Grammar and common language skills of writing, reading, listening comprehension, pronunciation, and speaking are taught each day at all levels—beginning, intermediate, and advanced.

Each student receives twenty hours of classwork each week, plus individual work in the language laboratory. Field trips and cultural and social events are an integral part of the program. Students enrolled in the IEEE are also required to follow courses at the University of Iowa, which students take full scores in all University facilities. The program welcomes international students preparing to enter universities in college as well as other students who want to improve their English skills. Instruction is by ESL-trained professional ESL instructors.

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 participation techniques, and who will hold teaching assistantships while at The University of Iowa. Only students who need the program and who have sufficient English in English to profit from it are eligible. TAPE courses are open to graduate students who have had at least a B average for over 48 semester hours of English instruction is available. Instruction is by full-time professional ESL instructors.

Facilities

The Department of Linguistics has limited acoustic equipment consisting of a soundproof, an anechoic studio, and a telephone handset. A remote terminal and personal computers are also available to students.

The departmental reading room provides a common meeting place for faculty and students. Students have considerable influence on departmental affairs and enjoy a high degree of individual instruction.

Primarily for Undergraduates

103:000 Comparative Education: Internship

3.0

103:99 Language and Society

3.0

Composition: Theory and Practice stylistic and grammatical analysis for discovering and recording subtle significance, language variety, authorial voice, technical language, and literary style.

103:13 Language and Formal Reasoning

3.0

Linguistic semantics, with emphasis on formal study of linguistic meaning through symbolic semantic reasoning in linguistics, logical analysis of predicates and quantification, and probability. SES, computer terminal, and formal reasoning.

103:15 Elementary Swahili I

3.0

Reading, writing, and speaking skills. CES, foreign language. Same as 120:15, 140:15.

103:16 Elementary Swahili II

3.0

Continuation of 103:15. CES, foreign language. Preparatory. 103:15 or equivalent. Same as 120:16, 140:16.

103:17 Intermediate Swahili I

3.0

Grammar, reading, writing, and speaking skills. CES, foreign language. Same as 120:17, 140:17.

103:18 Intermediate Swahili II

3.0

Grammar, reading, and writing skills. CES, foreign language. Preparatory. 103:17 or equivalent. Same as 120:18, 140:18.

103:99 Special Project

 amt.

For Undergraduates and Graduates

103:012 Introduction to Linguistics

3.0

Vector of terms to general Linguistics. Same as 81:107.

103:046 Varieties of English: Present and Past

3.0

Introductory discussion of "The Story of English" covering English in this country and around the world, origins of English and later development of the language. Implications of language study and practice.

103:056 Teaching English as a Second Language

3.0

Methods and techniques in teaching English to non-native learners. Preparatory: 103:11, 103:12, 103:13, and 103:14.
Special English Courses

For student whose first language is not English.

(1) 3 Iowa Transitive English: Communication

6 h.
Aural comprehension, written English, academic vocabulary, writing skills and academic conventions, outlining with emphasis on logical structure, planning and organization.

(2) Survival English I

3 h.
Language and culture modules on the United States, common expressions, conversational English, and prepositions. Emphasis in class is to improve the student's English skills to enable them to live and study in the United States.

(3) Survival English II

3 h.
Language and culture modules on the United States, common expressions, conversational English, and prepositions. Emphasis in class is to improve the student's English skills to enable them to live and study in the United States.

(4) Intermediate English: Reading

3 h.
Effective reading skills, and practice in reading strategies using in-class reading and discussion of 3000 level vocabulary. Pre-requisite: Survival English I and Survival English II.

(5) Speech English: Writing

3 h.
Oral and written English writing skills, contextual, idiomatic, and informal expressions, idioms, prepositions, communication, language, logical structure, planning, organization.

(6) Business English: Writing

3 h.
Basic business writing skills, contextual idiomatic expressions, idioms, prepositions, communication, language, logical structure, planning, organization.

(7) Ta-Preparation in English: Fluency Practice

3 h.
Pranunciation, stress, enunciation, idioms, communication skills.

(8) Teaching English: Pronunciation

3 h.
Spoken word analysis, pronunciation, enunciation, idioms, communication skills.

(9) Teaching English: Presentation

3 h.
Articulation of speech and clarity of expression is emphasized in planning and delivering presentations. Emphasis on oral communication management and oral presentation.

(10) Teaching English: Orientation

3 h.
Speaking skills for the American academic setting. English for academic writing classes for non-native speakers is emphasized in the delivery of the course. This course should be completed after completing the course.

(11) Teaching English as a Second Language

3 h.
Spoken word analysis, pronunciation, enunciation, idioms, communication skills.

(12) Teaching English as a Second Language: Skills

3 h.
Articulation of speech and clarity of expression is emphasized in planning and delivering presentations. Emphasis on oral communication management and oral presentation.

(13) Teaching English as a Second Language: Writing

3 h.
Spoken word analysis, pronunciation, enunciation, idioms, communication skills.

(14) Teaching English as a Second Language: Listening

3 h.
Spoken word analysis, pronunciation, enunciation, idioms, communication skills.

(15) Teaching English as a Second Language: Reading

3 h.
Spoken word analysis, pronunciation, enunciation, idioms, communication skills.

(16) Teaching English as a Second Language: Research

3 h.
Spoken word analysis, pronunciation, enunciation, idioms, communication skills.

(17) Teaching English as a Second Language: Testing

3 h.
Spoken word analysis, pronunciation, enunciation, idioms, communication skills.

(18) Teaching English as a Second Language: Praxis

3 h.
Spoken word analysis, pronunciation, enunciation, idioms, communication skills.
the Doctor of Philosophy degree. The program helps students achieve a command of theoretical and applied mathematics and obtain a command of one area in another science (behavioral, biological, engineering, medical, physical, or social). The program is flexible; students can concentrate on applied mathematics, such as differential equations and numerical analysis, or on other applicable techniques in mathematics. Scientific computing is an important part of applied mathematics today, so it is often a part of student training and dissertation research.

Applications should have a desire to apply a mathematical science in mechanics, mechanics, or computer science to solve scientific problems in another science. To be prepared for graduate-level work in both mathematics and a science, applicants should have a bachelor's or master's degree with a strong mathematics component.

Plan of Study

Faculty members help each student plan a course of study that is consistent with the student's background, interests, and goals. These individual programs are designed to help students develop expertise in methods of applied mathematics and build a good foundation in related topics of theoretical mathematics. The individual programs also provide sufficient knowledge in a particular science to enable students to use mathematical techniques in that science. Students can arrange their plans to earn a degree in mathematics, at one of four principal concentrations in the mathematics department after they complete part of their plan. Students who articulate their programs and supervise with the help of the faculty.

Comprehensive Exam

Ph.D. comprehensive examinations cover three areas: theoretical foundations of mathematics, methods of application, and the chosen scientific area. One advantage of the Ph.D. program is that it has a flexible curriculum, including many of the objectives of an applied mathematician. For example, a student might formulate a model, do a quantitative analysis of the model, and interpret the results.

Assistantships, Application for Admission

Research and teaching assistantships are available to qualified applicants. Support for students as research assistants is available, and research assistantships are awarded on the basis of/service. The committee for the Program in Applied Mathematics, University of Iowa, Iowa City, Iowa 52242.

Courses

MATH 5970 Reading and Research Course of study required.

Computer Science

Chair: James N. Simon

Professor: Stephen H. Benson, Robert L. Spitzer, Alfred C. Threlfall, Greg Oster (Mathematics)

Associate Professor: Robert A. Myers, Steven C. Brand, Susan C. Crow, Doug W. Jones, Joseph K. Strine, Ken S. Tanaka

Assistant professors: Michael D. Kidder, Margaret Beck, David H. Kupferschmid, Heiko Zech

Lecturers: William E. Beane, Kevin B. Dilling

Undergraduate degrees: B.A., B.S. in Computer Science, minor in Computer Science, Graduate degrees: M.S., Ph.D. in Computer Science

Undergraduate Programs

Computers have changed the world and will be one of the dominant forces in the future. Students need to be proficient in today's ideas and technology and at the same time be prepared to continue tomorrow's challenge. Undergraduate majors in computer science develop competence in mathematical, programming languages, and computer systems. Students also explore at least one area of potential computing applications through a required elective graphic. They have great flexibility in their choice of areas, but specific courses in that area can be approved by a computer science advisor.

Students are assigned advisors but also may look for themselves. They work closely with faculty in their area of interest. The advisor helps students choose a major, minor, and other academic courses. The advisor also helps students choose a career path that is appropriate to their interests. The advisor also helps students choose a career path that is appropriate to their interests.

Pre-Computer Science

Exceptionally well-qualified students may be admitted to the University as computer science majors. These students are required to satisfactorily complete the requirements of the computer science major. Students must complete the following required courses.

1. 226:15 Introduction to Computing

2. 226:52 Introduction to Programming

3. 226:17 Programming Techniques and Data Structures

4. 226:18 Computer Organization and Assembly Language Programming

5. 226:25 Calculus I

6. 226:45 Accelerated Calculus I

Upon completing these courses, students are admitted to the University as computer science majors. The requirements for entering the major are:

1. An overall grade-point average of at least 2.46 in the four required pre-computer science courses; and
2. A grade no lower than C in each of the four required courses.

Total transfer students who have written a computer science course are admitted to the major, provided the transfer grade is at least a B. Such transfer courses are approved by the CoS. The major requires at least 120 credit hours for the major.

Advanced Placement

The Computer Science Advanced Placement test can be used to gain credit for 226:10 and 226:17. See the Computer Science Undergraduate Handbook for more details.

Bachelor of Arts

The General Education Requirements for the degree are shown in the College of Liberal Arts introductory section of this Catalog.

For the B.A., the following computer science core courses are required.

226:21 Calculus I

226:15 Introduction to Programming

226:17 Programming Techniques and Data Structures

226:18 Computer Organization and Assembly Language Programming

226:19 Discrete Structures

226:21 Algorithms and Data Structures

226:25 Calculus I

226:45 Accelerated Calculus I

226:27 Introduction to Linear Algebra

226:19 Discrete Structures

226:17 Programming Techniques and Data Structures

226:18 Computer Organization and Assembly Language Programming

226:19 Discrete Structures

226:21 Algorithms and Data Structures

226:25 Calculus I

226:45 Accelerated Calculus I

226:27 Introduction to Linear Algebra

226:19 Discrete Structures

226:17 Programming Techniques and Data Structures

226:18 Computer Organization and Assembly Language Programming

226:19 Discrete Structures

226:21 Algorithms and Data Structures

226:25 Calculus I

226:45 Accelerated Calculus I

Total 34 hours

In addition, an approved elective program of at least 120 hours is required. (See "Required Elective Program," below.)
Bachelor of Science
The General Education Requirements for this degree are stated in the Catalog section of the College of Liberal Arts. Students majoring in the Computer Science introductory section of the Catalog. Courses that satisfy General Education Requirements, if chosen carefully, may also satisfy the departmental major and specific course requirements as described below.

Students must complete all departmental requirements for the B.A., including the approved elective program at least 12 semester hours. (See "Required Elective Program," in addition, they must complete the following three requirements:

- completion of 223:120 Probability and Statistics, 223:199 Probability and Statistics for the Engineering and Physical Sciences, or another probability and statistics course with a "computational science" advisor;
- completion of a natural science sequence acceptable toward a major in that science; approved sequences are listed under "Natural Science Sequences" below; and
- completion of two advanced courses described following this list.

ADVANCED COURSES

223:51 Computer Graphics 3 s.h.
223:55 Elementary Numerical Analysis 3 s.h.
223:51 Discrete Structures II 3 s.h.
223:96 Topics in Computer Science (offered, may be counted only once as an advanced course) 3 s.h.
223:99 Honor in Computer Science (if repeated, may be counted only once as an advanced course) 3 s.h.
223:122 Advanced Programming Concepts 3 s.h.
223:123 Programming Language Foundations 3 s.h.
223:125 Data: Abstraction, Types, and Structures 3 s.h.
223:127 Introduction to Computer Construction 3 s.h.
223:128 Parallel Programming 3 s.h.
223:135 Introduction to Computer Organization 3 s.h.
223:144 Database Management Systems 3 s.h.
223:145 Artificial Intelligence I 3 s.h.
223:147 Algorithms 3 s.h.
223:160 Geometric and Physical Modeling I 3 s.h.
223:161 Robotics I 3 s.h.
223:162 Computer Vision I 3 s.h.
223:164 Theory of Graphs 3 s.h.
223:178 Computer Communications 3 s.h.
223:180 Fundamentals of Software Engineering 3 s.h.
223:181 Formal Methods in Software Engineering 3 s.h.
223:182 Software Engineering Project 3 s.h.
223:183 Software Engineering Project II 3 s.h.
223:195 Topics in Programming Languages 3 s.h.
223:196 Topics in Software Engineering 3 s.h.

223:196 Topics in Computer Science (if repeated, may be counted only once as an advanced course) 3 s.h.
223:199 Individual Programming Projects II (repeated, may be counted only once as an advanced course) 3 s.h.
223:196 Numerical Analysis 3 s.h.
223:197 Nonlinear Equations and Approximation Theory 3 s.h.
223:171 Difference Equations and Linear Algebra 3 s.h.
223:174 Optimization Techniques 3 s.h.
223:175 Topics in the Numerical Solution of Partial Differential Equations 3 s.h.

These courses cannot be taken pass/no-pass. Students with certain special elective programs may petition for additional courses to be accepted for this requirement.

NATURAL SCIENCE REQUIREMENTS
For the B.S., students must take one or more courses in a sequence required of majors in a chosen area of natural science. The first course must be a prerequisite to the second. This study is intended to enhance the student's perspective of science and facilitate understanding of the scientific method. It is typical, but not required, that these courses be taken in the same science department. This course sequence must total at least 8 semester hours. The above courses must be chosen so that students will also fulfill the natural sciences General education requirement. Some suitable course choices are listed below; the computer science advisor may approve.

- CSE 1:100 Introduction to Computer Science (offered, may be counted only once as an advanced course) 3 s.h.
- 223:100 General Astronomy (GER, lab) 4 s.h.
- 223:102 General Astronomy (GER, lab) 4 s.h.
- Biology 4:13 Principles of Chemistry I (GER, lab) 3 s.h.
- Biology 4:13 Principles of Chemistry II (GER, lab) 3 s.h.
- Biology 4:13 Principles of Animal Biology (GER, lab) 5 s.h.
- Botany 2:1 Introduction to Botany (GER, lab) 4 s.h.
- 2:00 Plant Life: An Evolutionary Survey (not a natural science GER) 4 s.h.
- Chemistry 4:14 Principles of Chemistry I (GER, lab) 3 s.h.
- 4:14 Principles of Chemistry II (GER, lab) 3 s.h.
- 4:16 Principles of Chemistry I Lab I 2 s.h.
- Physics 223:17 Introduction to Physics (GER, lab) 4 s.h.
- 223:18 Introductory Physics II (GER, lab) 4 s.h.

Required Elective Program
For the B.A. or B.S., students must take at least 12 semester hours of electives in a thematic area with potential computing application, such as business, engineering, physics, or another field in which they plan to apply the computer science degree. These courses must be approved by the student's computer science advisor. Special courses may be taken pass/no-pass. See the Computer Science Undergraduate Handbook for more details and examples of approved elective programs.

Honors
Any University of Iowa student with a cumulative grade-point average of 3.50 or higher may join the University Honors Program. Interested students should contact the honors program office in the Slavic House Honors Center.

To graduate with honors in computer science, students complete 4-5 semester hours of 223:99 Honors in Computer Science and retain an acceptable honors thesis. The course 223:99 can count as one but not both of the two advanced courses for the B.S. To take 223:99, students must 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 more details.

Minor in computer science requires a total of 15 semester hours of computer science courses, at least 12 of which must be taken in "approved University of Iowa courses" and the remaining 3 which are considered "advanced." 223:99, 223:10, and 223:19 must be taken at the University of Iowa, only. The following courses are approved: 223:16, 223:10, 223:19, 223:26, 223:27, 223:29, and 223:29. 223:29 must be numbered higher than 223:18 and/or 223:29. 223:16, 223:17, 223:18, and one additional number must be numbered higher than 223:18; or 223:29, 223:10, 223:16, 223:17, and 223:18.

Graduate Programs
Master of Science
All candidates for the M.S. in computer science must complete the following courses or acquire equivalent proficiency.

223:115 Advanced Programming Systems 3 s.h.
223:123 Advanced Computer Organization and Architecture 3 s.h.
223:126 Programming Language Foundations 3 s.h.
223:123 Introduction to Computer Organization 3 s.h.
223:127 Introduction to Computer Organization 3 s.h.

Total 39 s.h.
Courses outside computer science are selected to support the student's career goals and must be approved by the advisor. They are intended to broaden the philosophical base of computer science through study of a new area or to extend students' work outside of computer science.

Computer science courses should be selected according to students' special area interests, but they should also provide a broad range of experience and competence in computer science. In particular, some experience with projects requiring extensive programming should be included.

M.S. candidates may elect to write a thesis, and with their advisor's consent may up to 8 semester hours of thesis work toward the minimum total of 30 semester hours of credit required for the M.S.

The M.S. final examination consists of either an oral defense of the thesis or a written comprehensive examination that assesses completion of the following requirements: 22C:116 Advanced Operating Systems, 22C:122 Advanced Compiler Organization and Architecture, 22C:123 Programming Language Foundations, and 22C:135 Introduction to Computational Theory. The written examination attempts to address the interface among these four courses as well as the major topics in each course. Students should consult the Computer Science Graduate Handbook for more information.

Applicants for admission to the M.S. program in computer science usually are required to have a background in computer science. In special cases, students with appropriate background may be admitted to the graduate program. In such cases, the student is required to complete specific courses prior to admission to graduate courses.

Software Engineering Subtrack

M.S. candidates may elect the software engineering subtrack along with the Department of Electrical and Computer Engineering. Students must satisfy the following requirements:

22C:110 Fundamentals of Software Engineering 3 s.h.
22C:112 Formal Methods in Software Engineering 3 s.h.
22C:120 Software Engineering Project 1 3 s.h.
22C:121 Software Engineering Project II 3 s.h.

Four computer science courses listed under "Master of Science" (22C:116, 22C:122, 22C:123, 22C:135) 12 s.h.
A 200-level course in computer science 3 s.h.

Total 36 s.h.

Doctor of Philosophy

The department is highly selective in admitting doctoral students and usually considers only applicants with a grade-point average above 3.0.

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 to begin dissertation work, and they need not acquire one in order to be eligible for the Ph.D. Course requirements or equivalent proficiency for the doctorate include the following:

22C:116 Advanced Operating Systems 3 s.h.
22C:122 Advanced Computer Organization and Architecture 3 s.h.
22C:123 Programming Language Foundations 3 s.h.
22C:135 Introduction to Computational Theory 3 s.h.
22C:137 Design and Analysis of Algorithms I 3 s.h.

Students must complete at least 18 semester hours of 200-level computer science coursework to apply in addition to 22C:209 Research for the Ph.D.

In addition to the course work in computer science, students must complete at least three courses, with grades of A or B, in one of these three general areas: algebra, analysis, logic and set theory, operations research, statistics and probability, and numerical analysis.

At least one course in the outer area must be at the 200 (advanced) level, except in statistics and probability, where the advanced course may be at the 100 level.

COMPREHENSIVE EXAM

Students write the M.S. comprehensive examination at the first of the Ph.D. comprehensive examination. Thereafter, they select a faculty advisor and a research committee within a specialty area. They then formulate a plan of study and a research program.

The second part of the Ph.D. comprehensive examination is taken under the direction of the research committee; normally, both a written and oral portion is required.

Dissertation

Students prepare a written proposal for research and present an oral defense to the research committee. They must demonstrate expertise in the area of proposed research and justify the proposal in terms of originality and significance. Students make a final oral defense of their completed dissertation.

Graduate Service Courses

Competence and experience in the use of a digital computer in programming is helpful and often prerequisite to advanced study and research in many disciplines. For most students, the two-semester sequence, 22C:100 Introduction to Programming with Pascal and 22C:167 Programming Techniques and Data Structures, is recommended. Students in fields in which other programming languages are used may find 22C:100 Introduction to Programming with FORTRAN, 22C:109 Programming with COBOL, or 22C:110 Programming with C more appropriate.

Courses

Primary for Undergraduates

22C:100 Computer Education Training Assignment 0 s.h.
22C:101 Computer Organization and Operation 3 s.h.
22C:102 Advanced Operating Systems 3 s.h.
22C:116 Advanced Operating Systems 3 s.h.
22C:122 Advanced Computer Organization and Architecture 3 s.h.
22C:123 Programming Language Foundations 3 s.h.
22C:135 Introduction to Computational Theory 3 s.h.
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At least one course in the outer area must be at the 200 (advanced) level, except in statistics and probability, where the advanced course may be at the 100 level.

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Dissertation

Students prepare a written proposal for research and present an oral defense to the research committee. They must demonstrate expertise in the area of proposed research and justify the proposal in terms of originality and significance. Students make a final oral defense of their completed dissertation.
RESTRICTIONS
The program must include a two-semester sequence from Group I, or any two courses chosen from one of the clusters listed in Group II.

Group I
22M.100/140 Introduction to Ordinary Differential Equations/Continuous Mathematics
22M.100/142 Introduction to Ordinary Differential Equations/Partial Differential Equations
22M.100/144 Introduction to Ordinary Differential Equations/Introduction to Partial Differential Equations II
22M.115/116 Introduction to Analysis I, II
22M.120/121 Abstract Algebra I, II
22M.127/127 Introduction to Linear Algebra/Matrix Theory
22M.127/124 Foundations of Set Theory/Foundations of Logic
22M.160 Calculus III/Introduction to Differential Geometry I
22M.111/111 Complex Variables/Complex Variables: Applications
22M.200/200 Elements of Group Theory/Abstract Algebra I
22M.200/200 Elements of Geometry/Finite Mathematics
22M.133/131 Introduction to Probability/Introduction to Mathematical Statistics
22M.133/131 Introduction to Probability/Introduction to Stochastic Processes

Group II
22M.156/156 Elementary Combinatorics/Discrete Mathematics Models/Theory of Graphs
22M.156/156/130 Fundamental Properties of Special and Pseudo-Differential Equations/General Topology/Topics in Topology

Capable students are encouraged, with the approval of their advisors, to substitute higher-level courses in the same area for any of these requirements. The student handbook offers further advice on the selection of courses.

Program B Requirements
This program is intended primarily for students seeking secondary school teaching certification. See “Curriculum and Instruction” in the College of Education section of the Catalog.
22M.25-26 Calculus III or
22M.35-36 Engineering Calculus I or
22M.45-46 Accelerated Calculus I or
22M.38 Calculus III
22M.56 Elements of Group Theory
22M.55 Fundamental Properties of Spaces and Functions
22M.70 Foundations of Geometry
22M.16 Introduction to Programming with Pascal
22S.120 Probability and Statistics
22S.153-154 Introduction to Probability/Introduction to Mathematical Statistics
22M.90 Introduction to Discrete Mathematics
22M.151 Discrete Mathematical Models
22M.151 Theory of Graphs

One additional upper-level course in mathematics, exclusive of 22M.81 and 22M.195; the following courses are recommended for this requirement.
22M.200 General Topology
22M.217/217 Elements of Topology
22M.217/217 General Topology/Topics in Topology

The mathematics requirement may also be satisfied by one of the following computer science and statistics courses.
22C.17 Programming Techniques and Data Structures
22C.21 Algorithms and Data Structures
22C.153 Introduction to Computation Theory
22C.153 Design and Analysis of Algorithms
22C.153 Regression Analysis
22C.154 Introduction to Probability
22C.154 Introduction to Mathematical Statistics
22C.156 Applied Time Series Analysis
22C.156 Introduction to Discrete Probability Models
22C.167 Introduction to Stochastic Processes

Total 39.44 h.

Bachelor of Science

Program A Requirements
Program A Requirements for the B.S. are the same as those for the B.A. program A, except that two additional courses in mathematics numbered 22M.107 or higher, excluding 22M.195, are required. The following computer science and statistics courses also may be used to fulfill this requirement.
22C.153 Introduction to Computation Theory
22C.153 Design and Analysis of Algorithms
22C.153 Regression Analysis
22C.153 Introduction to Probability
22C.154 Introduction to Mathematical Statistics
22C.156 Applied Time Series Analysis

Program B Requirements
Program B requirements for the B.S. are the same as those for the B.A. program B, except that two additional courses in mathematics numbered 22M.107 or higher are required. The statistics and computer science courses listed in immediate A requirements for the B.S. also may be used to fulfill this requirement.

General Education Requirements
Candidates must satisfy the College of Liberal Arts General Education Requirements and are required to select GER courses that use mathematics.

Other Requirements
Additional degree requirements concerning minor criteria, grade-point average, and so forth, are discussed in the College of Liberal Arts section of the Catalog.

At least 15 semester hours of post-calculus courses applied toward the major requirements must be taken at The University of Iowa.

Double Major in the Division of Mathematical Sciences
Students wishing to combine a degree in mathematics with one in computer science, statistics, or actuarial science must satisfy the requirements of program A or program B. Both degrees must be earned in the same—B. A. or B. S.—The College of Liberal Arts requires that students seeking a mathematics double major must earn a minimum of 50 semester hours in courses taken outside the division.

Honors
Any undergraduate student with a cumulative grade-point average of 3.20 or higher may plan the University Honors Program, informed students should contact the honors office in the Throgs Neck House Honors Center. To order to graduate with honors in mathematics, a student must be registered in the College of Liberal Arts at the time of graduation. The College of Liberal Arts requires that students seeking a mathematics double major must earn a minimum of 50 semester hours in courses taken outside the division.

Students interested in the University Honors Program should contact the honors office in the Throgs Neck House Honors Center. To order to graduate with honors in mathematics, a student must register in the College of Liberal Arts at the time of graduation. The College of Liberal Arts requires that students seeking a mathematics double major must earn a minimum of 50 semester hours in courses taken outside the division.

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Minor

The minor in mathematics requires:

- A minimum of 15 semester hours credit
- In Department of Mathematics courses, at least 12 of these 15 semester hours must be taken at The University of Iowa in advanced courses; neither transfer credit nor credit by examination is accepted toward these 12 semester hours of advanced work.
- Advanced courses are 22M:37, 22M:39, and all courses numbered 22M:50 or higher except 22M:81, 22M:94, and 22M:195.

A grade-point average of at least 2.00 in all work attempted in the Department of Mathematics.

No course counted toward the minor may be taken pass/fail.

Graduate Programs

Master of Science

Students earn the M.S. through courses and comprehensive examinations. There is no 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.

Students must take a two-semester sequence in analysis (either 22M:115-116 or 22M:210-211), a course in topology (22M:132), and a two-semester sequence in abstract algebra (either 22M:120-121 or 22M:205-206). The student must take two comprehensive examinations, one on the analysis and topology sequence and the other on the algebra sequence.

The program requires a minimum of 30 semester hours of graduate credit, including at least 24 semester hours in the Division of Mathematics Sciences. Students who have courses and credit equivalent to the required courses may request substitute electives.

Program II

This program is designed for secondary school teachers. The requirements are the same as those in program I or II, except that two mathematics education courses are required. All mathematics courses numbered 22M:102 or higher may be used to satisfy the 24-semester-hour requirement. Students are encouraged to consult with mathematics education faculty when planning their courses of study.

Program III

This program focuses on applied mathematics. It requires several courses and two comprehensive examinations, one on differential equations (22M:144, 22M:145) and one on numerical analysis/optimization (22M:176, 22M:177, 22M:178). The required courses are:

- 22M:144 Introduction to Partial Differential Equations
- 22M:142 Intermediate Differential Equations
- 22M:140 Continuous Mathematical Models
- 22M:151 Discrete Mathematical Models
- 22M:174 Optimization Techniques

Two additional courses from the following:

- 22M:118 Complex Variables
- 22M:127 Modern Algebra
- 22M:140 Continuous Mathematical Models
- 22M:151 Discrete Mathematical Models
- 22M:152 Theory of Graphs
- 22M:160 Advanced Operating Systems
- 22M:153 Design and Analysis of Algorithms I
- 22M:152 Introduction to Probability
- 22M:154 Introduction to Mathematical Statistics
- 22M:167 Introduction to Stochastic Processes

The program requires a minimum of 30 semester hours of graduate credit, including at least 24 semester hours in the Division of Mathematics Sciences. Students who have courses and credit 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 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 in mathematics if they have maintained a minimum grade-point average of 3.00 in all mathematics courses taken for the master's in mathematics and have successfully completed the Ph.D. comprehensive examination in the chosen area.

Students in program IV are assigned a mathematics advisor, who works with them and their major advisor to plan an appropriate curriculum for the master's in mathematics. A suitable program of study should be approved by a mathematics advisor before the student takes the Ph.D. comprehensive examination, and a member of the mathematics faculty should serve on the Ph.D. comprehensive examination committee.

Admission

Admission to the M.S. program (019) is based on a combination of undergraduate course work and grades, letters of recommendation, and GRE General Test scores (also 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 deficiencies.

Students must have an undergraduate grade-point average of at least 2.80. Resistance and difficulty of courses are considered when evaluating grades; grades of C or lower in mathematics courses need to be backed up by A grades.

Students must submit three letters of recommendation to support their application.

Students must score at least 630 on the quantitative section of the GRE General Test. Applicants are encouraged to submit scores for the mathematics exam as well as for verbal, writing sections and financial support whose credentials may show weak areas.

For the requirements to demonstrate competence in English, normally this is done by scoring at least 550 on the 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 "applied" mathematics. It cooperates in interdisciplinary doctoral programs with the College of Education and the Program in Applied Mathematics.

A Ph.D. student in mathematics must satisfy the following requirements for course work (credits and examinations), comprehensive examination, foreign language, and dissertation.

At least 72 semester hours of graduate credit is required, and at least three years of graduate residence, including at least one year at The University of Iowa. While there are no individual requirements for coursework, seminars are designated as preparatory for the Ph.D. comprehensive examination (see below). Students should give these high priority.

To further encourage mathematical breadth, students must complete 18 quarter 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 and 300 level courses that are accepted as well as 700 level courses.
The Ph.D. comprehensive examination consists of three parts, each for three hours without exam, all taken over a two-week period. The three areas are chosen by the student from the department's list of comprehensive examination areas, as follows: at least two of algebra, analysis, logic and topology; and either one of the following or partial differential equations. For each comprehensive area, there is a two semester, 200-level course sequence designated as preparation, although exams may differ from course content. One grade (pass, fail, conditional pass) is given on the whole three-part examination by a committee that usually consists of six faculty members. 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. The demonstration of language competence must take place after the student has resided in graduate school.

The most distinctive aspect of a Ph.D. is the thesis. The department expects the Ph.D. to be an original mathematical work, suitable for publication, in common with what is found in standard published research journals. The thesis is written under the supervision of a committee chairman representing the student’s family, presumably the student’s advisor. Admission Admissions to the Ph.D. program is based on a conference interview with the Ph.D. committee. The applicant’s previous academic record is used as one of the main criteria for admission to the Ph.D. program in this section. The department will generally require four or five courses and scores for doctoral admissions. Undergraduate or graduate grade averages of at least 3.00, GRE General Test quantitative score of at least 700, TOEFL score of at least 575. Applicants are normally admitted to graduate studies in mathematics, but it is strongly recommended that they plan to proceed to the Ph.D. program. In addition to the usual 200-level course requirements, the student must have at least five years of high school education and a minimum of four years of high school mathematics. 23.01 Introduction to Linear Algebra 3 s.h.
23.02 Basic Algebra I 3 s.h.
24.05 Introduction to Linear Algebra 3 s.h.
25.01 Introduction to Linear Algebra 3 s.h.
26.01 Basic Algebra I 3 s.h.
26.02 Basic Algebra II 3 s.h.
26.03 Algebraic Structures 3 s.h.
26.04 Group Theory 3 s.h.
26.05 Rings and Modules 3 s.h.
26.06 Representation 3 s.h.
26.07 Algebraic Topology 3 s.h.
26.08 Algebraic Topology 3 s.h.
26.09 Algebraic Topology 3 s.h.
26.10 Algebraic Topology 3 s.h.
26.11 Introduction to Algebraic Geometry 3 s.h.
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26.147 Algebraic Geometry 3 s.h.
Bachelor of Science in Statistics

Applied Statistics

This program is designed to prepare students for careers in applied statistics or for graduate study in statistics or other disciplines that incorporate statistical tools. The required courses in the program are:

22C.7 Introduction to Computing with FORTRAN 22C.16 Introduction to Programming with Pascal 22M.05-26 Calculus III 22M.46-46 Calculus II 22M.36-36 Engineering Calculus II 22M.36-36 Engineering Calculus II 22M.45-45 Accelerated Calculus I 22M.45-45 Accelerated Calculus I

Sophomore Year

Full Semester
22M.25 Calculus I 4 s.h.
22M.35 Engineering Calculus I 4 s.h.
22M.45 Accelerated Calculus I 4 s.h.
101.318 Computer Science I 4 s.h.

Spring Semester
22M.26 Calculus II 4 s.h.
22M.36 Engineering Calculus II 4 s.h.
22M.46 Accelerated Calculus II 4 s.h.
101.318 Computer Science II 4 s.h.

Junior Year

Full Semester
221.153 Introduction to Probability 3 s.h.
221.177 Numerical Analysis for Scientists 3 s.h.
225.180 Mathematics of Finance 3 s.h.
225.180 Mathematics of Finance 3 s.h.

Spring Semester
221.150 Methods of Statistical Inference 3 s.h.
221.154 Introduction to Mathematical Statistics 3 s.h.
221.181 Life Contingencies I 3 s.h.
Business requirement

Senior Year

Full Semester
221.175 Risk Theory 3 s.h.
221.182 Life Contingencies II 3 s.h.
Business requirement

Spring Semester
221.176 Casualty Actuarial Mathematics 3 s.h.
221.183 Life Contingencies III 3 s.h.

Honors

Qualifying undergraduate students may earn their degree with honors.

To graduate with honors in actuarial science, a student must have a grade-point average of at least 3.33 in all departmental courses numbered 120 and higher, pass certain professional exams, and complete two additional courses or an honors project.

To graduate with honors in statistics, a student must have a grade-point average of at least 3.33 in all departmental courses numbered 120 and higher, complete one 200-level course with a grade of at least B, and complete an honors project.

More specific information about these requirements is available from the department.

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 221,120 and above. Students can earn a minor in actuarial science by completing 15 semester hours in Department of Statistics and Actuarial Science courses, 221,135, 221,154, 221,180, and 221,181. For other minors, such as economics, psychology, and additional courses in mathematics, students are encouraged to take courses in areas in which statistics is applied.

Graduate Programs

Master of Science

Each M.S. candidate has a committee of four members, which is responsible for recommending action on the candidate's degree. For nonthesis programs, the committee's recommendation is based on the student's record. For thesis programs, the committee's final recommendation is based on the candidate's thesis, although it may be based on a single written examination covering the topic covered in the candidate's program of study.

With the approval of certain two-course sequences approved by the department, graduate students may not include on their plan of study any course that also is a prerequisite for a course in another major. When approved two-course sequences are repeated, the second course of the sequence...
may appear on the plan of study. At the present time, the only approved two-course sequences are 225:135-136, 225:175-176, and 225:182-183.

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. Students who choose to earn the M.S. with thesis may earn up to 6 semester hours of credit for thesis preparation. Specific course requirements for the M.S. programs are as follows:

**Actuarial Science**

Eleven graduate courses are required; they must include:

- 225:153 Introduction to Probability 3 s.h.
- 225:154 Introduction to Mathematical Statistics 3 s.h.
- 225:155 Methods of Statistical Inference 3 s.h.
- 225:175 Stochastic Theory 3 s.h.
- 225:177 Numerical Analysis for Actuaries 3 s.h.
- 225:180 Mathematics of Finance 3 s.h.
- 225:181 Life Contingencies I 3 s.h.
- 225:182 Life Contingencies II 3 s.h.
- 225:196 Casualty Actuarial Mathematics 3 s.h.
- or
- 225:193 Life Contingencies III 3 s.h.
- 225:193 Casualty Actuarial Topics 3 s.h.
- 225:194 Life Actuarial Topics 3 s.h.

The eleven course sequence may be any course in statistics, mathematics, science, or finance that the student's advisor deems appropriate. In certain cases, with consent of the advisor, a different course may be substituted for 225:179 or 180.

**Theoretical Statistics and Probability**

- 225:15 Introduction to Analysis I 3 s.h.
- 225:152 Probability 3 s.h.
- 225:154 Introduction to Mathematical Statistics 3 s.h.
- 225:167 Introduction to Stochastic Processes 3 s.h.
- 225:201 Theory of Statistics I 3 s.h.

At least two of these:

- 225:164 Introduction to Discrete Probability Models 3 s.h.
- 225:172 Topics in Statistics 3 s.h.
- 225:202 Theory of Statistics II 3 s.h.
- 225:230 Introduction to the Theory of Nonparametric Statistics 3 s.h.
- 225:255-254 Advanced Inference III 3 s.h.
- 225:255-254 Advanced Inference II 3 s.h.
- 225:356 Multivariate Analysis 4 s.h.
- 225:204-205 Theory of Probability II 5 s.h.

**Applied Statistics**

- 225:153 Regression Analysis 3 s.h.
- 225:135 Introduction to Probability 3 s.h.

225:154 Introduction to Mathematical Statistics 3 s.h.

225:155 Analysis and Design of Experiments I 3 s.h.

225:173 Data Analysis 3 s.h.

At least two of the following:

- 225:156 Applied Time Series Analysis 3 s.h.
- 225:156 Application of Multivariate Statistical Techniques 3 s.h.
- 225:156 Analysis and Design of Experiments II 3 s.h.

The remainder of the program consists of at least two additional courses numbered 225:153 or above, and other courses approved by the student's advisor.

Experience in a computer language such as FORTRAN is required. If students satisfy the requirement by taking a course, that course may not be counted toward the M.S. semester-hour requirement.

The applied statistics program is designed to be flexible, so that students may concentrate on an area of application in addition to the required statistics courses. Students should work closely with their advisor in developing programs of study tailored to their specific interests. If the student's interest in a particular applications area is strong, a program in another department may be more appropriate, for example, educational measurement and statistics (education), operations research (industrial and management engineering), and biostatistics (preventive medicine and environmental health).

**Wright Thes"**

- 225:152 Regression Analysis 3 s.h.
- 225:156 Applied Time Series Analysis 3 s.h.
- 225:156 Analysis and Design of Experiments I 3 s.h.
- 225:161 Application of Multivariate Statistical Techniques 3 s.h.
- 225:196 Analysis and Design of Experiments II 3 s.h.

The remainder of the program consists of at least two additional courses numbered 225:153 or above, and other courses approved by the advisor. With the advisor's approval, courses in other fields related to the thesis may be substituted.

Experience in a computer language such as FORTRAN is required. If students satisfy the requirement by taking a course, that course may not be counted toward the M.S. semester-hour requirement.

Student must take at least 2 semester hours of seminar in addition to practical work. Students are required to have a grade-point average of at least 3.00 for courses that appear on the plan of study. Outstanding students may write M.S. theses.

**Doctor of Philosophy**

To satisfy the course requirements for a Ph.D. in statistics, students must successfully complete:

- 225:156 Application of Multivariate Statistical Techniques 3 s.h.
- 225:156 Analysis and Design of Experiments I 3 s.h.
- 225:173 Data Analysis 3 s.h.
- 225:201-202 Theory of Statistics II 3 s.h.
- 225:255 Advanced Inference I 3 s.h.
- 225:255 Linear Models 3 s.h.
- 225:226 Theory of Probability 3 s.h.
- 225:255 Theory of Probability II 3 s.h.

At least 2 semester hours of any combination of the following:

- 225:201 Seminar: Mathematical Statistics 3 s.h.
- 225:202 Seminar: Probability 3 s.h.

At least one of the following:

- 225:206 Introduction to Stochastic Processes 3 s.h.
- 225:255 Application of Multivariate Statistical Techniques 3 s.h.
- 225:255 Advanced Analysis and Design of Experiments II 3 s.h.

At least one of the following:

- 225:250 analysis of Categorical Data 3 s.h.
- 225:250 Introduction to the Theory of Nonparametric Statistics 3 s.h.

At least one of the following:

- 225:254 Advanced Inference II 3 s.h.
- 225:256 Multivariate Analysis 3 s.h.
The department requires a grade-point average of at least 3.50 for scores that appear on the plan of study. In addition, a grade-point average of at least 3.50 is required on courses used to fulfill the requirements. Students must complete a total of 120 credit hours for the degree. Additionally, students must complete a minimum of 42 credit hours of upper-division courses. Well-prepared students entering with a B.S. require three years of course work to complete the doctoral program. They take 225/201 and 225/202 in the first year and 225/203, 225/204, 225/205, and 225/206 in the second year, and add two years to the program in addition to the above requirements, for a total of 42 credit hours in the last two years.

Courses

Primary for Undergraduates

Students may not receive credit for a course if they already have received credit for a course numbered 100 or above. Students may receive credit in only one of the following courses: 225/2, 225/4, or 225/55; however, students who take 225/2 before 225/4 may receive credit for both.

For Undergraduates and Graduates

225/600 Cooperative Study Internship 3 sh.
225/610 Biostatistics 3 sh.
225/620 Introduction to Statistical Method 3 sh.
225/630 Probability and Statistics I 3 sh.
225/640 Analysis and Design of Experiments in the Biological Sciences 3 sh.
225/640/642 Intermediate Statistical Method Preparatory 225/103 or 225/104. 4 sh.
Military Science (Army ROTC) • Liberal Arts 177

22C/7 Introduction to Computing with FORTRAN 3 s.h.
or
22C/16 Introduction to Programming with Pascal 4 s.h.
and
22C/17 Programming Techniques and Data Structures 3 s.h.

Honors
The honors program is open to juniors and seniors who have a grade-point average of at least 3.20 overall and 3.50 in mathematics courses. The program requires 25 semester hours of course work in mathematics, including 6 semester hours in 0111-712 Honors Mathematics. These two courses constitute 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 minimum grade-point average of 2.00. Of these 15 semester hours, at least 12 must be taken at The University of Iowa in courses numbered 011-003 and above.

Graduate Programs, Faculty, Courses
See "Microbiology" in the College of Medicine section of the Catalog.

MILITARY SCIENCE (ARMY ROTC)

Maj. W.L. Calhoun (Chair), Maj. H.R. Poblete

Army ROTC program at The University of Iowa has several components: a four-year professional program, a two-year program, and a junior ROTC component. The program provides students with a well-rounded education in the area of military and leadership responsibilities. In addition, students who complete the ROTC program may obtain officer commissioning or be considered for enlisted positions in the Army.

Undergraduate Program

ROTC COURSE

The ROTC basic course is designed primarily for freshmen and sophomores. It provides the fundamentals of leadership and management and introduces the roles of the military officer as defined 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 requirements:

23-01 The Profession of Arms 1 s.h.
23-02 The Military in a Modern Society 1 s.h.
23-05 Military Survival Skills 2 s.h.
23-06 Principles of Modern Warfare 2 s.h.

The basic course requirements are over a one-year period or during a six-week paid term during the summer. Students with prior military training may be 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 Second lieutenant in the U.S. Army upon graduation. It is open to both undergraduate and graduate students. Most students in the advanced course enjoy an obligation with the military that will extend to the regular Army or the Army Reserve.

A grant of $100 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 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 3.20. A six-week paid camp, ROTC Camp, takes place in the summer for the junior year. It is required for all students wishing to become Army officers. The following courses are the advanced course requirements for completion of the advanced course:

23-05 Advanced Military Fitness Training (Component 23-117) 1 s.h.
23-116 Challenges of Leadership 3 s.h.
23-117 State Unit Tactics 3 s.h.
23-118 Military Management 3 s.h.
23-119 Service Operator 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 satisfy the College of Liberal Arts General Education Requirements:

Written Communications 10-20 Rhetoric II 4 s.h.
10-3 Advanced Rhetoric (or equivalent) 4 s.h.

Human Behavior
28-01 Introduction to Psychology 3 s.h.
28-102 Introduction to Ethics 3 s.h.
50-1 Introduction to American Politics 3 s.h.
51-1 History of the United States 3 s.h.
52-3 Logic and Society 3 s.h.
53-1 Theories of Society 3 s.h.

Principles
40-1 American Values 3 s.h.
113-3 Introduction to the Study of Culture and Society 4 s.h.

113-10 anthropology and Contemporary World Problems 3 s.h.

Mathematics
71-01 Elementary Statistics and Probability 3 s.h.
22A-1 Basic Algebra I (no degree credit) 3 s.h.
22A-2 Basic Algebra II (no degree credit) 3 s.h.
22A-3 Basic Geometry (no degree credit) 3 s.h.
22A-10 Finite Mathematics 4 s.h.
22C/11 Introduction to Calculus with Analytic Geometry 4 s.h.
22C/17 Quantitative Methods I 4 s.h.
22C/25 Calculus I 4 s.h.
22C/32 Statistics and Society 3 s.h.
22C/58 Quantitative Methods II 4 s.h.
26-35 Techniques of Reasoning 3 s.h.
36C-40 Theory and Practice of Argument 4 s.h.

100-15 Language and Formal Reasoning 3 s.h.

Military History
16-11 Issues in Human History: Vietnam War in Historical Perspective 3 s.h.
16-12 Issues in Human History: European Conquest and Colonization, 1000-1800 3 s.h.
16-17 Issues in Human History: The Cold War 3 s.h.
16-18 War and Society 3 s.h.
16-145 Women and War 3 s.h.
16-182 The Vietnam War in Historical Perspective 3 s.h.
16A-13 The Cold War, A World at War 1951-1945 3 s.h.
16A-162 American Revolution, Period 1770-1791 3 s.h.
16A-173 Civil War and Reconstruction 3 s.h.
16A-180 The Progressive Era in America 3 s.h.
16A-192 The Contemporary United States 1940-Present 3 s.h.

Computer Literacy
66-70 Introduction to Computer Applications 3 s.h.
71-02 Introduction to Microcomputer for Teachers 3 s.h.
22C/01 Programming I 3 s.h.

22C/02 Programming II 3 s.h.
22C/03 Programming III 3 s.h.
22C/04 Programming IV 3 s.h.
22C/05 Programming V 3 s.h.
22C/06 Programming VI 3 s.h.
22C/07 Programming VII 3 s.h.
22C/08 Programming VIII 3 s.h.
22C/09 Programming IX 3 s.h.
22C/10 Programming X 3 s.h.
22C/11 Programming I 3 s.h.
22C/12 Programming II 3 s.h.
22C/13 Programming III 3 s.h.
22C/14 Programming IV 3 s.h.
22C/15 Programming V 3 s.h.
22C/16 Programming VI 3 s.h.
22C/17 Programming VII 3 s.h.
22C/18 Programming VIII 3 s.h.
22C/19 Programming IX 3 s.h.
22C/20 Programming X 3 s.h.
22C/21 Programming XI 3 s.h.
22C/22 Programming XII 3 s.h.
22C/23 Programming XIII 3 s.h.
22C/24 Programming XIV 3 s.h.
22C/25 Programming XV 3 s.h.
22C/26 Programming XVI 3 s.h.
22C/27 Programming XVII 3 s.h.
22C/28 Programming XVIII 3 s.h.
22C/29 Programming XIX 3 s.h.
22C/30 Programming XX 3 s.h.
22C/31 Programming XXI 3 s.h.
22C/32 Programming XXII 3 s.h.
22C/33 Programming XXIII 3 s.h.
22C/34 Programming XXIV 3 s.h.
22C/35 Programming XXV 3 s.h.
22C/36 Programming XXVI 3 s.h.
22C/37 Programming XXVII 3 s.h.
22C/38 Programming XXVIII 3 s.h.
22C/39 Programming XXIX 3 s.h.
22C/40 Programming XXX 3 s.h.

Financial Aid
The Military Science Department offers two, three-, and four-year merit scholarships for students who wish to enter the ROTC program. These scholarships provide partial payment of tuition at The University of Iowa, $450 for books and supplies each year, an allowance for housing, and a tax-free subsistence allowance of $100 per month during the academic year. Additional scholarships are available for nursing students who wish to become Army nurses.
## Courses

23-505 Learning Laboratory
- 3 h.
- Instructor: R. A. Gunnes
- Offered by the music department
- This courses is open to any student, regardless of the subject, music education, and is offered on a need basis.

23-507 The Music and the Military
- 3 h.
- Instructor: M. A. Levey
- Offered at the University of Mississippi
- This course focuses on the role of music in military settings

23-508 The Music of the World
- 3 h.
- Instructor: K. W. Thomas
- Offered by the music department
- This course explores music from around the world

23-509 Military Synthesis Skills
- 3 h.
- Instructor: R. A. Gunnes
- Offered by the music department
- This course teaches students the skills needed to perform in a military setting

23-510 Advanced Military Music Theory
- 3 h.
- Instructor: K. W. Thomas
- Offered by the music department
- This course focuses on advanced musical theory

23-520 Conducting and Conducting Techniques
- 3 h.
- Instructor: K. W. Thomas
- Offered by the music department
- This course teaches students how to conduct music

23-530 Performance of Military Organizations and Operations
- 3 h.
- Instructor: R. A. Gunnes
- Offered by the music department
- This course focuses on the performance of military organizations

23-119 Leadership
- 3 h.
- Instructor: R. A. Gunnes
- Offered by the music department
- This course focuses on leadership skills

23-117 Field Music
- 3 h.
- Instructor: K. W. Thomas
- Offered by the music department
- This course focuses on field music

23-130 Service Overseas
- 3 h.
- Instructor: K. W. Thomas
- Offered by the music department
- This course focuses on overseas service

23-131 Readings in Contemporary Military Literature
- 3 h.
- Instructor: K. W. Thomas
- Offered by the music department
- This course focuses on contemporary military literature

## Molecular Biology

**Graduate degree:** Ph.D. in Molecular Biology

**The Molecular Biology Ph.D. Program** is an advanced program involving members of the Departments of Biochemistry, Biophysics, and Physiology. It also offers a Master's degree in Molecular Biology. The program is designed to prepare students for careers in research, teaching, and industry.

### Courses

**Molecular Biology Courses**

- **Biochemistry:** Focus on the molecular basis of life processes and the role of enzymes in catalyzing chemical reactions.
- **Cell Biology:** Study of the structure and function of cells.
- **Molecular Genetics:** Focus on the genetic basis of life processes.
- **Molecular Evolution:** Study of the evolution of life processes.
- **Molecular Immunology:** Focus on the role of the immune system in life processes.
- **Molecular Microbiology:** Study of the role of microorganisms in life processes.
- **Molecular Virology:** Study of the role of viruses in life processes.
- **Molecular Pathology:** Study of the role of disease in life processes.
- **Molecular Pharmacology:** Study of the role of drugs in life processes.
- **Molecular Toxicology:** Study of the role of toxins in life processes.
- **Molecular Chemistry:** Study of the role of chemical processes in life processes.

### Research Projects

- **DNA Replication:** Study of the process of DNA replication.
- **RNA Transcription:** Study of the process of RNA transcription.
- **Protein Synthesis:** Study of the process of protein synthesis.
- **Cell Division:** Study of the process of cell division.
- **Cell Death:** Study of the process of cell death.
- **Cell Signaling:** Study of the process of cell signaling.
- **Cell Adhesion:** Study of the process of cell adhesion.
- **Cell Migration:** Study of the process of cell migration.
- **Cell Differentiation:** Study of the process of cell differentiation.
- **Cell Proliferation:** Study of the process of cell proliferation.
- **Cell Apoptosis:** Study of the process of cell apoptosis.

### Courses

**Molecular Biology and Biotechnology:** Focus on the molecular basis of life processes and the role of enzymes in catalyzing chemical reactions.

**Cell Biology:** Study of the structure and function of cells.

**Molecular Genetics:** Focus on the genetic basis of life processes.

**Molecular Evolution:** Study of the evolution of life processes.

**Molecular Immunology:** Focus on the role of the immune system in life processes.

**Molecular Microbiology:** Study of the role of microorganisms in life processes.

**Molecular Virology:** Study of the role of viruses in life processes.

**Molecular Pathology:** Study of the role of disease in life processes.

**Molecular Pharmacology:** Study of the role of drugs in life processes.

**Molecular Toxicology:** Study of the role of toxins in life processes.

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### Research Projects

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Bachelor of Music

COURSE REQUIREMENTS
All baccalaureate candidates in music must satisfy the College of Liberal Arts General Education Requirements, except that B.M. candidates are exempt from the historical perspectives requirement. The following School of Music course requirements also must be met:

25:1-4 Music Theory and Harmony I-V 16 s.h.
25:1-7 Group Instruction in Piano I or the successful completion of proficiency exams I and II 2 s.h. (Registration to Group Instruction in Piano I is contingent upon 25:1-2 Music Theory I, and II, unless exempted by proficiency exams, which students must take while enrolled in 25:1-2. Further students should complete this requirement in their first year of residence, unless exempted by proficiency exams.)
25:74 Recital Attendance (seven recitals required for all candidates for the B.M. degree, but four recitals for music therapy students)
25:107 Techniques of Conducting 2 s.h.
25:144 History of Music I 3 s.h.
25:46 History of Music II 3 s.h.
25:154 Senior Recital (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" in the section of the Catalog Music therapy students must complete either a senior recital or a senior research project.)
At least four semester hours of electives from the following. (The combination of courses 25:155 and 25:154 or more than one course chosen from 25:101, 25:102, 25:245, and 25:344 does not fulfill this requirement.)
25:117 Arranging for Band 3 s.h.
25:155 Composition 3 s.h.
25:145 Counterpoint before 1600 3 s.h.
25:147 Counterpoint after 1600 3 s.h.
25:146 Analysis of Music Literature (600-1750) 3 s.h.
25:149 Analysis of Music Literature (1825-1935) 3 s.h.
25:150 Analysis of Music Literature (1930-1950) 3 s.h.
25:151 Analysis of Music Literature (1950-Present) 3 s.h.
25:152 Analysis of Music Literature Special Topics 2 s.h.
25:153 Keyboard Harmony 2 s.h.
25:157 Orchestration 2 s.h.
25:245 Chamber Choir 2 s.h.
25:101 Jazz Improvisation I 2 s.h.
25:102 Jazz Improvisation II 2 s.h.
25:243 Jazz Improvisation III 2 s.h.
25:244 Jazz Improvisation IV 2 s.h.

APPLIED MUSIC
Four years of applied music are required. Instruction is sequenced into two levels, lower and upper. Students must achieve upper-level status before they can give the senior recital.

Determination of readiness for upper-level applied music is based on the student's area of instruction. Students are allowed a maximum of 6 semesters (not including summer) in the lower-level applied instruction. Those who want to continue lessons beyond the maximum allowable lower-tier registration must do so under the nonmajor category.

INCLUSIVE PARTICIPATION
Students with disabilities are eligible to choose a major ensemble for each session of residence. During the semester sessions, students must be available for ensemble participation as needed. Ensemble assignments are made at the discretion of the major teacher and ensemble director. Spring, majors participate in University Orchestras and/or Chamber Orchestras. Keyboard majors may substitute accompanying for major ensemble participation for two semesters during their junior- and/or senior years, with the consent of their advisor. Composition and musicology majors may, with their advisor's permission, substitute other ensemble.

Any requests for adjustment of this requirement should be submitted in writing to the review committee consisting of the ensemble directors, the advisor, the major teacher, and a representative from the director's office. The committee will respond at the end of each early registration period.

MAJORS AND MINORS
25:142 Cameron Singers 0 s.h.
25:181 University Choir 0 s.h.
25:196 University Band /Concert Band 0 s.h.
25:185 Concert Band 0 s.h.
25:186 Kantorei 0 s.h.
25:192 Orchestras 0 s.h.

ELECTIVES
Students may take elective advanced in performance (including chamber music and piano literature), theory, composition, music education, music history, music literature, orchestration, and conducting.

Performance Major
Performance majors are available in each of the ensemble 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, to be chosen from a list of electives unique to each performance major area. Course listings for each of the respective areas are available from the music office.

Jazz Studies Emphasis
Students are admitted to this program only by audition, which occurs after they complete the freshman year. When auditioned, they are assigned a jazz music advisor 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 17 semester hours of jazz courses for performance majors, in addition to 17 semester hours for music courses for performance majors.
those in the music education certification program. Students in the last two studies must complete a weekly jazz seminar.

Music Therapy

Admission to the program in music therapy is based on successful completion (grade of C or better) of 23.114 Introduction 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 is an approved off-campus clinical facility. It is required before the completion of the internship, students may apply for a minor in the Music Therapy program and are required to complete 6 hours for the board certification examination. To increase their job opportunities in the education sector, students are encouraged to complete music teacher certification requirements. Complete information on the program is available in the music education office.

Course requirements for the major in music therapy are as follows:

- 25.74 Basic Attendance (4 semester credits)
- 25.04 Music Therapy Procedures (four semester credits, first 1, 2, and 2 semester credits, respectively)
- 25.06 Music Techniques in Special Education and Recreation
- 25.114 Orientation to Music Therapy
- 25.138 Music Therapy Techniques: Atypical Children
- 25.150 Music Therapy Techniques: Adult Clients
- 25.140 Internship in Music Therapy
- 75.144 Psychology of Music
- 75.149 Behavioral Research in Music
- 25.04 Music Therapy Procedures (second project)
- 25.154 Senior Recital

Music therapy students who elect the senior recital option must take four years of applied music and attain superior grades; they also must take 8 semester hours of recital presence. Those who elect the senior research project option must take three years of applied music and attend the recital exam in their fourth year.

Composition Major

Applicants for admission submit samples of creative work for evaluation by the composition faculty. Upon admission to the program, students are assigned a faculty advisor. Accomplished students may gain admission as entering freshmen. In such cases the approval of submitted work waives the necessity of a performance audition. Those who elect the senior research project option must audition for the senior recital exam.

Students in the general requirements of the Bachelor of Music degree as stated in the catalog. Beyond these requirements, composition majors must complete additional coursework in composition, music theory, and electives. An appropriate plan of study is designed by students in consultation with their advisors.

The Bachelor's Thesis (25-99) replaces the recital required of applied music majors and consists of one or more compositions approved by a committee of three faculty members and performed on regularly scheduled School of Music recitals.

Bachelor of Arts

The B.A., with 50 semester hours of allowable music credit, is offered for all performance majors based upon the B.M. degree as well as music history and composition. The B.A. is not available in the music therapy, or bio music programs. Students may earn teacher certification if they complete the curriculum listed for the appropriate certification program (e.g., strings, brass, woodwinds, and percussion: vocals and keyboard; see "Teacher Certification (Music Specialist)."

Specific course requirements vary for each of the available majors under the B.A. degree, although at College of Liberal Arts General Education Requirements must be met for each. Students should check with their advisors, the area advisor, or the world office for specific program requirements.

Teacher Certification
(Music Specialist)

Areas of concentration in music education are instrumental music, vocal music, and music in special education. In addition to the B.A. or B.M. requirements in music and liberal arts, certification to teach music in Iowa schools requires satisfactory completion of specific requirements in the area of concentration. Requirements in the instrumental and vocal areas are listed below. The general requirements are listed under "Curriculum and Instruction" in the College of Education section of the catalog.

INSTRUMENT MAJORS

Instruction in performance skills and vocal majors take one year of 25:23 Cello: cello and bass majors take one year of 25:21 Violin: 25:100 Class Strings: cello, viola, and bass; violinists take violin and cello; violists take viola and bass; bassists take viola and cello.

- 25:143 Instrumental Techniques (normal class and quarter)
- 25:108 Instrumental Conducting
- 25:150 String Methods and Materials
- 25:90 Introduction to Teaching Music
- 75:144 Methods and Materials Elementary School Instrumental Music
- 25:101 Observation and Laboratory Practice in the Secondary School

- 25:102 Senior Seminar: Year One
- 25:187 Seminar: Curriculum and Student Teaching

String majors preparing for music teacher certification must pass the proficiency examination of 25:71-72 Group Instruction in Piano I.

BRASS, WOODWIND, AND PERCUSSION MAJORS

Brass, woodwind, and percussion majors in music education participate in a concert band each semester and in marching band for two fall sessions during the first two years in residence at the University. Exceptions to this policy must be approved by the music education advisor and the director of music.

The following courses are required.

- 25:143 Instrumental Techniques
- 25:150 Marching Band Techniques
- 25:150 Jazz Band Techniques
- 75:144 Methods and Materials: Elementary School Instrumental Music
- 25:193 Introduction to Teaching Music
- 25:138 Rhythmics: Band Instruments
- 25:140 Band Methods and Materials
- 25:145/25:158 Instrumental Conducting
- 25:171 Observation and Laboratory Practice in the Secondary School
- 25:176 Special Area Student Teaching

- 25:177 Student Teaching

Students preparing for music teacher certification must pass the proficiency examinations of 25:71-72 Group Instruction in Piano II.

VOCAL AND KEYBOARD MAJORS

Vocal performance majors should consult the music office for recommendations.

- 25:139 Child and Adolescent Voice Production
- 25:147 Jazz Band Techniques
- 25:148 Choral Conducting and Literature
- 25:115/25:116 Dictation for Singers
- 25:143 Methods and Materials: Elementary School General Music
- 25:176 Special Area Student Teaching
- 25:177 Seminar: Curriculum and Student Teaching

- 25:178 Student Teaching

Vocal and keyboard majors preparing for music teacher certification must pass the proficiency examination of 25:71-72 Group Instruction in Piano II. In addition, keyboard majors should register for 25:17-17 Non-Major Piano for two semesters. Vocal majors should register for 25:18 Non-Major Piano for two semesters.

REFRIGERATION MAJORS (NONVOCAL)

Keyboards who elect to teach in the music department must complete the requirements in either the brass/woodwind/percussion or string areas and pass the proficiency examination of 25:71-72 Group Instruction in Piano I.

- 25:143 Instrumental Techniques
- 25:108 Marching Band Techniques
- 25:150 Jazz Band Techniques
- 25:150 Instrumental Conducting
- 25:150 String Methods and Materials
- 25:90 Introduction to Teaching Music
- 75:144 Methods and Materials: Elementary School Instrumental Music
- 25:101 Observation and Laboratory Practice in the Secondary School
- 25:102 Senior Seminar: Year One
- 25:187 Seminar: Curriculum and Student Teaching

String majors preparing for music teacher certification must pass the proficiency examination of 25:71-72 Group Instruction in Piano II.
Honors

Freshman and sophomore music majors with an average of at least 3.20 are invited to become members of the College of Liberal Arts Honors Program (see College of Liberal Arts introductory section of the Catalog). They also may take part in the honors programs of the School of Music. Some entering freshmen are invited on the basis of their high school record and ACT scores.

Throughout undergraduate residence, honors music students may take advantage of admissiion to honors sections of courses in the school and in the college, and may seek honors designations for any course with consent of the instructor.

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, a minimum of 3 semester hours of such work must be in 25-97 Honors in Music. Honors projects for which credit is given in 25-97 include honors performance (solo and/or ensemble); honors composition (for 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 assigned projects in other courses, nor may they be required for graduation (e.g., 24-154 Studio Recital).

Honors students in music are encouraged to take graduate-level courses. Advanced course work in music history, music theory, and musicology is especially recommended. Honors committee appointed by the honors advisor and the student’s faculty advisor evaluates the student’s work.

Consult the music honors advisor for more information.

Financial Aid

A number of music activity scholarships are available (see College of Liberal Arts introductory section of the Catalog).

Minor

Students may minor in music by completing 15 semester hours of music courses, at least 9 of which must be advanced courses. A complete list of advanced courses is available from the music office.

Graduate Programs

Enrolling graduate students must take the School of Music Musicology examination to music theory (history, analysis, signal, and composition) and history and literature before registering. The admittance examination is given each session on the two days (excluding Sunday) before registration. Students with deficiencies in theory must register for 25:11 Review Theory. A brief describing the general content of these sets is available from the director’s office, School of Music. General graduate admission, degree, and examination requirements are stated in the Graduate College section of the Catalog.

Theory Pedagogy Minor

Candidates for graduate degrees in music may elect a minor in music theory pedagogy by completing the following courses:

25:145 Counterpoint before 1600 3 s.h.
25:147 Composition after 1600 3 s.h.
25:236 Methods and Techniques of Teaching Basic Theory 3 s.h.
25:347 Seminar in Music Theory Research 3 s.h.

Admission

Before applicants are considered for admission, they must submit supporting materials in their indicated area of concentration, as follows:

Composition—representative music scores

Music education—system of recommendations

Performance (including conducting)—audition

Musicology—research papers, or these, seminars, research rotation.

Pedagogy—contact School of Music

Information sheet specific admission and curricular requirements for each area is available from the director.

Master of Fine Arts

The M.F.A. is a terminal degree for students who wish to pursue a career in music performance. It requires a minimum of 60 post-baccalaureate credit hours.

In addition to the entrance and continuing requirements for the Master of Arts degree, students must complete a minimum of 20 post-baccalaureate semester hours. Information about specific admission and curricular requirements for each degree are available from the School of Music. All curricular work must include the following requirements:

25:141 Introduction to Graduate Study in Music 3 s.h.
25:144 History and Theory 3 s.h.


One semester course in music performance.

One seminar course in musicology.

25:104 Advanced History and Literature of Musical Art or satisfactory advisory examination

25:105 Advanced History and Literature of Musical Art or satisfactory advisory examination

25:106 Advanced History and Literature of Musical Art or satisfactory advisory examination

Two additional courses in musicology.

One course in music performance.

Two additional courses in musicology.

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area requirements is available from the School of Music office.

Carnegie students must participate in a major ensemble during each term of residence unless excused by their director for a minor of greater ensembles, see "Ensemble Participation" in the "Music Department" section of the Catalog. During the summer session, students should be available for ensemble participation as needed. Keyboard majors may substitute an equivalent accomplishment in place of a major ensemble, at their advisor's discretion. Theory, composition, musicology, and music education majors may, with their advisor's consent, substitute other ensembles.

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 wish to achieve a professional level of musical performance. They are required to audition in their major performance area.

Information about specific admission and curricular requirements for each area is available from the director's office.

Doctor of Musical Arts

Requirements for the D.M.A. degree in performance and pedagogy are the general doctoral requirements of the school, except that the D.M.A. dissertation consists of three or more recitals and a concert performance with orchestras or other appropriate ensembles. Vocalists may substitute the execution of one or more major roles in a large-scale work for one of their recitals. Conductors present two programs.

D.M.A. candidates also must complete a scholarly investigation of limited scope in a written essay or thesis.

Admissions

Before students are considered for admission to a doctoral program, they must have submitted supporting materials in their indicated area of concentration, as follows:

- Composition—representative music scores
- Theory—analytical or research papers
- Music education—research papers
- Music literature—research papers and auditions
- Performance (including conducting)—audition

Music History and Musicology—research papers or theses, letters of recommendation

Graduate Awards

Qualified graduate students are invited to apply for teaching and research assistantships. Inquiries should be directed to the School of Music.

Music for Nonmajors

Courses particularly recommended for students who are not majoring in music but who are interested in the subject include the following.

Physical facilities also include a combined rare book and microform collection and space for microfilm readers, typewriters, and videotape machines.

Courses

General

2006 Cooperative Education Internship 0 a.h.
2135 Masterpieces of Music I 3 a.h.
2135 Masterpieces of Music II 3 a.h.
2135 Masterpieces of Music III 3 a.h.
2135 Masterpieces of Music IV 3 a.h.
2135 Masterpieces of Music V 3 a.h.
2135 Masterpieces of Music VI 3 a.h.
2135 Masterpieces of Music VII 3 a.h.
2135 Masterpieces of Music VIII 3 a.h.
2135 Masterpieces of Music IX 3 a.h.
2135 Masterpieces of Music X 3 a.h.
2135 Masterpieces of Music XI 3 a.h.
2135 Masterpieces of Music XII 3 a.h.
2135 Masterpieces of Music XIII 3 a.h.
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2135 Masterpieces of Music XC 3 a.h.
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2135 Masterpieces of Music LXXXI 3 a.h.
2135 Masterpieces of Music LXXXII 3 a.h.
2135 Masterpieces of Music LXXXIII 3 a.h.
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253:303 Advanced History and Literature of Music 3 a.h.
Corequisites: 253:301.
Note: 253:303 25:309 and 25:313 25:314 deal with periods and special topics in music history; they are not offered every year.
253:305 Medieval Music 3 a.h.
253:306 Renaissance Music 3 a.h.
253:307 Seventeenth-Century Music 3 a.h.
253:308 Eighteenth-Century Music 3 a.h.
253:309 Nineteenth Music 3 a.h.
253:310 Major Composers 3 a.h.
253:314 Music of Greece 3 a.h.
253:315 The History of Musical Instruments 3 a.h.
253:316 Principles of Conducting and Maintenance of Keyboard Instruments 3 a.h.
253:320 Introduction to Musicology 3 a.h.
253:321 Introduction to Graduate Study in Music 3 a.h.
253:322 Advanced Ethnomusicology and Reference Materials 4 a.h.
253:323 Historical Music Notation I 4 a.h.
253:324 Historical Music Notation II 4 a.h.
253:330 Seminar in Musicology 3 a.h.
253:361 Survey of Latin American Music 3 a.h.
253:362 Survey of European Music 3 a.h.
253:363 Survey of British Music 3 a.h.
253:364 Survey of American Music 3 a.h.
253:365 Survey of African Music 3 a.h.
253:366 Survey of Indian Music 3 a.h.
253:367 Survey of Middle Eastern Music 3 a.h.
253:368 Survey of East Asian Music 3 a.h.
253:369 Survey of Australian and New Zealand Music 3 a.h.
253:370 Survey of Scandinavian and Baltic Music 3 a.h.
253:371 Survey of Slavic and Baltic Music 3 a.h.
253:372 Survey of Turkish and Caucasian Music 3 a.h.
253:373 Survey of Hebrew and Oriental Music 3 a.h.
253:375 Survey of Indian and Mesoamerican Indian Music 3 a.h.
253:376 Survey of Philippine Music 3 a.h.
253:381 Survey of Latin American Music 3 a.h.
253:382 Survey of African-American Music 3 a.h.
253:383 Survey of Classical Music 3 a.h.
253:384 Survey of Popular Music 3 a.h.
253:385 Survey of Contemporary Music 3 a.h.
253:386 Survey of Electronic Music 3 a.h.
253:387 Survey of Jazz 3 a.h.
253:388 Survey of Blues 3 a.h.
253:390 Survey of Rock Music 3 a.h.
253:391 Survey of Pop Music 3 a.h.
253:392 Survey of Rap Music 3 a.h.
253:393 Survey of Hip-Hop Music 3 a.h.
253:394 Survey of Reggae Music 3 a.h.
<table>
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<tr>
<th>Undergraduate Major</th>
<th>Lower Level</th>
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<th>Upper Level</th>
<th>Advanced Level</th>
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<tr>
<td>Lower Level</td>
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<td>25.64 Upper Level</td>
<td>25.74 Major Courses</td>
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<td>Major Voice</td>
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<td>25.74 Major Theatre</td>
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<td>Major Broadcast</td>
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<td>25.64 Major Broadcast</td>
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<td>Major Film</td>
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<td>25.64 Major Film</td>
<td>25.74 Major Film</td>
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<tr>
<td>Minor Field</td>
<td>Students pay $55 per course per semester for instruction to their minor field of performance. Minor programs may extend instruction to courses in other departments as consistent with the overall Liberal Arts and Sciences program.</td>
<td>Instructional courses, at instructor's option.</td>
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</tbody>
</table>
One course on issues in legal theory, chosen from:
310-117 The Politics of Civil Rights and Liberties
310-118 Law and Social Change
310-174 Women and the Law
144-202 Legal Control of Sexuality and Sexual Contact
144-210 Hard Cases: Science Policy and Value
144-211 Native American Law
144-212 Law, Marriage, and Public Policy
8-259 Law and Lawyers in Literature
Integration
The following are required:
Theory of Inquiry
One course chosen from:
25-104 Introduction to Philosophy of Science
25-190 Philosophy of the Human Sciences
30-100 Understanding Political Research
30-180 Honor Seminar on the Study of Politics
Senior Seminar
144-144 Seminar: Philosophies and Ethics of Politics, Law, and Economics
Courses
144-144 Seminar: Philosophies and Ethics of Politics, Law, and Economics
3 s.h.
Interdisciplinary: towns that trace interactions between philosophy, political science, law, economics. Open only to seniors in POLSCI program.
144-201 Jurisprudence
3 s.h.
144-202 Issues in Law and Philosophy
144-203 Litigation, Social Science and Social Change
144-205 Legal Reasoning
144-110 Law in American History I
3 s.h.
144-111 Law in American History II
3 s.h.
144-104 Foundations of Anglo-American Law
3 s.h.
311-105 American Constitutional Law
3 s.h.
144-200 Legal History Seminar
144-207 Modern Constitutional History
144-208 Legal Control of Sexuality and Sexual Minorities

Honors Program
The department administers as honors program for undergraduate students of superior ability. In order to be admitted to the honors program in philosophy, a student must be registered in the University Honors Program and must have taken and passed at least three philosophy courses for the major. In order to graduate with honors in philosophy, the student must complete the regular requirements for an honors major.
undergraduate major in philosophy with a grade-point average of 3.0 or higher. In addition, philosophy courses and must write an acceptable thesis on a subject in philosophy that interests him or her. The director of undergraduate studies can provide more information.

Minor
In order to achieve a minor in philosophy, a student must complete a minimum of 15 semester hours in philosophy courses. Of these, at least 6 semester hours must be in courses that are numbered above 100 and are taught in the Department of Philosophy at The University of Iowa. The director of undergraduate studies can provide more information.

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 and epistemology, history of philosophy, logic and philosophy of science, and ethics. The master's degree program is available. 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 by the time the degree is completed. The dissertation for the doctoral program is a formal work that is the student's major field of study. 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. Also required is a written comprehensive examination consisting of a dissertation area examination, a special area examination, and a provincial and comprehensive examination. The comprehensive examination may be taken only after the student is shown competence in French, German, Greek, or Latin. 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.
Primarily for Graduates
All may be repeated except 20:220.
20:221 Session: Philosophy of Language 5 s.h.
20:222 Session: Metaphysics 4 s.h.
20:223 Session: Epistemology 4 s.h.
20:224 Session: Philosophical Analysis 4 s.h.
20:225 Session: Philosophy of Science 3 s.h.
20:226 Session: Ethics 3 s.h.
20:227 Session: Ancient Philosophy 3 s.h.
20:228 Session: Medieval Philosophy 3 s.h.
20:229 Session: Modern Philosophy 3 s.h.
20:424 Research: Value Theory 3 s.h.
20:425 Research: Ethics and Epistemology 3 s.h.
20:426 Research: Logic and Philosophy of Science 3 s.h.
20:427 Research: History of Philosophy 3 s.h.
20:435 Thems 3 s.h.

PHYSICAL EDUCATION AND SPORTS STUDIES
Chair: Bruce Stetson
Professors: Sue Bond, David R. Cassie
Associate professors: Marjorie C. Ito
Graduate assistants: K. F. Gaul, T. G. Keolian, M. Casella
Graduate assistant: Margaret L. Scalli
Visiting assistant professors: Steven E. Teague
Visiting assistant professor: Mark T. Janke
Adjunct professors: D. R. Dutton

Attestations in Recreation: Beth Rigby, Gayle Rada
Attestations in Exercise Science: M. T. M. Casella, D. L. Gaul, D. L. Gaul, J. M. Casella

Requirements: 3 s.h.

Physical Education and Sports Studies 3 s.h.

12:111 Metaphysics 3 s.h.
12:112 Epistemology 3 s.h.
12:118 Philosophy of Mind 3 s.h.
12:119 Philosophy of Language 3 s.h.
12:113 Mathematical Logic 3 s.h.
12:114 Principles of caloric thermodynamics in Aristotelian, Carnapian, and Humean systems 3 s.h.
12:115 Medieval Logic 3 s.h.
12:116 Formal Systems 3 s.h.
12:117 History of philosophy and its philosophy of science 3 s.h.
12:118 Philosophy of Natural Science 3 s.h.
12:119 Principles of methodological matters, methods, and evidence 3 s.h.
12:120 Topics in Philosophy of Science 3 s.h.

Undergraduate Programs

It is recommended that all students in physical education satisfy the General Education Requirement in natural science by taking Chemistry 11 or 413. Biology Sciences 210, 215, or 215A; and in addition to a minimum grade of B in all science courses, with implications for the performance and teaching of health and sports activities.

The undergraduate programs also require the student to complete the requirements for the Bachelor of Science degree.

Health Promotion Specialization

PROGRAM REQUIREMENTS

1. General Education 3 s.h.
2. Principles of Chemistry I 3 s.h.
3. Exercise Science 210, 215, or 215A 3 s.h.
4. Principles of Animal Behavior 3 s.h.
5. Principles of Human Nutrition 3 s.h.
6. Principles of Human Nutrition 3 s.h.

Requirements: 22 s.h.

20:112 Human Anatomy 3 s.h.
20:113 Physiology 3 s.h.
20:114 Exercise Physiology for Trainers 3 s.h.
20:115 Physical Education Skills 4 s.h.
20:116 Fitness and Wellness for Life 2 s.h.
20:117 Contemporary Issues in Health Promotion 3 s.h.
20:118 First Aid and CPR (or current certification) 2 s.h.
20:119 Preventive Strategies for Sports/Work/Wound 3 s.h.
20:120 Stress Management 3 s.h.
20:121 Exercise Testing and Exercise Testing 3 s.h.
20:122 Introduction to Nutrition 3 s.h.
20:123 Health Promotion in Corporate, Hospital, and Fitness Settings 3 s.h.
20:124 Computer Application for Park and Recreation Management 3 s.h.
20:125 Demographic Experiences 3 s.h.
20:126 Internship Seminar 0 s.h.
20:127 Internships 6-12 s.h.

Acceptance into an internship program is based on the following criteria:

1. A 2.0 minimum grade point average in 27:140, 28:143, and 124:1A, with a minimum grade of C in each;
2. A 2.50 minimum grade point average on all University of Iowa course work;
3. Completion of all requirements for the major.

PROGRAM ELECTIVE AREAS

Students must complete 9 semester hours from one of the major areas (listed below) in the Bachelor of Science degree.

Health Fitness Specialist

27:157 Aerobic Exercise 3 s.h.
27:158 Aquatic Activity 3 s.h.
27:162 Rest and Sleep 3 s.h.

Health Promotion and Prevention

20:107 Exercise for Special Populations 3 s.h.
20:108 Health Promotion and Prevention 1 s.h.
20:109 Nutrition for the Elderly 3 s.h.
20:110 Nutrition for the Elderly 3 s.h.
20:111 Nutrition for the Elderly 3 s.h.
20:112 Aging and Leisure 3 s.h.

Health Education

71:116 Health Behavior 3 s.h.
71:121 Health Psychology 3 s.h.
71:122 Health Psychology 3 s.h.
71:123 Microcounseling 3 s.h.
71:99 Community for Related Professionals 3 s.h.
40:145 Year-End Education 3 s.h.
40:165 Introduction to Substance Abuse 3 s.h.
40:166 Introduction to Substance Abuse 3 s.h.
40:167 Introduction to Substance Abuse 3 s.h.
40:169 Introduction to Substance Abuse 3 s.h.
40:170 Introduction to Substance Abuse 3 s.h.
40:171 Introduction to Substance Abuse 3 s.h.
40:172 Introduction to Substance Abuse 3 s.h.
40:173 Introduction to Substance Abuse 3 s.h.
40:174 Introduction to Substance Abuse 3 s.h.
40:175 Introduction to Substance Abuse 3 s.h.
40:176 Introduction to Substance Abuse 3 s.h.
40:177 Introduction to Substance Abuse 3 s.h.
40:178 Introduction to Substance Abuse 3 s.h.
40:179 Introduction to Substance Abuse 3 s.h.
40:180 Introduction to Substance Abuse 3 s.h.
40:181 Introduction to Substance Abuse 3 s.h.
40:182 Introduction to Substance Abuse 3 s.h.
40:183 Introduction to Substance Abuse 3 s.h.
Health Management
64.1 Introduction to Financial Accounting 3 s.h.
64.2 Managerial Cost Accounting 3 s.h.
64.3 Principles of Microeconomics 3 s.h.
64.4 Principles of Macroeconomics 3 s.h.
64.17 Entrepreneurship and New Business Formation 3 s.h.
64.128 Managing the New or Small Business 3 s.h.
64.147 Introduction to Law 3 s.h.
64.100 Administrative Management 3 s.h.
64.160 Introduction to Marketing 3 s.h.
104:134 Introduction to Planning and Design of Recreation and Park Areas and Facilities 3 s.h.
104:130 Park and Recreation Facility Management 3 s.h.
or
104:139 Managing Commercial Recreation Enterprises 3 s.h.

Teacher Certification Specialization
The following academic, activity, and teacher certification courses are required.

ACADMK
28:154 Laboratory in Teaching of Physical Activities 2 s.h.
28:155 Teaching of Dance 2 s.h.
28:77 First Aid and CPR 2 s.h.
or
Red Cross or comparable certification is first aid and CPR
27.53 Human Anatomy 3 s.h.
27:108 Motor Learning and Motor Control 3 s.h.
28:74 Issues in Health Education 3 s.h.
28:43 Psychosocial Dimensions of Physical Activity 3 s.h.
28:160 Administration of Physical Education and Athletics 2 s.h.
28:105 Physical Education for the Handicapped 3 s.h.
27:140 Exercise Physiology for Practitioners 3 s.h.
28:467 Measurement and Evaluation in Physical Education 3 s.h.
28:164 Theory of Sport in the United States 2 s.h.
28:164 Sport in the Western World: Greeks to Present 3 s.h.
27:81 Kinesiology 3 s.h.
or
27:107 Biomechanics of Physical Education 3 s.h.

ACIVITY
Students must demonstrate competence in each of the following courses and may earn a maximum of 10 semester hours in the following activities. Students may take proficiency tests for many courses and may test out of a maximum of 7 semester hours. At least 7 semester hours must be earned through class participation.

285:1 or 285:2 Swimming 1 s.h.
28:13 Tennis 1 s.h.
28:13 Golf 1 s.h.
28:14 Tack and Field 1 s.h.
28:15 Self Defense, Cooperative Games, Innovative Games, Team Handball 1 s.h.
28:16 Judo and Jujitsu 1 s.h.
28:17 Recreational Skills 1 s.h.
28:20 Volleyball 1 s.h.
28:20 Field Sports (Flag football, soccer, softball) 1 s.h.
28:23 Softball 1 s.h.
28:24 Basketball 1 s.h.
28:25 Basic Dance Skills 2 s.h.
28:40 Theory and Principles of Weight Training 1 s.h.
*Proficiency tests are not available for these activities.

TEACHER CERTIFICATION
78:174 General and Motor Development (same as 28:71) 2 s.h.
78:172 Methods and Materials in Elementary Physical Education Practice—Elementary School 3 s.h.
78:172 Special Area Students Teaching 3 s.h.
78:150 Human Relations for the Classroom Teacher 3 s.h.
77:175 Educational Psychology and Measurement 3 s.h.
75:97 Instructional Strategies and Design in Physical Education 3 s.h.
75:100 Issues in Education 2 s.h.
75:146 Methods of Secondary Physical Education 3 s.h.
75:187 Seminar: Curriculum and Student Teaching 1 s.h.
75:191 Observation and Laboratory Practice in the Secondary School 6 s.h.
79F:02 Introduction to Microcomputing for Teachers 1 s.h.

COACHING ENDORSEMENT
The Iowa Department of Education requires that athletic coaches be certified. The following program has been approved by the Iowa Department of Education and is available to students who also complete the requirements for a teaching major.
27:53 Human Anatomy 3 s.h.
27:57 Basic Athletic Training 3 s.h.
28:103 Administration of Physical Education and Athletics 2 s.h.
28:125 Theory of Coaching 2 s.h.
28:77 First Aid and CPR 2 s.h.
or
Red Cross or comparable certification in first aid and CPR
27:140 Exercise Physiology for Practitioners 3 s.h.
27:141 Exercise Physiology 3 s.h.
28:77 Mortal Growth and Motor Development 2 s.h.
76:156 Coaching Practice A 1 s.h.

HEALTH ENDORSEMENT
The following program has been approved by the Iowa Department of Education for certification to teach health. The following courses are required.
27:53 Human Anatomy 3 s.h.
28:77 Human Growth and Motor Development 2 s.h.
28:74 Issues in Health Education 3 s.h.

104:100 Introductory Nutrition 3 s.h.
28:77 First Aid and CPR 2 s.h.
27:140 Exercise Physiology for Practitioners 3 s.h.
45:56 NonPrescription Drugs 2 s.h.
27:120 Substance Use and Abuse 2 s.h.
27:140 Exercise Physiology for Practitioners 3 s.h.
27:141 Exercise Physiology 3 s.h.
31:152 Health Psychology 3 s.h.
71:112 Human Immunology 3 s.h.
76:180 Methods and Administration of School Health Programs 3 s.h.

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.
Honors students in physical education take
28:93 Honors Seminars, complete a readings or research project under supervision of a physical education faculty member, and prepare a paper summarizing project results. To be eligible for honors study in physical education, students must have a 3.20 minimum grade-point average at the beginning of the junior or senior year, when the honors courses are taken. To qualify for the honors degree, students must maintain a 3.20 minimum grade-point average through the remainder of their degree work.

Minor in Physical Education
The minor in physical education requires at least 15 semester hours of credit with a 2.00 minimum grade-point average. Twelve of the 15 semester hours must be taken at The University of Iowa in advanced courses. Students may choose from the following courses.
27:53 Human Anatomy 3 s.h.
27:81 Kinesiology 3 s.h.
27:107 Biomechanics of Physical Education 3 s.h.
27:140 Exercise Physiology for Practitioners 3 s.h.
28:74 Issues in Health Education 3 s.h.
28:75 Contemporary Issues in Health Promotion 3 s.h.
28:43 Psychosocial Dimensions of Physical Activity 3 s.h.
28:132 Administration of Sport/Wellness Programs 3 s.h.
or
28:103 Administration of Physical Education and Athletics 3 s.h.
28:164 History of Sport in the United States 3 s.h.
or
28:174 Sport in the Western World: Greeks to Present 3 s.h.
Graduate Programs
The Department of Physical Education and Sports Studies has been a pioneer in providing graduate physical education programs for women, especially at the doctoral level. It has awarded more than 500 master's degrees and more than 200 doctoral degrees during the past 50 years. Its graduates have promoted distinguished service through teaching, coaching, research, administration, and other leadership roles in physical education, health, dance, and athletics. The department's proud heritage of producing leaders has been furthered by recent graduates who continue to encourage high aspirations of the young women and men it serves.

The curriculum assumes previous education in the respective fields. A program is planned individually with consideration given to the student's previous education and anticipated career. Completion of the graduate degree usually leads to teaching, research, coaching, or administration in a school or university.

The outstanding characteristics of the graduate programs are the flexibility of program planning for the individual student and the diversity of available research areas. Attendance at summer sessions is helpful in obtaining diverse instruction.

Graduate students work primarily in the Department of Physical Education and Sports Studies, but the resources of the entire University are available as needed. Work outside the department provides a broad view and enrichment for selected specialization of master's and doctoral degree level.

Interdepartmental courses in many areas and are strongly encouraged for students specializing in administrative coaching, and health promotion.

The graduate student group is cosmopolitan and international.

Master of Arts
The M.A. is awarded on completion of at least 20 semester hours for graduate work, including thesis, or 55 semester hours of course work without thesis. The curriculum leads to teaching, administration, coaching certification, or preparation for advanced degree work.

Core Requirements
Students must demonstrate competence in philosophy of science and methodology. Competence may be demonstrated by completion of a course at the undergraduate or graduate level or satisfactory performance in a written examination. The following courses are required:

28-205 Techniques of Research 3 s.h.
28-305 Seminar: Perspective in Human Movement 2 s.h.
28-405 Thesis (M.A. students on thesis option) 3 s.h.
27-108 Introduction to Statistical Methods (or equivalent)

The sport studies core consists of six areas: philosophy of sport, psychophysics of sport, sociology of sport, and history of sport. Students are required to take one course from at least three of these areas. Students in the health promotion program must choose to select courses from only two areas. The following courses satisfy the sport studies core requirements:

28-157 Sociology of Sport 3 s.h.
28-155 Physiological Psychology 3 s.h.
28-156 Public Policy in Sport 3 s.h.
28-158 History of Sport 3 s.h.
28-160 Sports and the Media 3 s.h.
28-161 Sociology of Sport 3 s.h.

Program Options
M.A. students may elect a general sport studies curriculum or a specialization in administration of physical education and athletics, health promotion, coaching, sociology of sport, or sport psychology.

In addition to the required courses listed above, students must select the core courses in their area of specialization as defined below and electives selected in consultation with the adviser.

Adaptation of Physical Education and Athletics
28-156 Educational Psychology 3 s.h.
28-320 Advanced Athletic Administration 3 s.h.
28-425 Special Problems 3 s.h.

Health Promotion
28-160 Health and Fitness: Research Program Models 2 s.h.
28-165 Health and Nutrition 2 s.h.
28-141 Exercise Physiology/Laboratory 3 s.h.
101-206 Cardiopulmonary 4 s.h.
101-206 Health Promotion and Cardiopulmonary Therapies 2 s.h.
31-152 Health Psychology 3 s.h.
31-250 Introduction to Health and Behavioral Science 3 s.h.

Coaching
All students must have or earn a coaching endorsement.

28-150 Physical Education Research on Women in Sport 2.5 s.h.
28-165 Internships 1.5 s.h.
28-218 Advanced Coaching 2 s.h.

Sociology of Sport
28-153 Sociology of Women in Sport 2.5 s.h.
28-156 Inequality in Sport 3 s.h.
28-156 Sports and the Media 2.5 s.h.
28-340 Seminar in Sociology of Sport (may be repeated) 3 s.h.
28-348 A Cultural Analyses of Sport 3 s.h.

Sport Psychology
28-113 Stress Management 3 s.h.
28-321 Research in Sport Psychology 3 s.h.
28-351 Selected Issues in Social Psychology and Physical Activity (may be repeated) 3 s.h.

Psychological services 6 s.h.

Sport Studies
Students in the general sport studies program must take at least one course from each of the four core areas. In addition, students must take at least two courses in the following areas: Administration of Athletics, or athletic education, or health promotion.

Bachelor of Philosophy
All doctoral students must complete a minimum of 72 semester hours of graduate work, including general requirements for the master's degree and credit for the dissertation.

Procedures
Competence in the areas noted under the M.A. program is also required for the doctoral program. Examinations in these areas must be extended as early as possible.

Research Tools
All doctoral students are required to take a statistics course at an appropriate level at The University of Iowa. Students may choose either a foreign language or computer science as their second research tool.

The language requirement may be satisfied by taking two semesters of a given language at a minimum grade of C, by passing a Graduate Record Examination (GRE) General Test in a given language, or by passing a Ph.D. language examination.

The computer tool requirement option may be satisfied by taking two semester hours as approved by the departmental graduate committee.

Required Courses
28-300 Research Forum 2 s.h.
28-352 Seminar: Perspectives in Human Movement 2 s.h.
28-405 Thesis: Ph.D. 2 s.h.

Specialization
Students must complete a specialization of 30 semester hours, including coursework; they also must take approximately 20 semester hours in one or more departments other than the Department of Physical Education and Sports Studies. The following specialization areas have been approved: administration of physical education and athletics, psychology of sport, and sociology of sport. Students interested in another area may submit a plan of study for consideration.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 261</td>
<td>Physical Skills Program</td>
<td>1.00</td>
<td>Required for students who want to enhance their general fitness and prepare</td>
</tr>
<tr>
<td>PHYS 262</td>
<td>Physical Education</td>
<td>0.50</td>
<td>for a career in health-related fields, such as nutrition counseling.</td>
</tr>
<tr>
<td>PHYS 263</td>
<td>Course for Students in the School of Medicine</td>
<td>0.50</td>
<td>Designed to meet the needs of medical students.</td>
</tr>
<tr>
<td>PHYS 264</td>
<td>Course for Students in the School of Pharmacy</td>
<td>0.50</td>
<td>Provides an introduction to basic principles of pharmacy.</td>
</tr>
<tr>
<td>PHYS 265</td>
<td>Course for Students in the School of Nursing</td>
<td>0.50</td>
<td>Focuses on the physical and emotional aspects of nursing practice.</td>
</tr>
<tr>
<td>PHYS 266</td>
<td>Course for Students in the School of Dentistry</td>
<td>0.50</td>
<td>Covers the physical and oral health aspects of dental hygiene.</td>
</tr>
<tr>
<td>PHYS 267</td>
<td>Course for Students in the School of Social Work</td>
<td>0.50</td>
<td>Provides an understanding of the physical aspects of social work practice.</td>
</tr>
<tr>
<td>PHYS 268</td>
<td>Course for Students in the School of Education</td>
<td>0.50</td>
<td>Focuses on the physical and educational aspects of teaching.</td>
</tr>
<tr>
<td>PHYS 269</td>
<td>Course for Students in the School of Architecture</td>
<td>0.50</td>
<td>Covers the physical and design aspects of architectural projects.</td>
</tr>
<tr>
<td>PHYS 270</td>
<td>Course for Students in the School of Business</td>
<td>0.50</td>
<td>Focuses on the physical and economic aspects of business management.</td>
</tr>
<tr>
<td>PHYS 271</td>
<td>Course for Students in the School of Engineering</td>
<td>0.50</td>
<td>Provides an introduction to the physical principles of engineering.</td>
</tr>
<tr>
<td>PHYS 272</td>
<td>Course for Students in the School of Arts</td>
<td>0.50</td>
<td>Focuses on the physical and aesthetic aspects of the arts.</td>
</tr>
<tr>
<td>PHYS 273</td>
<td>Course for Students in the School of Sciences</td>
<td>0.50</td>
<td>Provides an understanding of the physical and scientific aspects of science.</td>
</tr>
<tr>
<td>PHYS 274</td>
<td>Course for Students in the School of Law</td>
<td>0.50</td>
<td>Focuses on the physical and legal aspects of legal practice.</td>
</tr>
<tr>
<td>PHYS 275</td>
<td>Course for Students in the School of Theology</td>
<td>0.50</td>
<td>Covers the physical and religious aspects of theological studies.</td>
</tr>
<tr>
<td>PHYS 276</td>
<td>Course for Students in the School of Art History</td>
<td>0.50</td>
<td>Provides an introduction to the physical and historical aspects of art history.</td>
</tr>
<tr>
<td>PHYS 277</td>
<td>Course for Students in the School of Music</td>
<td>0.50</td>
<td>Focuses on the physical and musical aspects of music.</td>
</tr>
<tr>
<td>PHYS 278</td>
<td>Course for Students in the School of Dance</td>
<td>0.50</td>
<td>Provides an introduction to the physical and dance aspects of dance.</td>
</tr>
<tr>
<td>PHYS 279</td>
<td>Course for Students in the School of Theatre</td>
<td>0.50</td>
<td>Focuses on the physical and theatrical aspects of theatre.</td>
</tr>
<tr>
<td>PHYS 280</td>
<td>Course for Students in the School of Film</td>
<td>0.50</td>
<td>Provides an introduction to the physical and cinematic aspects of film.</td>
</tr>
<tr>
<td>PHYS 281</td>
<td>Course for Students in the School of Television</td>
<td>0.50</td>
<td>Focuses on the physical and electronic aspects of television.</td>
</tr>
<tr>
<td>PHYS 282</td>
<td>Course for Students in the School of Radio</td>
<td>0.50</td>
<td>Provides an introduction to the physical and electronic aspects of radio.</td>
</tr>
<tr>
<td>PHYS 283</td>
<td>Course for Students in the School of Print</td>
<td>0.50</td>
<td>Covers the physical and printing aspects of print media.</td>
</tr>
<tr>
<td>PHYS 284</td>
<td>Course for Students in the School of Broadcast</td>
<td>0.50</td>
<td>Provides an introduction to the physical and electronic aspects of broadcast.</td>
</tr>
<tr>
<td>PHYS 285</td>
<td>Course for Students in the School of Web</td>
<td>0.50</td>
<td>Focuses on the physical and electronic aspects of web technology.</td>
</tr>
<tr>
<td>PHYS 286</td>
<td>Course for Students in the School of Mobile</td>
<td>0.50</td>
<td>Provides an introduction to the physical and electronic aspects of mobile.</td>
</tr>
<tr>
<td>PHYS 287</td>
<td>Course for Students in the School of Cloud</td>
<td>0.50</td>
<td>Focuses on the physical and electronic aspects of cloud technology.</td>
</tr>
<tr>
<td>PHYS 288</td>
<td>Course for Students in the School of Quantum</td>
<td>0.50</td>
<td>Provides an introduction to the physical and quantum aspects of quantum.</td>
</tr>
<tr>
<td>PHYS 289</td>
<td>Course for Students in the School of Artificial</td>
<td>0.50</td>
<td>Provides an introduction to the physical and artificial aspects of artificial.</td>
</tr>
</tbody>
</table>
22M:27 Introduction to Linear Algebra 4 s.h.
22M:28 Calculus III 4 s.h.

Group 2
22M:35-36 Engineering Calculus I-II 8 s.h.
or
22M:45-46 Accelerated Calculus I-II 8 s.h.
22M:40 Matrix Algebra for Engineers 2 s.h.
22M:41 Differential Equations for Engineers 3 s.h.
22M:42 Vector Calculus for Engineers 3 s.h.

Other Required Courses
Students also must take the following:
20:17-19 Introductory Physics I-II 12 s.h.
20:116 Introductory Quantum Mechanics 3 s.h.
20:118 Statistical Physics 3 s.h.
20:130-131 Electricity and Magnetism 6 s.h.
20:132 Intermediate Laboratory (two semesters) 4 s.h.

Two additional courses, one of them at the 190 level, selected from:
29:117 Optics 3 s.h.
29:128 Electronics 3 s.h.
29:132 Intermediate Laboratory (third semester) 2 s.h.
20:171 Mathematical Methods of Physics 3 s.h.
20:191 Atomic Physics 3 s.h.
20:192 Elementary Particles and Nuclear Physics 3 s.h.
20:193 Introduction to Solid State Physics 3 s.h.
29:194 Plasma Physics 3 s.h.

An additional 3-5 semester hours of introductory course work in another science or engineering field, including computer science but not mathematics.

Undergraduate majors who plan to pursue graduate work are advised to go as far beyond the minimum requirements stated above as feasible, furthering their work in mathematics. However, only 50 semester hours of 200- and 300-level courses count toward a single-major bachelor's degree.

Bachelor of Arts in Physics

The B.A. program is designed for students who wish to gain comprehensive knowledge of physics but do not plan to research-oriented career in physics. This degree program is appropriate for those planning careers in medical, law, science-related administration, business, technical writing, or secondary-school science teaching (see "Science Education" in this section of the Catalog and in the College of Education section). 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 Bachelor of Arts with a major in physics:
22M:25-26 Calculus I-II 8 s.h.
or
22M:35-36 Engineering Calculus I-II 8 s.h.
20:17-18 Introductory Physics I-II 8 s.h.
or
20:11-12 College Physics 8 s.h.
20:19 Introductory Physics III 4 s.h.
20:15 Intermediate Mechanics 3 s.h.
20:18 Statistical Physics 3 s.h.
20:128 Electronics 2 s.h.
or
20:129 Electricity and Magnetism 3 s.h.
20:132 Intermediate Laboratory (two semesters) 4 s.h.

An additional 12 semester hours or more of science in a thematic area as approved by the student's advisor or the course work required for major certification.

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 careers or advanced study in astrophysics, radio astronomy, or space science.

The following courses or their equivalents are required for the Bachelor of Science with a major in astronomy. Students must select Group I or Group II.

Required Courses
Group 1
22M:25-27 Calculus I-II 8 s.h.
or
22M:45-46 Accelerated Calculus I-II 8 s.h.
22M:30 Introduction to Linear Algebra 4 s.h.
22M:38 Calculus III 4 s.h.

Group 2
22M:35-36 Engineering Calculus I-II 8 s.h.
or
22M:45-46 Accelerated Calculus I-II 8 s.h.
22M:40 Matrix Algebra for Engineers 2 s.h.
22M:41 Differential Equations for Engineers 3 s.h.
22M:42 Vector Calculus for Engineers 3 s.h.

Other Required Courses
Students also must take the following:
20:17-19 Introductory Physics I-II 12 s.h.
or
20:116 General Astronomy 8 s.h.
or
20:13 Intermediate Mechanics 3 s.h.
or
20:116 Introductory Quantum Mechanics 3 s.h.
20:119-120 Introduction to Astrophysics I-II 6 s.h.
or
20:128 Electricity and Magnetism 6 s.h.
or
20:132 Intermediate Laboratory 2 s.h.
or
20:137 Astronomical Laboratory 2 s.h.
or
20:191 Atomic Physics 3 s.h.
or
20:194 Plasma Physics 3 s.h.

Undergraduate majors who plan to pursue graduate study are advised to go as far beyond the minimum requirements stated above as feasible, by taking one or more of the courses listed below. However, only 50 semester hours of 200-level courses or more of physics are counted toward a single major bachelor's degree.

Bachelor of Arts in Astronomy

The B.A. program is designed for students who wish to gain comprehensive knowledge of astronomy but who do not plan a research-oriented career in astronomy. This degree program is appropriate for those planning careers in secondary school teaching, technical writing, and science-related administration (see "Science Education" in this section and 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 are required for the B.A. with a major in astronomy:
22M:25-26 Calculus I-II 8 s.h.
or
22M:35-36 Engineering Calculus I-II 8 s.h.
or
20:17-18 Introductory Physics I-II 8 s.h.
or
20:13 Intermediate Laboratory 2 s.h.
or
20:171-172 Mathematical Methods of Physics 8 s.h.
or
20:195 Plasma Physics 5 s.h.

Double Major in Physics and Astronomy

Students who wish to obtain a double major in physics and astronomy must earn a minimum of 56 semester hours outside physics and astronomy. These interested in such a combination should consult with their advisor. For general requirements of the College of Liberal Arts, see the College of Liberal Arts Writings of the Catalog.

Honors
Junior and senior majors who are members of the University Honors program may opt for 8 semester hours of 209 Honors Seminar and conduct an independent investigation under the guidance of a faculty member as part of their program for the B.A. or B.S. with honors in physics or astronomy. They must present a written
Minor in Physics

A program of physics courses consisting of the 15 semester hours, with a minimum grade-point average of 2.00. The 15 semester hours should include 4 semester hours selected from the following:

20110-120 Introduction to Astrophysics 3.0
20117-137 Laboratory Astronomy 3.0

Additional 6 semester hours of physics courses of 100-level physics courses

These 12 semester hours must be taken at The University of Iowa.

Graduate Programs

Two advanced degrees are offered in physics: the Master of Science—and either thesis or critical essay—and the Doctor of Philosophy. Students who wish to pursue a program in astronomy beyond the M.S. level may qualify for a Ph.D. in physics with specialization in a dissertation in astronomy or astrophysics. An M.S. is not prerequisite to the Ph.D.

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). Each entering graduate student is assigned a faculty advisor, who assists in preparing a plan of study and in guiding the student's progress. Graduate students become candidates for advanced degrees in physics or astronomy only after passing a qualifying examination in all principal areas of physics at the level of advanced undergraduate work. The examination is given during the first week of our second semester each year and must be taken by all first-year graduate students. After a student has passed the qualifying examination, the appropriate thesis or essay advisor then becomes the candidate's general advisor and the chair of the final examination committee.

Master of Science in Physics

The M.S. in physics is offered with either thesis or critical essay. The degree may be terminal or it may be the first step toward the doctorate. In either case, the final examination is oral, conducted by a committee of three members of the graduate faculty appointed by the dean of the Graduate College.

The program for the M.S. with thesis requires 30 semester hours of graduate work (100- or 200-level courses) and a thesis based on original experimental or theoretical investigation by the candidate. No more than 6 of the minimum 30 semester hours may be for research (292-293 Research; Physics). The program for the M.S. with a critical essay requires 30 semester hours of graduate work (100- or 200-level courses), an independent study in the literature on a chosen topic, and preparation of a critical essay on that topic. No more than 4 of the minimum 30 semester hours may be for the critical essay (292-293 Critical Study). Up to one-third of the graduate program may be related scientific field other than physics and mathematics—for example, chemistry, astronomy, geology, or engineering.

Candidates for either of the M.S. programs must have satisfactorily completed the following courses or their equivalents as undergraduates or graduates:

20115 Intermediate Mechanics 3.0
20116 Introductory Quantum Mechanics 3.0
20117 Optics 3.0
20118 Classical Physics 3.0
20119-120 Introduction to Astronomy 3.0
20120 Electrodynamics and Magnetism 3.0
20123 Advanced Laboratory 2.0
20127 Advanced Laboratory Physics 3.0
20171-178 Mathematical Methods of Physics 6.0
20174 Atomic Physics 3.0
20175 Plasma Physics 3.0
Students who intend to pursue a Ph.D. in physics with an astrophysics specialization should take the following courses as early in the master’s program as possible:

20124-125 Electromagnetism and Relativity 3.0
20126 Stellar Structure and Evolution 3.0
20127 Special Topics in Astrophysics 3.0
20128 Advanced Astrophysics 3.0

Doctor of Philosophy in Physics

The program of study for the Ph.D. with a major in physics includes thorough course work in both classical and quantum theoretical physics for all candidates, whether their specialization is in an experimental or a theoretical area. All candidates must take comprehensive examinations. Candidates for the Ph.D. in theoretical physics, for example, prepare and defend a written dissertation based on this work.

They must also take at least 27 semester hours in graduate courses in the department, excluding 20220, 20281, 20282, and 20283. The following minimum program is recommended as preparation for the comprehensive examinations:

20191-92 Atomic Physics 3.0
20192-212 Quantum Mechanics and Nuclear Physics 3.0
20193 Introductory Solid State Physics 3.0
20194 Classical Mechanics 3.0
20195 Statistical Mechanics 3.0
20196-97 Classical Electrodynamics 3.0
20198-99 Advanced Quantum Mechanics I 3.0
20199-200 Advanced Quantum Mechanics II 3.0

Advanced mathematics, such as complex variables and tensor analysis, is used freely in these courses. An introduction to these fields is given in 20171-172 Mathematical Methods of Physics. The selection of these advanced courses will depend on the ability of the students' preparation for graduate work; the students' choice of more advanced and specialized courses will depend on the direction in which their interests develop. No more than 30 of the minimum 72 semester hours may be in research and seminar courses.

Candidates for the Ph.D. degree are not recommended for the degree until they have written the dissertation in proper form for formal presentation and have submitted it for publication or the approval of the research advisor, to be widely distributed, refereed scientific journal.
Bachelor of Arts

Students seeking the B.A. degree with a major in political science must complete 32 semester hours of coursework in political science, as follows:

30:1 Introduction to American Politics 3 s.h.
30:20 Introduction to Foreign Policy 3 s.h.
30:40 Introduction to the Politics of the Third World 3 s.h.
30:42 Introduction to Political Behavior 3 s.h.
30:50 Introduction to Political Communication 3 s.h.
30:61 Introduction to American Foreign Policy 3 s.h.
30:90 Introduction to Political Science 3 s.h.

Students must earn at least 18 semester hours in political science courses numbered 100 or above credit from 30:142 Washington Internship cannot be included in this total. At least 12 of the required 18 semester hours must be taken in regularly scheduled classroom work. Transfer students must take at least 9 of the 33 semester hours of work in political science at The University of Iowa.

Students must maintain at least a 2.00 grade-point average in all political science courses and in all political science courses taken at The University of Iowa.

Bachelor of Science

The B.S. degree requires three semesters of mathematics as calculus. The following set of courses are approved:

23:11 Calculus I 4 s.h.
23:21 Calculus II 4 s.h.
23:31 Introduction to Linear Algebra 4 s.h.
23:41 Linear Algebra 4 s.h.
23:51 Introduction to Differential Equations 4 s.h.
23:61 Introduction to Multivariable Calculus 4 s.h.
23:71 Introduction to Probability and Statistics 4 s.h.

Graduate Programs

The department has a program leading to a Doctor of Philosophy in political science for students planning academic careers. The candidate must pass a written qualifying exam and an oral dissertation defense as part of the major degree only as a preliminary step to the Ph.D.

Master of Arts with Thesis

To earn an M.A. in political science, students must complete at least 26 semester hours with a grade-point average of at least 3.25, submit a thesis, and pass a final oral examination. No more than 8 semester hours of credit for thesis preparation may be counted toward the 30-semester hour minimum requirement. The final oral examination covers both the thesis and course work.

Education Major

Undergraduates planning to emphasize political science in their teacher training should consult the College of Education for requirements.

The courses 30:1 Introduction to American Politics and 30:110 The American Political System fulfill the Iowa teacher certification requirements.

Honor

The program leading to a B.A. or B.S. with honors is open to students with a minimum cumulative grade-point average of 3.50 overall and in political science. To graduate with honors, students must maintain at least a 3.50 grade-point average in political science and a cumulative grade-point average of at least 3.20. Students are encouraged to take upperclass honors seminars as soon as possible, both because the program honors only 9 semester hours of upperclass honors coursework with a grade of B or higher in each course.

Honor students must complete 30:142 Honors Seminar or the Study of Politics, preferably as sophomores. They also must take at least one additional upper-class honors seminar. 30:141-142 Honors Seminar on American Politics, 30:182 Honors Seminar on Political Theory, 30:183-184 Honors Seminar on Comparative Politics, or 30:186-187 Honors Senior Thesis, or a third upperclass honors seminar. Contact the department director of honors 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 counted as 100 and above credit from 30:142 Washington Internship cannot be applied to the minor.

Doctor of Philosophy

The Ph.D. program in political science is designed to prepare students for research, teaching, and an advisory role in academic settings and private or governmental organizations. This program prepares the Ph.D. for a career in research, teaching, and an advisory role in academic settings and private or governmental organizations.

Curriculum

Doctoral study usually lasts four years. The first-year curriculum for all students consists of core courses that include both substantive and methodological instruction. Emphasis is on basic research methods and policy-relevant methods. The second year of study is devoted to specialization in a specific area of interest. Special attention is given to research design, creation of databases, analyses, and presentation of data and research results. Students in this program are encouraged to complete an intensive project directed by a faculty member.

The second and third years of study are spent in a seminar with faculty, devoted to the substantive and methodological issues. Students in this program are required to complete an intensive project directed by a faculty member.
33453 Political Psychology

3.4-3.9: Political psychology is the study of the psychological components, devices and methods used to create, maintain and enhance the power and authority of political systems. Political psychology is an interdisciplinary field, drawing on contributions from political science, social psychology, and other related disciplines. It explores how individuals, groups, and societies perceive, think about, and act in political contexts. The field is concerned with understanding how political attitudes, beliefs, and behaviors are formed and sustained. It examines the role of mass media, political ideology, and cultural factors in shaping political behavior.

33454 Political Socialization

3.4-3.9: Political socialization is the process by which individuals learn about political participation, the political system, and the values, beliefs, and norms that are associated with political behavior. Political socialization occurs through a variety of channels, including family, schools, peer groups, and the media. The process begins at a young age and continues throughout the life course. It is a lifelong process that shapes individuals' political attitudes and behaviors.

33455 Public Opinion and Electoral Behavior

3.4-3.9: Public opinion is the aggregated beliefs, attitudes, and sentiments of the public on matters of public policy. Electoral behavior refers to the behavior of voters in elections, including their decision to vote, whom they choose to vote for, and how they cast their votes. Public opinion and electoral behavior are key factors in the functioning of democratic political systems.

33461 Foreign Policy

3.4-3.9: Foreign policy is the conduct of international relations by a state, including its interactions with other states, international organizations, and non-state actors. It involves decisions about a state's alliances, trade relationships, military interventions, and diplomatic negotiations. The study of foreign policy is important for understanding the causes and consequences of international conflict and cooperation.

33462 Security and Foreign Policy

3.4-3.9: Security and foreign policy are closely related fields that are concerned with the protection of a state's national security and the maintenance of international peace and security. They deal with issues of war and peace, military strategy, and the use of force.

33465 Public Opinion in International Relations

3.4-3.9: Public opinion in international relations refers to the attitudes, beliefs, and values held by the public on international issues. It is an important factor in the study of international relations, as it can influence public support for foreign policies and military interventions.

33470 Gender, Race, and Ethnicity in Political Science

3.4-3.9: Gender, race, and ethnicity are important variables in political science. They affect political participation, representation, and the outcomes of political processes. The study of gender, race, and ethnicity in political science is important for understanding the diversity of political experiences and the challenges faced by different groups.

33474 Women and Politics

3.4-3.9: Women and politics refers to the study of women's participation in political processes. It examines the ways in which gender affects political participation, representation, and decision-making.

33476 Theories of Women's Political Behavior

3.4-3.9: Theories of women's political behavior provide an understanding of how women participate in political processes. They examine the factors that influence women's political behavior, such as gender roles, socialization, and political socialization.

33484 Theories of Political Socialization

3.4-3.9: Theories of political socialization provide an understanding of how individuals learn about political participation, the political system, and the values, beliefs, and norms that are associated with political behavior.

33489 Political Socialization and Public Opinion

3.4-3.9: Political socialization and public opinion are closely related fields that are concerned with the formation of political attitudes and beliefs. They deal with issues of the acquisition, maintenance, and change of political knowledge and beliefs.

33492 Ideology in Public Policy and Administration

3.4-3.9: Ideology in public policy and administration refers to the values, beliefs, and priorities that underlie the development and implementation of public policies. It is important for understanding how policies are shaped and what priorities are given.

33494 Research on Ideology

3.4-3.9: Research on ideology is an important area of study in political science.

33509 Votemapping

3.4-3.9: Votemapping refers to the use of electoral maps to analyze voting patterns. It is an important tool in the study of political behavior and the development of public policy.

33529 Special Topics

3.4-3.9: Special topics are courses that focus on specific issues or topics within the field of political science. They are designed to provide a deeper understanding of specific areas of interest.

PORTUGUESE

See "Spanish and Portuguese."
CLINICAL PSYCHOLOGY
3:13 Introduction to Clinical Psychology 3 s.h.
3:19 Personality 3 s.h.
3:109 Psychology of Aggression 3 s.h.
3:123 Health Psychology 3 s.h.
3:168 Schizophrenia 3 s.h.
3:162 Depression and Moods 3 s.h.
3:163 Abnormal Psychology 3 s.h.
3:166 Developmental Psychopathology 3 s.h.
3:170 Behavior Modification 3 s.h.

COGNITIVE PSYCHOLOGY
3:16 Introduction to Mental Processes 3 s.h.
3:110 Learning and Motivation in Children 3 s.h.
3:113 Language Processing 3 s.h.
3:119 Memory and Cognition 3 s.h.
3:130 Psychophysics of Thinking 3 s.h.
3:133 Fundamentals of Sensation and Perception 3 s.h.
3:147 Introduction to Psychophysiological Measurement 3 s.h.
3:155 Human Factors Engineering 3 s.h.

SOCIAL PSYCHOLOGY
3:15 Introduction to Social Psychology 3 s.h.
3:102 Interpersonal Influence 3 s.h.
3:103 Development of Children's Social Behavior 3 s.h.
3:106 Attitude Change 3 s.h.
3:107 Environmental Stress 3 s.h.
3:108 Small Group Processes 3 s.h.
3:112 Research in Nonverbal Communication 3 s.h.
3:124 Psychology and the Law 3 s.h.
3:140 Psychological Aspects of International Relations 3 s.h.

*These courses may be counted in either—but not both—of the areas indicated.

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. Students entering without previous graduate work, it is a four-year program; those entering with previous graduate training may enter from two 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 four broad training areas: clinical psychology, human experimental psychology, neuropsychology, and school 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 subspecialty. While pursuing specialty training, all students must meet course requirements in statistics, research methods, learning, and several content areas other than their primary area.

The department has three areas of research emphasis that cut across the four training areas and combine methodological expertise of faculty and students with special resources in behavioral and cognitive processes, experimental psychology, and social processes. Faculty members focus on individual and collaborative research projects that contribute to the expanse of the research areas. Consequently, students can easily complete the requirements of a training area while developing research knowledge and skills in one or more of the research areas.

The training area programs are sufficiently flexible to permit students to develop substantial competence in a second training area. Several joint programs have been formulated, and others can be developed as student interest dictates. A joint program involves starting course work in two areas, and research supervision or co-supervision by faculty members from both areas. The department is also prepared to help students develop additional expertise in any of the following areas: human factors, aging, organizational behavior, brain-behavior, measurements, and cognitive science. Preparation in one of these areas may permit a student to develop sufficient depth in the department, selected courses in other departments of the University, and participation in one or more research projects in the interest area.

Doctor of Philosophy
The Ph.D. requires satisfactory completion of at least 90 credits of academic work in psychology, including at least 33 semester hours in psychology courses. The student must pass an oral examination, through one of several options, requirements in statistics and research methods, and a thesis. A course in the history and/or philosophy of psychology is strongly encouraged. Students also are expected to take sufficient course work outside the primary training area to develop a reasonably broad background in the discipline of psychology as a whole. The nature of these requirements and their placement in the graduate program varies somewhat among the various graduate departments and the individual student's background and interests.

During each of the first three semesters, graduate students ordinarily take some courses for example, a general course in statistics, a course in the psychology of development, and an outside area elective. Students also become familiar with the interface research strategies, and special techniques in one or more research areas through engagement in individual supervised research projects. This research participation—which may be with one faculty
member all year long or with a different faculty member each semester—is designed to help students develop, by early in the second year, a reasonably detailed plan for the master's research project.

By the end of the second year—certainly very early in the third year—students are expected to have completed their master's project and to have defended their thesis. Advancement to Ph.D. candidacy is based on a faculty-wide review of the student's overall record of performance on the M.A. project, in course work, and in teaching, research, and service.

During the third year, students continue selected course work in the teaching and interest areas, develop a prospectus for the dissertation research, and prepare for the comprehensive examination. This written examination covers material in the specialty and is in mixed areas and is ordinarily given at the beginning of the fourth year. The fourth year is devoted primarily to advanced seminars and 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 above, the department does not offer a specific M.A. program. The M.A. with thesis is a required only for students preparing for the Ph.D. This degree requires satisfactory completion of at least 30 semester hours of graduate course work in psychology, 18 of which must be at the 700 level. The course work must include the statistics sequence, a research course, and at least one course outside the primary specialty area. 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 is an option available to those few students who terminate their work in the department after four semesters. This degree requires satisfactory completion of at least 36 semester hours of graduate credit in psychology, 24 of which must be taken at The University of Iowa. The course work must include the statistics sequence, a research course, and at least one course outside the primary specialty area. Successful completion is evidenced, in a written examination—covering their area of specialization.

Graduate Training Areas

Clinical Psychology

The clinical training program, fully approved by the American Psychological Association, strongly emphasizes scientific and professional aspects of psychology. It is designed for students who primarily are interested in developing scientifically understanding of clinical phenomena and acquiring the skills necessary to the systematic treatment of such phenomena. Recognizing that students must become familiar with clinical material and competent in the application of clinical skills, the department closely integrates practical experience in the Carl E. Seaborn Psychology Clinic with course work and supervised research experience. Students in the clinical program may develop special competence in areas such as psychopharmacology, personality, aggression, the affective disorders, behavioral and cognitive therapies, child psychology, and clinical health psychology. Faculty members collaborate actively with colleagues from departments, such as: criminology, psychiatry, pediatrics, obstetrics and gynecology, and surgery, and from other units, such as the Center for Health Services Research, the School of Social Work, and nearby area education agencies. 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. Within the department, joint training programs combining a clinical specialty with work in other training areas have been established and are available to students with strong interests in new specialty areas. Advanced students have opportunities to gain additional practical experience through placement in clinical facilities maintained by local, state, and university agencies. Students in the clinical program who wish to have the designation “clinical psychology” on their official transcripts 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 of most, if not all, of the dissertation project.

Human Experimental Psychology

Students affiliated with the human experimental program concentrate their training in the broad area of perceptual and cognitive information processing, and learning. Current faculty members specialize in addressing areas: learning, memory, and problem solving in children; language development; developmental psychology; psychopharmacology; psychopharmacological and signal detection theory; the role of drugs, human judgment, and error making, information processing, visual perception; and psychopharmacology and behavior change.

Faculty members in the human experimental area are prepared to help students gain additional exposure in a variety of interest areas, including human factors, communications, aging, and organizational and consumer behavior. Collaborative research is a major way faculty members from the College of Business Administration, the Center for Health Services Research, and several departments, including neurology, industrial engineering, speech pathology and audiology, and dentistry.

Neuroscience and Behavior

The program in neuroscience and behavior focuses on the anatomy of learning and motivation, primarily in nonhuman subjects, through the application of behavioral and biophysical principles. Special faculty strengths are in mammalian and operant conditioning, comparative psychology, motivated behavior, neuromembrbrane biology, and neuropsychology, and neuroanatomy. Students in this program have the opportunity to learn state-of-the art techniques in computer-controlled experimentation and electronic instrumentation, and to learn analytic and laboratory methods in neuroendocrinology, histology, and biochemical assay.

Faculty members in the neuroscience and behavior area interact extensively with colleagues from a number of basic science departments in the University. The faculty of this collaborative activities provide excellent research and teaching opportunities for students interested in emerging interdisciplinary fields such as behavioral medicine and neuroendocrinology.

Social Psychology

The social psychology program offers a variety of perspectives on social processes. Students develop some familiarity with all of the approaches but may focus their graduate training in any of several areas, such as social cognition, attribution, social influence on behavior, close relationships, the social psychology of groups, and the study of social psychological aspects of clinical problems and processes.

Students in the social psychology program also may acquire additional preparation for research and teaching in interest areas such as organizational and consumer behavior, communications, human action, and behavioral medicine. Such preparation, which ordinarily will involve selected course work outside the department (e.g., in the College of Business Administration or the Department of Communication Studies) and participation in special research projects, will broaden students' employment opportunities.

Admission

Once the graduate program in psychology is designed primarily for students seeking the Ph.D. degree, candidates are considered on this basis. Occasionally, a qualified applicant interested in advanced work only through the M.A. area may be admitted to pursue a joint graduate program involving psychology and another discipline or profession. A person interested in such a program should contact the department director before filing an application.

The deadline for applications is February 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 December. The GRE Subject Test in psychology is not required. Applications may be submitted any time but are considered only once each year, between February 1 and March 15—for admission the following fall. Admission decisions are based on a composite consideration of prior academic performance, letters of reference, scores on the verbal, quantitative, and analytic sections of the GRE General Test, and the applicant's statement of background and purpose. Initial review of application materials is made early in December, and interview requests are made to candidates in the applicant's primary training area. An undergraduate major in psychology—including one year of introductory course in psychology, a course in statistics, and additional work in the natural science and in
Required Course Work
To graduate with a B.A. in religion, students must take 15 semester hours in foundation studies in historical religious traditions distributed among the following three areas.

WESTERN RELIGIOUS TRADITIONS
Six semester hours in the following:
32:1 Introductory Christian Tradition 3 s.h.
32:3 Quest for Human Destiny 3 s.h.
32:11 The Testament Survey 2 s.h.
32:12 Old Testament Survey 2 s.h.
32:15 New Testament Survey 2 s.h.
32:20 Religion in American History 3 s.h.

ASIAN RELIGIOUS TRADITIONS
Six semester hours from the following:
32:2 Living Religions of the East 3 s.h.
32:5 Asian Humanities: India 3 s.h.
32:9 Asian Humanities: China 3 s.h.
32:18 Buddhist Worlds and World Views 3 s.h.

THEOLOGICAL APPROACHES TO RELIGION
Three semester hours from the following:
32:2 Religion and Society 3 s.h.
32:10 Introduction to Religious Studies 3 s.h.

Advanced Requirements
Students must take 12 semester hours of continuing studies in one of the following five areas of concentration, grouped in three divisions: historical traditions, thought and culture, and cross-cultural studies. Lists of approved courses for each concentration are available from the School of Religion office. The concentration areas are designed to give students greater flexibility in fulfilling requirements of the major.

HISTORICAL RELIGIOUS TRADITIONS
Judaism, Christianity, and Islam
Religions of India, China, and Japan
The Bible and its context

RELIGIOUS THOUGHT AND CULTURE
Theology and ethics
Methodology and theories
Religion, literature, and the arts

CROSS-CULTURAL STUDIES IN RELIGION
Religion in ancient civilizations
Religion in medieval societies
Religion in the modern world

Senior Seminar
All students must take 32:196 Senior Majors Seminar I or 3 semester hours.

Honors
Students with a 3.30 overall grade-point average are eligible to register for the honors program in religion. To complete the religion major with honors, students must take 32:197 Honors Tutorial (3 s.h.) and 32:198 Honors Essay (3 s.h.) under supervision of a faculty advisor who must approve the completed honors essay. Copies are submitted both to the School of Religion and to the University Honors Program.

Minor
A minor in religion requires 15 semester hours of credit in religion courses with a minimum grade-point average of 2.00. Of the 15 semester hours, at least 12 must be taken at The University of Iowa in courses numbered 32:100 and above.

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 routes, thesis and non-thesis, toward the M.A. In both, students must earn a minimum of 36 semester hours in the School of Religion. Most of these will be earned in courses that fall into one of five areas of concentration: the Hebrew Bible and its early interpretations; Judaism and Christianity in the Greco-Roman world; history of religion and religious thought in the West; theology, ethics, and culture; and history of Asian religions.

Students in the thesis program take at least one thesis seminar in this area and must count the thesis for 6 of the semester hours required. Students in the non-thesis program take at least two seminars.

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 seminars for language and other research tools.

All students are required to take a written M.A. examination that tests competence in the area of concentration.

Master of Arts in Religion and Health
Study of the role of religion in illness and health requires a combination of theoretical and clinical investigations. The University of Iowa Hospitals and Clinics provide the primary setting for research and training in the program. Students may choose a thesis or non-thesis program. In either, they are required to earn 36 semester hours. Students in the thesis program take one seminar and may count the thesis for 6 semester hours of credit. Students in the nonthesis program take two seminars. A maximum of 6 semester hours may be transferred from another accredited graduate or professional school.

All students must complete a one-semester unit of 32:245 Clinical Study of Religion or present equivalent substitute experience. The program also includes required courses in religion and personality and at least four courses (for a minimum of 10 semester hours) in one other area of concentration in the School of Religion: the Hebrew Bible and its early interpretations; Judaism and Christianity in the Greco-Roman world; history of religion and religious thought in the West; theology, ethics, and culture; and history of Asian religions.

The student's advisory committee may require languages or other research tools. All students must take an M.A. examination.

Doctor of Philosophy
The broad-based Ph.D. program places a high priority on the academy and heavily weights work in broad intellectual and cultural contexts. The program is structured to facilitate development of the research skills necessary to support effective and to foster the generation of new knowledge. As teaching assistants, Ph.D. students have maximal opportunity to develop teaching skills.

Candidates for the doctorate must complete a minimum of 72 semester hours of graduate core work, of which 9 semester hours must be taken outside the School of Religion. A maximum of 12 semester hours is allowed for the dissertation.

The graduate areas of concentration are the Hebrew Bible and its early interpretations; Judaism and Christianity in the Greco-Roman world; history of religion and religious thought in the West; theology, ethics, and culture; and history of Asian religions. No later than the middle of the student's fourth semester, the faculty advisory committee decides whether to grant candidacy to the student, and accepts the student onto its faculty committees of one of the Ph.D. programs. The student must:

take 32:300 Colloquium: Introduction to the Graduate Study of Religion;

demonstrate evidence of the ability to write scholarly papers; judgment is based on a series of papers, one for each completed semester of residency, which the program faculty has previously judged to represent satisfactory progress toward the degree; have a cumulative grade-point average of at least 3.00;

satisfy the program in the language requirements appropriate to his or her program;

and pass a plan of study that lists core work and language and research tools in preparation for the written and oral comprehensive examinations.

Doctoral candidates also must pass an oral examination on the dissertation.

More detailed information on graduate programs in religion is provided in Graduate Studies in the College of Liberal Arts of the University of Iowa. Information is also available from the department office or the University's Office of Administration.
Financial Aid
The School of Religion offers two types of departmental financial aid: for graduate students: teaching assistantships and research assistantships. The department also may nominate eligible students for University of Iowa fellowships.

The Cullom Scholarships has been established for doctoral students interested in the relationship of religion, the visual arts, and humanistic values.

Financial aid awards are made annually on a competitive basis. First-year students are appointed only to research assistantships.

Admission
All applications for admission to graduate study must meet the general requirements of the Graduate College. In addition, the School of Religion ordinarily requires a combined verbal-quantitative score of 1050 on the Graduate Record Examination (GRE) General Test and a 3.00 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.

Resources
In addition to Greek, Latin, and modern European languages, the University offers courses in Hebrew, Sanskrit, and Hindi. The School of Music offers Hebrew and other Semitic and H意onic languages.

The University of Iowa Hospitals and Clinics provide medical training opportunities for students in the M.A. program in religion and health. Individual concerns on such topics as death and dying and mental ethics also utilize hospital personnel and facilities.

Courses

221: John-Cristian Tradition
3 s.h.
A study of religious and secular writers from the Middle Ages on to the time of Martin Luther. (Cross-list with CR125.)

223: Religion and Society
3 s.h.
An introduction to the social sciences and a survey of the social thought of the modern world. 3 s.h. (Offered spring semester.)

225: Quest for Human Destiny
3 s.h.
An exploration of the major ethical systems and a consideration of the ultimate ends of human existence.

226: Living Religions of the East
3 s.h.
Religious ethics, death, and immortality, Asian religions, (CR126) through civilizations and religion, biblical perspective. (Same as CR126.)

227: Asian Humanities 100a
Same as CR125.

229: Eastern Humanities 100b
Same as CR125.

232: Introduction to Religious Indian Texts
3 s.h.
An introduction to the Hindu, Buddhist, and Jaina religions. (Offered spring semester.)

233: Biblical Law and Jewish Law: Law, Culture, and Society
3 s.h.
An introduction to biblical and legal studies, the study of law in history and society. (Cross-listed with CR127.)

235: The Jewish Experience
3 s.h.
An introduction to the Jewish experience, ancient through modern, with emphasis on the history of Jewish thought, (CR127)

237: The World of the New Testament
3 s.h.
Jesus, the importance of Jesus, and the role of the New Testament in Christianity. (CR127)

238: Ancient Myths
3 s.h.
The myths of the ancient world, from the ancient Middle East to the Mediterranean world. (CR127)

240: The Myths of the Bible
3 s.h.
The myths of the Bible, the role of myth in the Bible, and the significance of the myths of the Bible.

241: Biblical Law and Jewish Law: Law, Culture, and Society
3 s.h.
An introduction to biblical and legal studies, the study of law in history and society. (Cross-listed with CR127.)

242: The Biblical Law
3 s.h.
An introduction to biblical and legal studies, the study of law in history and society. (Cross-listed with CR127.)

243: Ancient Myths
3 s.h.
The myths of the ancient world, from the ancient Middle East to the Mediterranean world. (CR127)

244: The Myths of the Bible
3 s.h.
The myths of the Bible, the role of myth in the Bible, and the significance of the myths of the Bible.

245: Biblical Law and Jewish Law: Law, Culture, and Society
3 s.h.
An introduction to biblical and legal studies, the study of law in history and society. (Cross-listed with CR127.)

246: The Biblical Law
3 s.h.
An introduction to biblical and legal studies, the study of law in history and society. (Cross-listed with CR127.)

247: Ancient Myths
3 s.h.
The myths of the ancient world, from the ancient Middle East to the Mediterranean world. (CR127)

248: The Myths of the Bible
3 s.h.
The myths of the Bible, the role of myth in the Bible, and the significance of the myths of the Bible.

249: Values in the Contemporary World
2 s.h.
An introduction to the study of religious thought, from the ancient Middle East to the contemporary world. (CR127)
32.12 Theological Questions I 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, such as the teaching of "God" as defined in religious terms, explanations of theologies and doctrines.

32.13 Theological Questions II 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.14 Readings from Reference to 3.5 h.

**Remarks:** Reference to various centuries—Christians, Africans, Muslims, etc. with emphasis on major movements of each.

32.15 Theology of Luther 3.5 h.

32.16 Theology of Paul Tiiblitz 3.5 h.

32.17 Religion and the Islamic World I 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.18 Christian Theology and Religious Bases 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.19 Religious Ethics and Personal Ethics 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.20 Ethics: Theological and Sociological Ethics 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.21 Theology of Religion and Religious Systems 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.22 Theology and the Science of Religion 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.23 Christian Ethics and Theology 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.24 Theological Questions: An Introduction to 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.25 Religion and Culture in the Ancient Near East 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.26 Religious Culture and the Ancient Near East 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.27 Social and Political Theology 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.28 Social and Political Theology 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.29 Social and Political Theology 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.30 Social and Political Theology 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.

32.31 Social and Political Theology 3.5 h.

**Remarks:** A knowledge of the various doctrines of the Church, emphasis on the development of religious doctrine, specifically doctrines of each.
Course

For Undergraduates

General Education

101: Theoretical I
4 s.h.
Students must enroll for credit and regularly attend classes. Emphasis is on critical thinking, development of the ability to integrate information from various disciplines, and the use of technology in learning.

102: Theoretical II
4 s.h.
Students must enroll for credit and regularly attend classes. Emphasis is on critical thinking, development of the ability to integrate information from various disciplines, and the use of technology in learning.

103: Advanced Rhetoric
4 s.h.

104: Writing and Reading
4 s.h.

105: Speaking and Reading
4 s.h.

106: Advanced Rhetoric
4 s.h.

107: Advanced Rhetoric
4 s.h.

108: Advanced Rhetoric
4 s.h.

109: Advanced Rhetoric
4 s.h.

110: Advanced Rhetoric
4 s.h.

111: Advanced Rhetoric
4 s.h.

112: Advanced Rhetoric
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179: Advanced Rhetoric
4 s.h.
civilization and culture. A knowledge of Russian is seldom an end in itself; rather it is a complement to some other vocation. Accordingly, the department encourages all of its students to pursue a major joint 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. Thus, they have been better equipped to gain employment in the Soviet-area and area-related fields and have enjoyed enhanced career opportunities in understanding of the culture, history, peoples, and politics of the former Soviet Union.

Through the University’s Bachelor of Arts degree program in Russian, East European, and Eurasian studies, interested students can focus their undergraduate training precisely on this region of the world. For more information on this undergraduate B.A. program, see “Russian, East European, and Eurasian Studies” in this section of the Catalog.

With the increasing importance of Russia as a language of science and commerce, many students find that taking in the language is an important area to cover in the natural and physical sciences, engineering, medicine, and business. Students of journalism, social science, and the social and military sciences may have strengthened their career preparation through the study of Russian. Some students major in Russian before going into law, international relations, insurance, business, or medicine. Some students study Russian as preparation for graduate work in Soviet languages and literatures, comparative literature, English, or other humanities disciplines.

Russian majors with a B.A. and the required education courses occasionally do teaching careers in secondary schools (for the relevant teacher-preparation programs in the College of Education see Catalog). A number of governmental agencies annually induct job candidates who have advanced training in Russian; these agencies give preference to applicants who have a high level of language proficiency with a well-rounded background in the area studies. Students who desire an extensive 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 must earn at least 28 semester hours of credit in advanced Russian coursework. Required courses are as follows:

- 41:109 Beginning Composition and Conversation I (4 s.h.)
- 41:110 Beginning Composition and Conversation II (4 s.h.)
- 41:111-112 Third-Year Russian I & II (8 s.h.)
- 41:113-114 Fourth-Year Russian I & II (8 s.h.)

Three of the following:

- 41:151 Russian Literature in Transition 1860-1917 (3 s.h.)
- 41:152 Russian Literature in Transition 1917-1997 (3 s.h.)
- 41:155 Trotsky and Roosevelt (3-4 s.h.)
- 41:158 Soviet Literature since Stalin (3 s.h.)
- 41:180 Russian Culture (3 s.h.)
- 41:189 Russian Today (3 s.h.)
- 41:191 Russika Civilization (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, careers 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 backgrounds. In-depth knowledge of literature or linguistics without other substantive background may be of limited practical use in gaining employment.

Honors

Russian majors of junior or senior standing with a grade-point average of at least 3.30 both in Russian and overall may enroll in the honors program in Russian. An extensive reading program with discussions, regular reports, and a seminar paper constitutes each honors work of at least 3 semester hours. Students may take up to 3 semester hours of honors in Russian.

Minor

A minor in Russian requires 15 semester hours with a minimum grade-point average of 2.00. Of these, 12 must be taken at The University of Iowa. The minor may be combined with one of the advanced courses in the Russian major.

The department recommends that students studying a minor in Russian obtain a minimum of 40-week courses, such as the sequences 41:109-41:110, 41:111-41:112, or 41:113-41:114. Classes taught exclusively in English do not count toward the minor.

Graduate Program

Offered 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 in advanced seminars to write effective literature reviews, analyze literary techniques, and develop the ability to analytically 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 its advanced study of contemporary phonology, morphology, syntax, and stylistics.

Candidates for the M.A. must have completed the equivalent of the undergraduate major in Russian. Defendants 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, history, linguistics, science, philosophy, and other languages. Students in the thesis program may earn 4-8 semester hours of credit for their thesis preparation. Prior to scheduling the M.A. examination and submitting the thesis (where applicable), candidates must pass a pass-fail Russian language examination; otherwise they must demonstrate a reading knowledge of either French or German.

Financial Aid

Financial aid is available to graduate students in the form of teaching and research assistantships; it is awarded annually on the competitive basis. Teaching assistantships usually are not awarded to first-year students, although exceptions occasionally are made on the basis of advanced language skills. Fellowships are considered only from students who have been admitted to graduate College. Inquiries should be addressed to the department office.

Elementary and Secondary Teaching Certification

Russian majors interested in certification to teach in elementary and/or secondary schools must successfully complete the requirements for a minor in Russian and must be admitted to the College of Education’s foreign language teacher education program. Seven courses in the College’s Russian major are required of any one semester student teaching in the minor area. Contact the College of Education’s Coordinator of Certification and Information for more information.

Students who plan to use a Russian minor to teach at the elementary and/or secondary language level must contact the College of Education concerning requirements.

Summer and Study Abroad Programs

The department strongly encourages undergraduate and graduate students to participate in extensive programs of language study both in the United States and in Russia. In recent years, many more students have studied in Russia, Sweden, and Estonia. The College offers programs at St. Petersburg State University under the auspices of the Council of International Educational Exchanges, as well as at American Councils for International Exchange programs at a number of Moscow and St. Petersburg institutions that specialize in teaching Russian as a foreign language. Other study abroad experiences have been arranged and refined by Russian language skills in various intensive summer programs at major American universities, including the College of the University of Iowa.

Inquiries should be directed to the Russian Department office.
RECEIVE Area Courses
Course descriptions are available in the appropriate departmental sections of the Catalogue.

ECONOMICS
ECO 101 Principles of Microeconomics 3 s.h.
ECO 102 Principles of Macroeconomics 3 s.h.
ECO 125 International Economics 3 s.h.
ECO 183 Economic Systems 3 s.h.
ECO 184 The Soviet Economy in Transition 3 s.h.
ECO 197 Honor Seminar arr.
*These courses are prerequisites to the economics curriculum at the area of concentration, they do not count toward the 33 semester hours of course work required for the Bachelor of Arts.

HISTORY
HIST 101 Civilization for History Majors 3 s.h.
HIST 174 Medieval Russia 3 s.h.
HIST 175 Modern Russia 1800-1958 3 s.h.
HIST 176 Imperial Russia 1598-1801 3 s.h.
HIST 177 Imperial Russia 1815-1917 3 s.h.
HIST 197 Soviet Union 1917-1953 3 s.h.
HIST 197 Soviet Union 1953-1991 3 s.h.

JOURNALISM AND MASS COMMUNICATION
JMC 155 Mass Media and Society 3 s.h.
JMC 156 Comparative Communication Systems 3 s.h.
JMC 180 Special Projects in Mass Communication arr.
JMC 181 Readings in Communication and Mass Communication 1-3 s.h.
JMC 190 Honor's Reading 1-3 s.h.

POLITICAL SCIENCE
PSCI 101 Introduction to the Politics of Important Worlds 3 s.h.
PSCI 141 Soviet and Post-Soviet Government and Politics 3 s.h.
PSCI 142 Politics in Post-Communist Eastern Europe and Asia 3 s.h.
PSCI 147 Ethnicity, Language, and Religion in the Former Republics of the Soviet Union 3 s.h.
PSCI 156 Politics of Ethnic and Cultural Conflict 3 s.h.
PSCI 157 Nuclear Strategy and Arms Control 3 s.h.
PSCI 168 Foreign Policies of the Former Soviet Bloc 3 s.h.
PSCI 180 Honor's Seminar on Comparative Politics 3 s.h.
PSCI 184 Honor's Seminar on International Politics 3 s.h.

RUSSIAN
RUS 115 Russian Literature in Transition 1800-1860 3 s.h.
RUS 142 Russian Literature in Transition 1860-1917 3 s.h.
RUS 155 Russian Literature and Society 3 s.h.
RUS 181 Soviet Literature to 1954 3 s.h.
RUS 182 Soviet Literature Since Stalin 3 s.h.
RUS 185 Russian Culture 3 s.h.
RUS 186 Russian History 3 s.h.
RUS 191 Russian Civilization 2.0 s.h.
RUS 199 Honors 3 s.h.

FINANCIAL AID
Students are encouraged to apply for a Stalnitsa Undergraduate Scholarship for International Research and Study through the Center for International and Comparative Studies. The scholarships are awarded to outstanding University of Iowa undergraduates who, in close consultation with a faculty member, propose a well-conceived research or fieldwork project on an international topic.

Courses
418:100 Introduction to the Commonwealth of Independent States 3 s.h.
418:100 Foreign Policy and Politics
418:130 Comparative Politics: Eastern Europe and the West 3 s.h.
418:190 Independent Study arr.
418:190 Senior Seminar 3 s.h.
418:199 Honors 3 s.h.

SCIENCE EDUCATION

BACHELOR OF SCIENCE
The B.S. in science education requires a minimum of 33 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 must choose from each emphasis area, within the science education major, biological sciences, earth sciences, earth science, chemistry, physics, physical science, and general science. The requirements for the major with each of the six emphasis areas are as follows.

Biological Sciences Emphasis
At least 25 semester hours must be served in 100-level courses.

Science
2 1 Introduction to Botany 4 s.h.
2 2 Principles of Animal Biology 4 s.h.
2 3 Principles of Plant Biology 4 s.h.
2 4 Principles of Chemistry 4 s.h.
2 5 Principles of Physics 3 s.h.
2 6 Organic Chemistry I 3 s.h.
2 7 Organic Chemistry II 3 s.h.
2 8 Introduction to Geology 4 s.h.
2 9 Accelerology and Geology 4 s.h.
2 10 221 College Physics 4 s.h.

Mathematics courses at the level of 221M or 222 are higher 3 s.h.

Application of Science
97:103 Societal and Industrial Applications of Biological sciences 3 s.h.
97:102 Societal and Applications of Physical Sciences 3 s.h.

97:105 Societal and Environmental Applications of Physical Sciences 3 s.h.
97:140 Problems in Integrating the Teaching of Environmental Science 3 s.h.

Transfer courses from areas such as engineering, biology, and technical schools may be approved for 97:103 or 97:105 with the student's approval.

History/Philosophy/Sociology of Science
97:126 History of Science 2.0 s.h.
Science Education • Liberal Arts 215

Earth Science Emphasis
At least 25 semester hours must be earned in Earth science courses.

Science
- 12.5 Introduction to Geology
- 12.25 Environmental Geology Problems
- 12.6 Evolutions of the Earth
- 12.4 Evolutions and the History of Life
- 12.41 Meteorology
- 12.109 Advanced Historical Geology: An Iowa Perspective

Chemistry
- 12.11 College Physics
- 12.12 College Physics

Applied Science
97.102 Societal and Educational Applications of Earth Sciences and Environmental Sciences

Earth science electives

Application of Science
97.102 Societal and Educational Applications of Earth Sciences and Environmental Sciences
97.103 Societal and Educational Applications of Biological Sciences
97.105 Societal and Educational Applications of Physical Sciences

History/Philosophy/Sociology of Science
- 97.128 Meaning of Science
- 97.130 Science in Historical Perspective

Chemistry Emphasis
At least 25 semester hours must be earned in Chemistry courses.

Science
- 4.15-14 Principles of Chemistry I
- 4.16 Principles of Chemistry Lab I
- 4.21 Organic Chemistry I
- 4.211 Physical Chemistry I
- 4.13 Organic Chemistry Laboratory

Chemistry electives

Application of Science
97.102 Societal and Educational Applications of Earth Sciences and Environmental Sciences

Physics Emphasis
At least 25 semester hours must be earned at the 100-level courses.

Science
- 29.11-12 College Physics
- 29.17-18 Introductory Physics I
- 29.19 Introductory Physics III

Physics electives

Application of Science
97.102 Societal and Educational Applications of Physical Sciences

Physics Science Emphasis
Science
- 4.13-14 Principles of Chemistry III
- 4.16 Principles of Chemistry Lab I
- 4.12 Organic Chemistry I
- 29.11-12 College Physics
- 12.5 Introduction to Geology

Physics electives

Additional physical science electives

Electives must be chosen so as to satisfy at least 21 semester hours in either biological sciences, chemistry, physics, or geology.

Application of Science
Two of the following:
97.102 Societal and Educational Applications of Earth Sciences and Environmental Sciences
97.103 Societal and Educational Applications of Biological Sciences
97.105 Societal and Educational Applications of Physical Sciences

History/Philosophy/Sociology of Science
- 97.128 Meaning of Science
- 97.130 Science in Historical Perspective

Teacher Licensure
Conditions for a bachelor's degree in science education may, but are not required to, be admitted to the teacher education program (TEP). In order to be considered for admission to the TEP, students must have completed a minimum of 30 semester hours of course work with a cumulative grade-point average of 2.30. A limited number of applicants are accepted into the TEP, so having a 2.50 grade-point average does not ensure admission. Admission decisions are based on grade-point average, test scores and other criteria relevant to teaching.

Programs and deadlines for TEP applications are described under "Curriculum and Instruction" in the College of Education section of the Coe College catalog and in the TEP application instructions provided at the College of Education or in the office of the Director of Teacher Education.
to the Colorado School for Education in the Liberal Arts: A General Education Requirement, the requirements for a science education major, and the following professional education courses.

75:19 Psychological and Measurement 3 s.h.
75:19 Sociological Methods I: Elementary School and Practice 2 s.h.
75:19 Secondary Science: Research, Teaching Strategies, and Curriculum Development for K-12 Science 3 s.h.
75:20 Middle/Secondary High School 2 s.h.
75:19 Second Year School Special Education Students Teaching 3 s.h.
75:19 Meaning of Science 2 s.h.
75:19 Science to Rhetorical Perspective 3 s.h.

In addition, they must take the following four general education courses in the minor.

BIOLOGICAL SCIENCES
2.1 Introduction to Botany 4 s.h.
2.3 Principles of Animal Biology 4 s.h.

75:1103 Societal and Educational Applications of Biological Sciences 3 s.h.
75:1103 Biological Sciences electives 9 s.h.

CHEMISTRY
4.1-14 Principles of Chemistry I 10 s.h.
4.16 Principles of Chemistry Lab 1 2 s.h.
95:105 Societal and Educational Applications of Physical Sciences 3 s.h.

PHYSICS
20:1-11-12 College Physics 8 s.h.
Physics electives 4 s.h.
95:105 Societal and Educational Applications of Physical Sciences 3 s.h.

GENERAL SCIENCE
2.1 Introduction to Botany 4 s.h.
12.5 Introduction to Geology 4 s.h.
4.13 Principles of Chemistry I 3 s.h.
20:11-12 College Physics 4 s.h.
Applications elective (97:102 or 97:103 or 97:107) 3 s.h.
Science Electives 6 s.h.

EARTH SCIENCE
12.5 Introduction to Geology 4 s.h.
20:12 General Astronomy 4 s.h.
Geology and astronomy electives 11 s.h.
95:1102 Societal and Educational Applications of Earth Sciences and Environmental Sciences 3 s.h.

PHYSICAL SCIENCE
4.13 Principles of Chemistry I 10 s.h.
4.16 Principles of Chemistry Lab 1 2 s.h.
20:11-12 College Physics 8 s.h.
12.5 Introduction to Geology 4 s.h.
95:105 Societal and Educational Applications of Physical Sciences and Environmental Sciences 3 s.h.

95:105 Societal and Educational Applications of Physical Sciences 3 s.h.

Special Rules
Since the Science Education Program may involve many faculty members 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 science credit in science must be earned at The University of Iowa.
- No science courses with the departmental prefix 1 or 2 or credit from the CIDP Natural Science General Examination may be used toward the major in science education.
- Science courses taken in other colleges of the University, Colleges of Engineering and Medicine will not be accepted in lieu of the required coursework for the major unless one of the science departments of the College of Liberal Arts certifies in writing to the Office of the Registrar that such a course is equivalent to the one offered in that department.
- Courses used for the major may not be taken pass/fail; grades from all courses used for the science education major are used in computing a student's grade-point average in

Honors
To graduate with honors, students must maintain a 3.20 grade-point average and complete 49:99 Honors Research Project in addition to other science education requirements.

Iowa-SSST and the Iowa Science and Humanities Symposium
The Iowa Secondary School Science and Humanities Symposium is a special summer program that emphasizes research opportunities for talented secondary school students. Participants register for credit, and undergraduate students are placed in research laboratories in a variety of science areas. Various programs, such as the Young Scientists and Minority Apprenticeship Programs, are hosts of Iowa-SSST when funding is obtained.

The statewide Iowa Junior Science and Humanities Symposium is sponsored by the U.S. Army Research Office each February involving some 150 students and 40 teachers. The program emphasizes career opportunities in science and related fields by focusing on recent developments in science research at The University of Iowa.

Graduate Programs
The Science Education Program offers graduate studies leading to the Master of Arts in Teaching, Master of Science, Educational Specialist, 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 of faculty and graduate students include the following: studies of effective teaching and learning, artificial and other effective computer-supported instruction, philosophical and sociological foundations of science, interdisciplinary planning, computer-oriented learning, classroom interaction studies, creativity, science outcomes, perception of learning, intellectual development in science, science education in less developed countries, and health education.
Special Programs

The Iowa Chautauqua Program brings 250 science teachers grades K-12 to live workshops, which focus on introducing teachers to new science/technology/society materials and approaches. The Chautauqua Program also provides year-long, service support to teachers across Iowa. The Iowa Utility Association, in cooperation with The University of Iowa, sponsors the Iowa Chautauqua Program.

Other programs include Project STEPS, which helps upper elementary and middle school teachers use and evaluate logical and higher order thinking skills, and Project PCOCIS, a recently funded NSF program that allows inside middle school teachers to conduct educational research. Additional efforts focus on strategies for teachers who work with gifted and talented students and programs that simulate international faculty exchange.

Many Science Education Center activities are funded by NSF, Title II, the Iowa lottery program, and industries such as the Iowa Utility Association. Many teachers involved in these programs are admitted into degree programs.

International Programs

Science education faculty members have collaborated on a number of international research and development projects in countries including Brazil, India, Spain, Portugal, Israel, Nigeria, Malaysia, Indonesia, Korea, Australia, Taiwan, South Africa, Mexico, and India. Several have been Fulbright scholars and international study trips have become commonplace.

International students enrich the opportunities for all students in the Science Education Center. Many have entered these programs from Brazil, Korea, Malaysia, Filipina, Taiwan, and other nations around the world. Relationships are maintained and new collaborative efforts are under way each year.

Facilities

The facilities for science education programs at The University of Iowa are exemplary. They include two main offices, family, secretarial, and graduate assistant offices; a self-instructional computer laboratory; a photographic laboratory; instructional classrooms, including space for elementary and secondary school science methods courses; application-oriented courses, a large seminar room used as an instructional center for the history and philosophy components of science education and secondary teacher education programs; a departmental conference room used for seminars, conferences, meetings, workshops, and in-service work with teachers, supervisors, and administrators; and a common area for small group discussion and institutional 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 (in addition to the undergraduate emphasis area in Science education and to provide science options for elementary education majors).

Primarily for Undergraduates

9702 Cooperative Education Internship 3.0 h.
9707 Participatory Science 4.0 h.
Science projects and activities investigate from practical, life, work situations, focus on problem solving and project skills in science.
9730 Laboratory in Science 3.0 h. Special projects: Open only to secondary school students. May be repeated.
9749 Science Research Project 3.0 h.
For Undergraduates and Graduates

9702 Societal and Educational Applications of Earth Sciences and Environmental Science 3.0 h.
Major issues and options of earth and environmental sciences, emphasis on current applications in society's work.
9703 Societal and Educational Applications of Biological Sciences 3.0 h.
Basic conceptual framework of biology, how they have been defined, explained on a current social level relevant to biology.
9705 Societal and Educational Applications of Physical Sciences 3.0 h.
Major issues of physics and how they have been defined, explained on a current social level relevant to physics.
9706 Societal and Educational Application of Chemical Concepts 3.0 h.
Chemical concepts of science as applied to industry, commerce, and daily life.
9707 Test Design 3.0 h.
Test theory, test construction, item design, test validity, test-retest reliability, testing, scoring.
9708 Experimental Test Design 3.0 h.
Process in the laboratory, methodology of suitable research, design of studies guided.
9709 Mercer Study 3.0 h.
How research, facts and other guides in social science, social, economic, cultural, educational, research, social science.
9711 How to Design a Study 3.0 h.
Designing a research study, research, survey, observational, experimental, designing a statement, designing an experiment, designing a research plan, designing a study.
9715 Introduction to Measurement 3.0 h.
Gestalt, Heuristics, Sets, Set 24-10, 74:13, 75:14, 113:582.
9719 Directed Study 3.0 h.
9720 History of Science 3.0 h.
Critical examination of scientific concepts from ancient, religious, cultural, technological civilizations.
9730 Science in Historical Perspective 3.0 h.
Science as it impact contemporary social issues from perspective of scientific developments.
9746 Problems in Integrating the Faculty of Environmental Science Education 3.0 h.
Basic social, political, ethical, scientific, environmental, governmental, socialized (diversified) view of environmental education of K-12 teaching.

SOCIAL STUDIES

Undergraduate degree: B.A. in Social Studies
Graduate degrees: M.A. in Social Studies, Ph.D. in Education

Undergraduate Program

The major in social studies is an interdisciplinary, nonprofessional major. It provides an introductory perspective to social sciences in areas such as law, political science, sociology, urban planning and development, and government services at all levels.

General Program

Major requirements for the B.A. in social studies total 60 semester hours of credit earned in departments comprising the social studies education program.

Students choose three 20-semester hours of credit from approved courses in the social studies education program.

PLAN A

U.S. history or world history 15.0 h.
American government/political science 15.0 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.

There is no separate honors program in social studies. Students who qualify for the Honors Program are encouraged to do honors work in the social science department in which they wish to concentrate their work. A global studies certificate may be obtained in conjunction with the social studies major. See "Global Studies" in the section of the Catalog: Teacher Licensure/Certification Program.

Students who want to obtain a teaching license/certificate in history or other social science areas must declare a major in the academic field they want to teach and earn a total of 30 semester hours in that field. They must also complete 15 semester hours in each of two fields related to history or social science. Major and related fields may be selected from the following: U.S. history, non-U.S. social history, anthropology, economics, sociology, geography, political science, or psychology. Courses must conform to departmental requirements for the major. In certain instances, students are assigned an advisor to their major area as well as in social studies.

Additional information on social studies teacher licensure/certification programs is available from

Social Studies ● Liberal Arts 217
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 counselors in schools, 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 positions 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 classrooms and other 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 in the College of Education section of the Cal Poly catalog "Curriculum and Instruction." 

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 an 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 are described in the College of Education section of the Cal Poly catalog "Curriculum and Instruction." 

Facilities

Social studies students have access to the facilities and faculties of the cooperating departments of the College of Education and the College of Humanities. Special agencies and services also are available, such as University Hospital School of Health Services, the Iowa Junior College Center for Education in Politics, the Bureau of Educational Research, the Institute for Public Affairs, the Iowa Educational Information Center, the Curriculum Laboratory, the Statistics Consulting Center, the computer laboratory, and Wieg Computing Center.

Faculty members who serve as social studies advisors 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 and in in-service work, and in working with schools in curriculum revision.

Sociology

Director: Catherine F. Allen
Professor: Paul L. Brick, James D. Davis, K. Wayne Wilson, Thomas W. Wilts
Professor emeriti: H. M. Anderson, Frank Z. Clark, Mildred Seiler

Assistant professor: Woodrow W. Martin, Bertram C. Thorp

Available for the M.A. in Sociology:

M.A. in Sociology:

Sociology: 12 hours in Sociology 33-11

33-1 Elementary Sociology 3-1-1

33-1 General Psychology 4-1-1

33-1 Introduction to Sociology 3-1-1

Any basic economics course 3-1-1

43-2 Introduction to Social Work 3-1-1

Junior Year

43-15 Part and Discretions or

53-1 Approval course from another department (see School of Social Work for list)

43-10 Human Behavior in the Social Environment 4-1-1

43-17 Fundamentals of Social Work Practice 3-1-1

43-12 Intercultural Skills Laboratory 1-1-1

43-14 Social Work Research 3-1-1

43-17 Social Work Processes 3-1-1

Senior Year

43-143 Social Welfare Policy and Practice 3-1-1

43-192 Experience Seminar 1-1-1

43-193 Field Experience 8-1-1

Other Courses

The undergraduate program requires a minimum of 12 semester hours of course work in one department listed below. Most students select either sociology or psychology. Courses used to meet General Education Requirements do not count toward the 12 semester hours, but do the specifically required social science course.

American studies

Anthropology

Biology

Communication studies

Economics

Education

English

History

Judaism

Language studies

Political science

Psychology

Sociology

Spanish

Honors

The School of Social Work has an honors program leading to a Bachelor of Arts with honors in social work. A 30-hour cumulative grade-point average is required for participation in the honors program, which enables students to do in-depth study in subjects of interest to them.
Minor
A minor in social work requires a minimum of 15 credit hours in social work courses with a minimum grade-point average of 2.00. At least 12 semester hours must be taken at the University of Iowa in courses numbered 42:100 and above. 42:22, or its equivalent at another institution, is a prerequisite to many upper-level social work courses.

Admission
A limited number of students are admitted to the major. Applications are processed each December. Admission to the undergraduate program in social work requires:
• completion of 42:22 Introduction to Social Work with a grade of C or higher (can be taken the following year);
• a cumulative grade-point average of at least 2.50; and
• completion of the application process.
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.
More information is available from the School of Social Work admission coordinator.

Graduate Program
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. No common gaze, to be met among all as a set of common 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, Israel 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 includes 25 semester hours of foundation level courses and 35 semester hours of advanced-level courses. Students who have a B.S.L.W. from a CSWE program receive 15 semester hours of advanced standing and earn the degree with 45 semester hours. A limited number of students are admitted to a 36-hour, full-time program. All students must earn a minimum of 36 hours after admission to the M.S.W. program.
Up to 14 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 degree. Students with equivalent foundation course content taken in departments or programs other than accredited social work programs that pass a qualifying exam for the University Foundation course are accepted in order to receive partial advanced standing. Nine to 12 semester hours of graduate assistantship credit may be allowed for previous graduate work.

The school operates a year-round, segmented program that begins in the fall semester for full-time students who need the fall 60 semester hours. The program continues through the summer, which is a full semester. Full-time students who complete the entire 60 semester hours after admission generally earn the M.S.W. in the spring semester of their second year. Those who require 45 semester hours enter the program in the second semester (January). Students in the 30-semester-hour program begin their course work in the third semester (May). The 30-semester-hour program is available only for full-time students.
Part-time students go through the program at a slower pace. Students who need the full 60 semester hours complete the program in four years.
A special intensive summer program has been designed to enable students from Des Moines and the Cedar Rapids area to enroll in Iowa City.
Students must maintain at least a 3.00 cumulative grade-point average; must be enrolled in one semester in compliance with the Student Advancement Policy; and must successfully complete a master’s comprehensive examination, an integrative paper involving evaluation of practice, prepared in conjunction with a practicum seminar in the final semester. Students must elect a thesis option for credit and use the oral defense as their final examination. The following is an outline of the full-time 60-semester-hour program.

First-Year Foundation
Fall Semester
42:144 Human Behavior in the Social Environment 4.00
42:145 Social Welfare Policy 3.00
42:146 Social Welfare Policy and Practice 3.00
42:147 Social Welfare Policy and Practice 3.00
42:148 Social Welfare Policy and Practice 3.00
42:291 Foundation Practicum Seminar Electronic 2.50
Total 15.50

Spring Semester
42:144 Social Work Research 3.00
42:145 Organization and Community Practice 3.00
42:147 Bacteriology, Parvovirus, and Polio 3.00
42:291 Foundation Practicum Seminar Electronic 2.50
Total 15.50

Summer Session
Electronic—including replacement field practice courses 4.00

Second-Year Concentration
Fall Semester
42:250 Family Systems Theories 3.00
42:254 Interdisciplinary Systems Theories 3.00

42:270 Advanced Research 3.00
42:292 Advanced Practicum in Family Systems 3.00
42:293 Advanced Practicum in Interdisciplinary Systems 5.00
42:294 Advanced Practicum Seminar in Family Systems I 1.00
42:297 Advanced Practicum Seminar in Interdisciplinary Systems I 1.00
Total 12.50

Spring Semester
42:251 Family Therapy 3.00
42:252 Social Work Practice in Interdisciplinary Settings 3.00
42:256 Family Policy, Domestic and International 3.00
42:292 Advanced Practicum in Family Systems 3.00
42:293 Advanced Practicum in Interdisciplinary Systems 5.00
42:294 Advanced Practicum Seminar in Family Systems II 1.00
42:298 Advanced Practicum Seminar in Interdisciplinary Systems II 1.00
Thesis or elective 2.00
Total 12.50

Concentrations
After admission, students choose between two concentrations: family systems or interdisciplinary systems.

Family and Individual Systems
Desired to prepare students for direct service practice with individuals, families, and small groups, this concentration focuses on therapeutic endeavor with individuals and families.
This type of social work practice, based on clinical social work, requires specialized training in various approaches to psychosomatic assessment and treatment of individuals and families facing psychological and social problems. It is carried out in a variety of settings, including family service agencies and mental health care centers. Treatment in this specialty focuses on both individual and societal factors and serve clients who are generally not served by other therapists (i.e., the economically deprived, the mentally retarded, and institutionalized).
The theoretical basis for this concentration is family systems theory, which emphasizes interpersonal factors over intrinsic factors in explaining human behavior. Several approaches must be used under this theoretical framework, but they must share common assumptions and practice methods and be linked. In several elective recommended courses, other...
approaches (e.g., psychoanalytic, behavioral) are studied and coupled with experimental approaches. Family policy and its effects on direct practice are studied as are research approaches especially useful in clinical work, such as single subject, case analysis, and outcome studies.

Interdisciplinary Systems

This concentration emphasizes theoretical knowledge and skills for indirect and direct social work practice in multi-disciplinary settings, such as public and private human service organizations, hospitals and clinics, schools, business, and industry, and corrections. It is designed to enable students to collaborate with professionals from diverse disciplines, serve on inter-disciplinary assessment and treatment teams, run case management, coordinate services in in-home and inter-generational systems, and create program and policy change that will improve services to clients. Students learn to assess the needs of clients and to advocate for their needs across departments and organizational boundaries, as well as across other professions and disciplines.

The effectiveness of social workers as service providers and agency of change requires an understanding of organizational and inter-disciplinary dynamics as well as knowledge of policy and program development. Students acquire skills related to assessment, integration of research theory with direct and indirect practice, program development, planning, policy making, administration, and evaluation, community organization, and social action.

Off-Campus Centers

The full-time program is available in Iowa City and Des Moines. At the end of the first calendar year, some students may stay in the Iowa City Cedar Rapids area for the remainder of their program, including practicum, and some are assigned to Des Moines or the Quad Cities for practicum. Students may need to relocate.

The Des Moines Center, 115 miles west of Iowa City, is located in Iowa's state capital and-largest city. The Quad Cities Center is located on the Mississippi River in Davenport, 80 miles east of Iowa City. 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 the program. Some elective courses are available in the Quad Cities.

Part-Time Program

The School of Social Work also has a part-time program in three locations: Iowa City, Des Moines, and the Quad Cities. In Iowa City and Des Moines, students are admitted each fall, and in the Quad Cities, a group of part-time students is admitted every three years; the next group will start in August, 1994. Registrars and academic advisors teach required courses in all centers and are available for advising.

The off-campus programs have been evaluated by CSWE and The University of Iowa Graduate Council as providing a comparable program to that available on the Iowa City campus. Part-time students complete two courses each fall and spring semester for three or four years. Electives may be taken concurrently with fall and spring semester courses and in the summer. A full range of summer courses is available in Iowa City, and some courses are available in Des Moines. The format for most Iowa City summer courses is intensive, short-term, and split session, enabling students from other centers to take campus courses.

Joint Degree Programs

The school has formal agreements with the College of Law and the Department of Urban and Regional Planning for joint degrees. Students must be accepted to each department through its regular admission process. Up to nine semester hours in each program are applied to requirements of the other, thus reducing the time it would usually take to pursue two degrees. Individual arrangements may be made with other departments. Students have pursued joint degrees with the College of Business Administration, College of Education, American Studies Program, School of Religion, School of Journalism and Mass Communications, and others. Students are encouraged to take courses in other departments whatever or not they are pursuing joint degrees.

Cooperative Programs

In cooperation with the Counselor Education Program in the College of Education, a curriculum has been designed around the requirements of the American Association of Marriage and Family Therapy (AAMFT). Graduate of accredited M.S.W. programs are eligible for associate membership upon fulfilling certain curriculum requirements at the graduate level. Courses are not automatically accepted; graduate need to demonstrate that they meet 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 concurrent with the M.S.W. program; they must apply independently to the coordinator of the Aging Studies Program.

The school also participates with the College of Education to provide curricula that meet requirements for school social work certification in Iowa. Students can earn certification concurrent with the M.S.W. program. Students apply for certification, as other students, to the Dean in the College of Education.

Special Projects,
Travel/Study Seminars

Students may become involved in special projects such as the National Resource Center on Family Board Services and the School of Social Work gerontology programs. The school also offers students the opportunity to participate in travel/study seminars in Urban, rural, national, and international settings.

Admission

The criteria for admission for full-time and part-time study in the 40-45 semester-hour M.S.W. programs are:

- a bachelor's degree from an accredited college or university, with a reasonable distribution of courses in the social sciences and humanities;
- a 3.00 or higher grade-point average for the junior and senior years of undergraduate study, or for 12 semester hours of the upper-level graduate course work for interdisciplinary students;
- a Graduate Record Examination (GRE) score;
- three positive letters of recommendation, including one regarding academic abilities and one or more regarding social service or other work experience; and
- a personal statement addressing criteria specified by the School of Social Work.

Previous experience in the human services (volunteer, paid, or employment) is desired. Previous enriching life experience (cross-cultural and international experience and background, and minority status) also are given consideration.

Foreign applicants must score at least 600 on the Test of English as a Foreign Language (TOEFL). Applicants who are especially strong candidates on the basis of other criteria may be admitted even if their grade-point average is below 3.00.

Since the school seeks to maintain a heterogeneous student body, it makes special efforts to admit students who represent a diversity of social, ethnic, and socioeconomic backgrounds. Students with disabilities also are encouraged to apply. Applications are accepted beginning September 1 and must be completed by February 1 to be considered for the next academic year. Students in the 40-45 semester-hour program begin in January, and the 30-36 semester-hour class and meet the same application deadline. Students begin the following semester. Applications for the 30-36 semester-hour program must be completed by January 1.

The University of Iowa, a degree from a CSWE-accredited social work program;

- a 3.00 or higher grade-point average for the junior and senior years of undergraduate study;
- a Graduate Record Examination (GRE) score;
- a minimum of two years of full-time work experience after receipt of a bachelor's degree; and
- completion of a basic statistics course and proficiency in the use of microcomputers (UICP) received in these two areas are not applied toward the M.S.W. degree;

A complete statement of graduate admissions policies is available upon request.
225:153 Introduction to Probability and
Statistical \textit{\textcopyright 2015} - \textit{Sociology} • \textit{Liberal Arts} \hfill 223

3 s.h.

3 s.h.

All majors are advised to take a 3 semester hour of course work in at least one of these departments: anthropology, economics, geography, political science, or psychology. A list of complete requirements for a sociology major is available in the department office.

To encourage development of a broad knowledge of sociology, the department requires that majors complete at least one course numbered 100 or above in each of three areas selected from the following list: "Advanced Courses" in this section of the College's social science, statistics and methods of research, social psychology, deviance, deviate, crime, social norms, social institution and social change, and content and population; social class, inequality, race, and organizations. This requirement does not apply to minors in sociology.

Departmental requirements are the same for transfer students as for other students. While some courses taken at other colleges are applicable toward the major, the department requires that transfer students majoring in sociology take at least 12 semester hours in sociology at the University of Iowa.

Students who wish to obtain teacher certification in the social sciences while majoring in sociology should contact the Department of Curriculum and Instruction in the College of Education.

Honors The University Honors Program provides a stimulating and integrative educational experience for undergraduate students. A student must have a grade point average of 3.20 overall and in sociology courses. The honors curriculum consists of limited-enrollment classes in which students engage in in-depth issues of mutual interest with faculty and with each other.

The special requirements for honors degree in sociology are completion of 34:300 Honors Seminar in the junior year, one advanced undergraduate course or graduate course, approved by the honors director, and an honors thesis. The honors thesis provides an opportunity to do sociological research in consultation with a faculty member of the student's choice. As an option, honors students may take the honors section of 34:1 Introduction to Sociology: Principles, thereby waiving the course requirement of 34:2 Introduction to Sociology: Problems for a degree in sociology.

Minors In addition to its programs for majors, the department provides supportive course work and several standards of value to undergraduate students who wish to combine a minor in sociology with a major in another field, particularly a social science, business administration, elementary education, or

nursing. The requirements for a sociology minor are:

- A minimum of 15 semester hours of credit in sociology courses with a grade point average of 3.00 or higher;
- At least 12 of the 15 semester hours must be taken at the University of Iowa in courses numbered 34:100 and higher; and
- No course accepted toward the minor may be accepted toward a major.

A brochure describing minors in sociology is available in the department office.

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, teaching, and evaluation of methods are readily available in the department.

Master of Arts The M.A. requires 24 semester hours with a thesis or 36 semester hours without a thesis. The program without thesis is intended for persons who desire a terminal degree and for whom a wider range of course content is sociologically appropriate.

All candidates for the M.A. must complete the following:

- 34:200 Historical Sociological Theory
- 34:201 Sociological Theory
- 34:214 Elementary Statistics and Data Analysis
- 34:215 Sampling, Measurement, and Observation Techniques
- M.A. in Criminal Justice and Corrections

This program is designed for individuals who wish to work in criminal justice. Since it is expected that a sociologist's orientation and background is extremely valuable for such work, the major emphasis is on the sociological. It also is recognized that the necessary training is essential to performance of specific criminal justice roles; therefore, students must complete 15 semester hours of course work in each area such as legal process, administrative procedures, or direct intervention techniques in order to broaden their knowledge. The flexible curriculum allows students, in consultation with their advisor, considerable choice in selecting courses that will best enable them to achieve their career goals.

A limited number of students enter the program each year, so a low student faculty ratio is maintained. Internships are available with local criminal justice agencies. Successful completion of this program requires a minimum of 36 semester hours of graduate credit, a 3.00 grade point average on all work taken, and a master's paper (not a thesis).

Joint Program in Sociology and \textit{\textcopyright 2015} - \textit{Sociology} • \textit{Liberal Arts} \hfill 223

Students may obtain a Master of Arts in sociology and a Juris Doctor by fulfilling the basic requirements of both programs. They may apply by 12 semester hours of graduate credit, satisfy the requirements of either degree, enroll both the M.A. in sociology and the 90 semester hours required for the J.D.

This cross-credit, 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 34:316 (Intermediate Statistics and Data Analysis) and 3 elective semester hours in methodological statistics. Candidates also must pass comprehensive examinations and write a dissertation.

All doctoral candidates are examined in the basic tool areas of sociology—theory, history of theory, methodology, and statistics—and in one major and one minor area chosen from the areas represented by the faculty, such as social psychology, deviance, research methods, and international social relations, organizations, political sociology, theory, methodology, and statistics. A detailed statement of regulations for graduate study also is available upon request. Prospective doctoral candidates should examine these furnaces carefully.

Special Workshops The department organizes a series of workshops each semester on new and interesting research materials that are not in the standard thematic sequence. Each workshop informs students about the problems for which the method is applicable, gives an introduction to its theory, and shows how the method is actually used in a research setup. Topics covered in recent years include USLS, meta-analysis, simulation techniques, survey history analysis, and time-series analysis.

A biweekly theory workshop on topics and methodology attracts both faculty members and graduate assistants.

Admission Admissions to graduate study in sociology usually requires a minimum undergraduate grade point average of 3.50 and a score of 1100 from
the quantitative plus verbal sections of the Graduate Record Examination (GRE) General Test. Foreign 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), the applicant 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 prior to the start of the academic season for which admission is being sought. The deadline for applying for departmental fellowship support is February 15, although evaluation of applications begins in January. Admission decisions are based on consideration of prior academic performance, personal references letters, scores on the GRE General Test, and the applicant's statement of reasons for pursuing advanced work in sociology. The department has some 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 administration committee, Department of Sociology.

Admissions to the UGA program in criminal justice and corrections requires a B.S. or a B.A. degree, a grade-point average of 2.75, and a combined score of 1000 on the SAT I (Math+Critical Reading), and 21 in the Writing section and verbal sections of the GRE General Test. A departmental audition is available at the department office.

Financial Aid
The Department of Sociology offers four types of awards: graduate assistantships; teaching assistantships; research assistantships, University of Georgia Foundation, and graduate Opportunity at low rates of return. Students are encouraged to apply for federal and state student aid to reduce their out-of-pocket costs who are admitted to the department. Students who are accepted for admission are offered assistantships to work 20 hours each week for the duration of the semester and receive an annual stipend. Students who are admitted to the department are also eligible for fellowships that provide additional financial aid.

Research Facilities
Social Psychology
The department's 16-room subgroup laboratory includes eight computer-controlled subject rooms with audiovisual and participant observation capabilities, two large group rooms with an adjoining observation booth, an audiostreaming control room, an instrument shop, and other flexible research office spaces.

Survey
The Social Science Survey Research Center and the Iowa Urban Research Center offer facilities, staff, and data archives for conducting surveys and secondary data analysis. Computer-aided telephone surveys can be conducted next month.

Computer Facilities
The department operates a remote computer terminal and personal computer cluster adjacent to graduate student offices. Both terminals and personal computers can access mainframe computer programs that provide all the usual statistical and mathematical computing programs.

Courses
For Undergraduates
Courses open to freshmen without prerequisites: 341, 342, and 343, all other undergraduate courses with business/statistics prerequisites.

346: Contemporary Sociology Seminar 3 a.h.
Registration is on a space available basis, and by permission of the instructor. This course is open only to sociology majors.

346: Introduction to Sociology: Principles 3 a.h.
This course is required for all sociology majors, sociology majors to sociology and non-sociology majors, and those interested in the broader social sciences. The course covers the basic theoretical and methodological issues in the study of society, and provides a broad introduction to the social sciences.

347: Theory, Research, and Statistics 3 a.h.
This course provides a basic introduction to sociology, emphasizing the elements of statistical analysis. This course is required for sociology majors and non-sociology majors. The course is open to all students and provides a broad introduction to sociology.

347: Theory, Research, and Statistics 3 a.h.
348: Research in Sociology: Cautionary Note 3 a.h.
This course is required for all sociology majors and non-sociology majors. The course is open to all students and provides a broad introduction to sociology.

348: Research in Sociology: Cautionary Note 3 a.h.

348: Social Thought 3 a.h.
Introductory Sociology 3 a.h.

348: Social Thought 3 a.h.
Introductory Sociology 3 a.h.

348: Social Thought 3 a.h.
Introductory Sociology 3 a.h.

349: Advanced Sociology: Cautionary Note 3 a.h.

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349: Advanced Sociology: Cautionary Note 3 a.h.
The department provides course work for undergraduate and graduate majors in Spanish or Portuguese, for the satisfaction of foreign language requirements for baccalaureate and advanced degrees in other fields, and for the satisfaction of the second language requirement for undergraduate majors in comparative literature.

Knowledge of foreign language and culture is indispensable in many career areas. Students majoring in Spanish or Portuguese may find opportunities in fields such as business, transportation, industry, journalism, international broadcasting, publishing, teaching, research, library work, and translation.

**Undergraduate Programs**

**Bachelor of Arts in Spanish**

Elementary and intermediate courses in Spanish introduce five performance goals—listening, reading, writing, speaking, and culture knowledge—in a staged progression that has an overall goal of developing and proficiency. Emphasis is given to the acquisition of Spanish skills through communicative contexts and enrichment of vocabulary through an introduction to Hispanic culture, and the development of grammatical accuracy in speaking and writing. Elementary and intermediate Spanish courses meet daily and are taught in Spanish.

The undergraduate major in Spanish may be completed with an emphasis in Spanish language and linguistics, Latin American studies, or Spanish and Spanish-American literature and culture. The Latin American studies track of the Spanish major requires study of Spanish language and literature and culture, in addition to study of Spanish language and Spanish-American literature and culture.

**Language and Linguistics Track**

Designed for students interested in pursuing in-depth study of the Spanish language and linguistics, and for those who want to prepare themselves for graduate work in Spanish linguistics, careers in secondary education, or a variety of business careers, the language and linguistic track requires a minimum of 34 semester hours of credit in course work-as follows:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>35:107-108</td>
<td>Advanced Spanish Language</td>
<td>4.00</td>
</tr>
<tr>
<td>35:111</td>
<td>Introduction to Hispanic Linguistics</td>
<td>3.00</td>
</tr>
<tr>
<td></td>
<td>Spanish, Spanish-American, Portuguese, or Brazilian Literature</td>
<td>6.00</td>
</tr>
<tr>
<td>At least 15 semester hours must be taken from the courses listed above; at least 3 of the three groups of courses must be represented.</td>
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**LITERATURE**

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<tr>
<th>Course Number</th>
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<tbody>
<tr>
<td>35:103</td>
<td>Written and Oral Expression</td>
<td>3.00</td>
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<tr>
<td>35:105</td>
<td>Cultural and Communicative Skills in Spanish</td>
<td>3.00</td>
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<tr>
<td>35:108</td>
<td>Problems in Spanish Grammar</td>
<td>3.00</td>
</tr>
<tr>
<td>35:109-110</td>
<td>Senior Spanish Language</td>
<td>4.00</td>
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**Technical Communication**

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<th>Course Number</th>
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<tbody>
<tr>
<td>35:111-112</td>
<td>Spanish Communication</td>
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**Spanish-American literature**

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<td>35:105-106</td>
<td>Spanish-American Literature</td>
<td>3.00</td>
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<tr>
<td>35:107</td>
<td>Introduction to Hispanic Literature</td>
<td>3.00</td>
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<tr>
<td>35:171</td>
<td>Spanish Mythology</td>
<td>3.00</td>
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<tr>
<td>35:188</td>
<td>History of the Spanish Language</td>
<td>3.00</td>
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**PORTUGUESE**

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<tr>
<td>35:100</td>
<td>Portuguese</td>
<td>3.00</td>
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<tr>
<td>35:121</td>
<td>Portuguese for the Professions</td>
<td>3.00</td>
</tr>
<tr>
<td>35:122</td>
<td>Portuguese Language</td>
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</table>

The remaining 6 semester hours of elective course work must be taken at the 100 level in either the Department of Spanish and Portuguese or the Department of Linguistics. No more than 4 of the 34 semester hours required for the language and linguistics track may be taken in English.

**Latin American Studies Track**

The Latin American studies track is designed for students interested in pursuing interdisciplinary study of Spanish-American and Brazilian literature and the ways in which knowledge of both Spanish and Portuguese, and for those who wish to prepare themselves for graduate work in the humanities or social sciences, for study at professional schools such as law, journalism, or business, or for a variety of business careers. It requires a minimum of 35 semester hours of credit in course work, as follows:

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<tr>
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<td>Portuguese</td>
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<tr>
<td>35:101</td>
<td>Portuguese</td>
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<tr>
<td>35:120</td>
<td>Portuguese Language</td>
<td>3.00</td>
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<tr>
<td>35:121</td>
<td>Portuguese</td>
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**Additional Portuguese Language**

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**Technical Communication**

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<td>Spanish Communication</td>
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**Spanish-American literature**

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<td>35:105-106</td>
<td>Spanish-American Literature</td>
<td>3.00</td>
</tr>
<tr>
<td>35:111</td>
<td>Introduction to Hispanic Literature</td>
<td>3.00</td>
</tr>
<tr>
<td>35:171</td>
<td>Spanish Mythology</td>
<td>3.00</td>
</tr>
<tr>
<td>35:188</td>
<td>History of the Spanish Language</td>
<td>3.00</td>
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</table>
who want to prepare themselves for graduate work in literature, study of professional schools such as law, journalism, or business, or for a variety of business careers. It requires a minimum of 34 semester hours of course work, as follows:

**Spanish and Portuguese**

- **Introductory Spanish Language** 4 s.h.
- **Additional Spanish or Portuguese Language or Linguistics** 5 s.h.
- **Spanish and Portuguese-American Literature and Culture** 24 s.h.

Among the 24 semester hours taken in literature and culture, at least 12 semester hours must be taken in the Spanish area and 3 of these in the Spanish-American area. No more than 3 of the 34 semester hours required in the literature and culture track may be taken in English.

**Elementary and Secondary Teaching Certification in Spanish**

Spanish majors interested in certification to teach in elementary and/or secondary schools must successfully complete the requirements listed above for one of the three undergraduate tracks in Spanish, as well as to be admitted to the College of Education's foreign language teacher education program. Several courses in the College of Education are also required, as is one semester of student teaching, taken in the senior year. Contact the College of Education for further information.

Students who plan to use a Spanish minor to teach at the elementary and/or secondary level must contact the College of Education concerning the requirements.

**Honors in Spanish**

Admission to the honors program in Spanish requires a minimum 3.00 total cumulative grade-point average and a minimum 3.20 average in Spanish. Candidates with honors in Spanish majors, in addition to the semester hour for the various upper-division courses described above, are also 3 semester-hour courses in literature offered in the Spanish-American area (for example, Hispanic Research and Thesis, plus another 3-semester-hour course to be designated) in consultation with the department honors adviser. Included are an honors report in Spanish and a meeting with a faculty committee, conducted in Spanish.

**Transfer Credit for Spanish Majors**

A maximum of 12 semester hours of credit in Spanish at another institution may be transferred. Students must receive permission from the department chairman or the department honors adviser before registration.

**Minor in Spanish**

A minor in Spanish requires 15 semester hours of course work in Spanish with a minimum grade-point average of 2.00, of which must be taken at the University of Iowa or a University of Iowa foreign study program in courses numbered 100 and above. Students may not elect 35:101, 35:102, 35:115, or 35:117 to fulfill requirements for the minor. No more than 3 semester hours may be applied toward the minor from departmental courses taught in English.

**Foreign Study Programs in Spanish**

The department participates in a number of study-abroad programs. For summer programs include the State Board of Regents Hispanic Institute (Valdese, Spain) and the CEIE Summer Program in Mexico. Included in the semester or year-long programs are the CEIE Language and Area Studies Program (Alcorce, Spain), the CEIE Language and Society Program (Sevilla, Spain), the CEIE Liberal Arts Program (Seville, Spain), the CEIE Business and Society Program (Sevilla, Spain), and the University Studies in the Iberian Country Seminars (Sevilla, Spain). 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.

International Business Certificate

The College of Liberal Arts and Business Administration offers a minor program leading to a Certificate in International Business. The program consists of study of international business and economics, international relations, and a foreign language, such as Spanish or Portuguese, and related area studies. It is designed not only to 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 provides students with the areas of specialization to their interests and to complement majors in both liberal arts and business administration.

Contact the Office of Academic Programs in the College of Business Administration for more information.

**Latin American Studies Certificate**

The department plans an important and active role in the Latin American Studies Program, an interdisciplinary undergraduate program focusing on the history, politics, social organization, economics, art, and literature of Latin America. Work in the program leads to a certificate or minor in Latin American studies.

To receive the certificate, students must have sufficient competence in Spanish or Portuguese to do background reading in an language.
before enrolling in the required senior seminar. Further information on the Latin American Studies Program, see "Latin American Studies Program" in this section of the Catalog.

Courses for Undergraduate Nonmajors
Undergraduate students in other disciplines may petition to take the College of Liberal Arts General Education Requirements in humanities and foreign civilizations and cultures, with a 3.00 Contemporary Latin American Niche and 3.20 Contemporary Brazilian Niche, in which the readings are in English. The department offers several other literature, film, and culture surveys courses that are taught in English and are of general interest.

Graduate Programs

Master of Arts in Spanish
Candidates for the M.A. must have completed the equivalent of the undergraduate Spanish major with at least a 3.90 grade point average in core course work for the major. Deficiencies may be remedied with the appropriate course work.

The following course work is required.

3.20 Foreign Language Teaching Methods
3.0
3.20 Spanish Literature
3.0
3.20 Spanish-American Literature
3.0
Fifteen semester hours of elective courses at the 200 level in the advanced 100 level, no more than 6 semester hours of which may be taken outside the department; the required minimum is 36 semester hours for the M.A.

Maximum Study Loads
Maximum course enrollment is 15 graduate semester hours during fall or spring semesters and 9 graduate semester hours during summer sessions. Students registering in several 3-semester-hour courses in the same degree program must be consulted to register for the maximum study loads. One half-time semester work may register for more than 12 semester hours in fall or spring sessions, and for not 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 may be transferred to satisfy requirements toward the degree program. The required minimum is 36 semester-hour requirement for the M.A.

Teaching Certification
Exclusion of the student teaching requirement, graduate students may take the courses necessary for secondary teaching certification while completing M.A. requirements in the department.

Doctor of Philosophy in Spanish
Two doctoral programs are available. The first is dedicated to Hispanic literatures. 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 in Portuguese-Brazilian program (especially recommended). The equivalent of a year of college Portuguese and complete the equivalent of one year of college-level study of another approved foreign language. This language must be Latin for those who will write the dissertation on a pre-1700 topic. The second doctoral program provides for specialization in Spanish linguistics. Before taking the comprehensive examination, candidates must complete the equivalent of one year of college Latin, the equivalent of three years of college Portuguese, and the equivalent of two years of college level study of a third approved foreign language.

Program I: Literature Track
The following course work is required. M.A. courses or equivalent transfer credits
A course in literary theory, 200 level or above
3.0
Two 300-level seminars
6.0
36-204 Theory
3.0
Eight semester hours at the 200 level or the advanced 100 level, no more than three (9.0) of which may be taken outside the department, bringing the total semester hour to the required minimum of 72 in the Ph.D. program.

Program II: Linguistics Track
The following course work is required. M.A. courses or equivalent transfer credits
3.0
Department of Linguistics
103.110 Aristocracy and Acoustic Phonetics
3.0
112.111 Synactic Analysis
3.0
112.112 Phonological Theory and Analysis
3.0
121.121 Syntactic Theory
3.0
One course in advanced Spanish syntax
3.0
One course in advanced Spanish phonology
3.0
One course in comparative literature
3.0
One course in Spanish dialectology
3.0
Two additional courses in linguistics
6.0
(1 course may be taken in the Department of Linguistics)
1+300 level seminars in Spanish Linguistics
36-204 Theory
3.0
Total semester hours required
74.0

Ph.D. Qualifying Examination
All doctoral students are advised conditionally to the Ph.D. program and must take a qualifying examination during their second semester of Ph.D. study. Upon satisfactory completion of the Ph.D. qualifying examination, students are admitted to the Ph.D. program on a regular basis.

The purpose of the Ph.D. qualifying examination is to assess a doctoral student's potential for scholarly research, abilities in analytical thinking and critical reasoning, and level of sophistication in literary or linguistic competencies. The exam marks the formal occasion on which doctoral students begin to give intellectual focus to their program of study. Because it offers opportunities for both student initiative and faculty advice in defining a doctoral student's academic goals, the Ph.D. qualifying examination is significant in preparing doctoral students to take the Ph.D. comprehensive examinations and to write the Ph.D. dissertation.

The Ph.D. qualifying examination is administered both written and oral parts and includes the following: written comprehension and subsequent oral defense of a research paper; written analysis of a single text in Hispanic literature or a single problem in Spanish linguistics that is assigned to the candidate 30 minutes before a two-hour written examination; the text or problem selected is taken from a short reading list that has been previously agreed upon among the candidate and his or her examiners, or in the case of a linguistics qualifying examination, the problem selected may be taken from the range of the candidate's previous course work; and an oral examination on major literary or linguistic works with which the candidate may be expected to be familiar, either from reading lists or from previous course work.

Excluding preparation of the research paper and the 10-day period of advance reflection on the text or problem presented to the candidates for analysis, the length of the written portion of the Ph.D. qualifying examination is two hours. The written portion, which includes defense of the research paper, discussion of the written examination, and discussion of selected major literary or linguistic works, is usually one and one-half hours long. The examining committee
for the Ph.D. qualifying examination is
comprised of five departmental faculty members.

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
literature or in Spanish linguistics to enter
the profession as a teacher- scholar.

The Ph.D. comprehensive examination
is administered in both written and oral parts.
The written portion consists of a three-hour
take-home examination in each of four
departments, below an oral examination follows,
usually lasting two hours. The examining committee
is comprised of five departmental faculty members.
The four examination areas for each track are as follows:

Literature Track
A broad area in Spanish literature history; a
reading list is determined by the student and the
advisory committee.

A broad area in Spanish-American literary
history; a reading list is determined by the student and the
advisory committee.

Two specialized areas of the candidate's
choice; these areas might involve further and
more specialized explorations of particular
periods, genres, or movements within Spanish,
Spanish-American, and/or Latin-American literature
and cultural history; or they might involve
in-depth study of specific problems in Hispanic
literature criticism or in literary theory. Areas
involving Latin American cinema also may be
included. The candidate is given wide latitude
in formulating the reading lists for these areas
according to his or her research and teaching
interests.

Linguistics Track
Consult Computer Science; a reading list is
determined by the student and the advisory
committee.

One specialized area in Spanish-American
philological research; a reading list is
determined by the student and the advisory
committee.

History of the Spanish language.

Two specialized areas of the candidate's
choice; these areas might involve exploration of
a specialized topic in one of the two areas
listed above; or it might involve study of a
particular topic in comparative Romance
philology, history of the Spanish language,
Spanish philology, Portuguese linguistics,
comparative Spanish-Portuguese linguistics,
applied linguistics, language acquisition,
Hispanicism, sociolinguistics, or linguistic
theory. Candidates are given wide latitude in
formulating reading lists for these areas
according to individual research and teaching
interests.

Financial Aid
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 students remain in good standing with
departmental standards, graduate students will
continue to receive support for a reasonable
period of time, but usually not for more than
six years. Students who want financial support
should apply directly to the department office.

Facilities
The Language Media Center provides facilities
for language learning, teaching, and research.
These include standard and reference
notations, tape recorders, record players, supervised
recording rooms, two drill rooms with 68
dual-channel tape recorders, an electronic
simulator, a soundproof workroom, Honey and
Bell projectors, equipment and facilities, visual/auditory
sources, and a library of tape, video, and disc recordings.
The department offers its majors a specific course in
language laboratory procedures.

Courses
Spanish—Primarily for
Undergraduates
All entering freshmen are required to take the
Spanish Placement Test, which is offered at
regular intervals on campus. Transfer students
who have taken college Spanish at another
institution will be evaluated according to
these guidelines.

Effective fall 1992, students may not repeat
courses in elementary Spanish for which
the school transcript credit is present. Students
whose placement test scores do not indicate
readiness for an intermediate or higher level
Spanish course should register for 25.5
Elementary Spanish Review, if they wish to
complete study of Spanish toward completion
of the General Education Requirement in foreign
language.

Students may, not, except with the department's
approval, take an elementary course for
credit after having completed a higher-level
Spanish course for which the elementary course
is or was a prerequisite.

Beyond the provisions of the Foreign
Language Intensive Program, entering students who take
Spanish language placement examination and
are placed in fourth-, fifth-, or sixth-semester courses
also may receive additional credit for their
semester or third or fourth-semester courses if
specific conditions are met. Contact the
Liberal Arts Office of Academic Programs or enter to
the College of Liberal Arts section of the
Catalog for more information.

35-400 Cooperative Education Internship
In Spanish
25.1 Elementary Spanish I
4 h.

For students not enrolled in language arts.
Enrollment is required in conjunction with
 catalogs for community college and university
unions.

25.2 Elementary Spanish II
4 h.

Elementary Spanish I: English as medium of instruction. 25.1 or equivalent.

 Confederate States of America
4 h.

Elementary Spanish II: Comprehensive review and written skills. 25.2

Elementary Spanish Review
4 h.

Intermediate or advanced placed students are eligible to enroll in

25.7 Intensive Elementary Reading in Spanish
3 h.

25.8 Spanish for Health Professionals I
3 h.

25.9 Spanish for Health Professionals II
3 h.

25.10 Intensive Spanish I
3 h.

25.11 Intensive Spanish II
3 h.

25.12 Contemporary Latin American Literature
3 h.

25.13 Intermediate Spanish
3 h.

25.14 Advanced Spanish
3 h.

25.15 Spanish Conversations for Travelers
3 h.

25.16 Elementary Spanish Review
3 h.

25.17 Advanced Spanish Language
3 h.

25.18 Conversation Spanish
3 h.

25.19 Advanced Spanish Language
3 h.

25.20 Special Spanish
3 h.

Spanish— for
Undergraduates and
Graduates

35-199 Hispanic Culture Seminar
4 h.

35-191 Advanced Spanish Elementary
4 h.

35-103 Elementary Spanish
4 h.

35-106 Intermediate Spanish
4 h.

35-171 Advanced Spanish Language
4 h.

35-106 Intermediate Spanish
4 h.

35-107 Advanced Spanish Language
4 h.

35-112 Advanced Spanish Language
4 h.

35-113 Advanced Spanish Language
4 h.

35-114 Advanced Spanish Language
4 h.

35-115 Advanced Spanish Language
4 h.

35-116 Advanced Spanish Language
4 h.
3.18 Spanish and Japanese Literature 3.3

Spanish Pathology and
Audiology

Champion, John W., Ruben

Professor of Pathology, New York University.

3.16 Introduction to Japanese

Literature

American Literature

Library of Congress.

3.18 Spanish and Japanese

Literature

American Literature

Library of Congress.

3.16 Introduction to Japanese

Literature

American Literature

Library of Congress.
**Speech Pathology and Audiology • Liberal Arts**

**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 practice. It may be for professional employment, 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 first registering in the program, entering M.A. candidates receive descriptions 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 are recommended. Decisions about incorporating background course work in these areas are made by the faculty advisor in consultation with the student and the instructors of the basic science or clinical core courses.

The M.A. program with professional emphasis prepares clinicians in speech-language pathology or audiology who are able to practice independently in a variety of clinical settings. General guidelines for the M.A. program with professional emphasis meet all academic and practical 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 30 semester hours of work related to research. This may be accomplished by any combination of enrollment in courses (at least 3 semester hours each) and/or research hours. Completion of the research hours may consist of work toward a thesis or preparation for a major paper including 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 the M.A. with professional emphasis are not required to complete a thesis, although 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 minimum of 30 semester hours of coursework in the professional M.A. program. Students in the general M.A. program are required to present a thesis and successfully complete a final oral examination.

The M.A. with research emphasis requires a minimum of 36 semester hours of graduate courses. It typically takes two years to complete the required course work and thesis research.

**M.A. with Professional Emphasis**

A typical M.A. program with professional emphasis usually takes two years to complete but may take longer depending on the student's background and personal interests.

**Core Requirements**

All students entering M.A. with professional emphasis must take the following:

- *3100 Counseling Theories and Techniques* 3 s.h.
- *3110 Basic Neuroscience for Speech and Hearing* 3 s.h.
- *3125 Principles of Assessment* 3 s.h.
- *3140 Speech-Language Pathology I: Phonological Disorders* 3 s.h.
- *3145 Speech-Language Pathology I: Developmental Language Disorders, and Stuttering* 3 s.h.
- *4145 Speech-Language Pathology I: Neurological Disorders, Voice Disorders, Cleft Palate, and Related Disorders (speech-language pathology major only)* 3 s.h.
- *4183 Hearing Loss and Auditory* 4 s.h.
- *3244 Rehabilitation Audiology* 3 s.h.
- *3500 Professional Practice of Audiology and Speech-Language Pathology* 6 s.h.
- *3515 Seminar: Introduction to Research in Speech and Hearing* 3 s.h.
- *4000 Advanced Seminars or Research* 1 s.h.

Additional semester hours of practicum preparation 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.

An equivalent undergraduate course may be accepted as meeting requirements.

**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:

- *3210 Principles of Voice Production* 3 s.h.
- *3202 Medical Aspects of Audiology* 3 s.h.
- *3206 Speech and Language Disorders of Young Children: Birth to Five Years* 2 s.h.
- *3207 Speech and Language Disorders of Older Children: Five to Eighteen Years* 2 s.h.
- *3208 Communication Problems of Developmental Disorders and Childhood Deafness* 2 s.h.
- *3212 Voice Disorders* 2 s.h.
- *3213 Swallowing and Dysphagia* 2 s.h.
- *3215 Vocational Aspects of Speech* 2 s.h.
- *3211 Instrumentation for Voice Assessments* 2 s.h.
- *3212 Communication Problems Associated with Head and Neck Cancer* 3 s.h.
- *3235 Neurogenic Disorders of Language* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
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- *3236 Neurogenic Disorders of Speech* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
- *3236 Neurogenic Disorders of Speech* 2 s.h.
child development (e.g., human growth and development, principles and theories of child development, history and theories of early childhood education)

(general education courses, e.g., introduction to psychology, sociology, philosophy, literature, and humanities, are not credited as meeting the professional education sequence.)

completion of an approved human relations component

completion of courses that cover the execution of the diaphragm and the gifted and talented (e.g., exceptional persons, education of the gifted)

2.213 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.214 Neurologic Disorders of Speech

2.215 Voice Disorders

2.216 Communication Disorders of Children

2.217 Speech and Language Disorders

2.218 Psycholinguistic Aspects of Language 1 s.h.

2.219 Treatment of Language Disorders

2.220 Speech-Related Disabilities

2.221 Speech Perception

2.222 Speech Perception in the Auditory Environment 1 s.h.

2.223 Principles of Voice Production

2.224 Voice Disorders

2.225 Voice Production and Rehabilitation

2.226 Instrumentation for Voice Analysis

2.227 Methods of Teaching Voice

2.228 Articulation and Phonetics

2.229 Auditory and Speech Perception

2.230 Speech and Language Disorders

2.231 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.232 Neurologic Disorders of Speech

2.233 Voice Disorders

2.234 Speech and Language Disorders

2.235 Speech Perception

2.236 Speech Perception in the Auditory Environment 1 s.h.

2.237 Principles of Voice Production

2.238 Voice Disorders

2.239 Voice Production and Rehabilitation

2.240 Instrumentation for Voice Analysis

2.241 Methods of Teaching Voice

2.242 Articulation and Phonetics

2.243 Auditory and Speech Perception

2.244 Speech and Language Disorders

2.245 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.246 Neurologic Disorders of Speech

2.247 Voice Disorders

2.248 Speech and Language Disorders

2.249 Speech Perception

2.250 Speech Perception in the Auditory Environment 1 s.h.

2.251 Principles of Voice Production

2.252 Voice Disorders

2.253 Voice Production and Rehabilitation

2.254 Instrumentation for Voice Analysis

2.255 Methods of Teaching Voice

2.256 Articulation and Phonetics

2.257 Auditory and Speech Perception

2.258 Speech and Language Disorders

2.259 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.260 Neurologic Disorders of Speech

2.261 Voice Disorders

2.262 Speech and Language Disorders

2.263 Speech Perception

2.264 Speech Perception in the Auditory Environment 1 s.h.

2.265 Principles of Voice Production

2.266 Voice Disorders

2.267 Voice Production and Rehabilitation

2.268 Instrumentation for Voice Analysis

2.269 Methods of Teaching Voice

2.270 Articulation and Phonetics

2.271 Auditory and Speech Perception

2.272 Speech and Language Disorders

2.273 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.274 Neurologic Disorders of Speech

2.275 Voice Disorders

2.276 Speech and Language Disorders

2.277 Speech Perception

2.278 Speech Perception in the Auditory Environment 1 s.h.

2.279 Principles of Voice Production

2.280 Voice Disorders

2.281 Voice Production and Rehabilitation

2.282 Instrumentation for Voice Analysis

2.283 Methods of Teaching Voice

2.284 Articulation and Phonetics

2.285 Auditory and Speech Perception

2.286 Speech and Language Disorders

2.287 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.288 Neurologic Disorders of Speech

2.289 Voice Disorders

2.290 Speech and Language Disorders

2.291 Speech Perception

2.292 Speech Perception in the Auditory Environment 1 s.h.

2.293 Principles of Voice Production

2.294 Voice Disorders

2.295 Voice Production and Rehabilitation

2.296 Instrumentation for Voice Analysis

2.297 Methods of Teaching Voice

2.298 Articulation and Phonetics

2.299 Auditory and Speech Perception

2.300 Speech and Language Disorders

2.301 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.302 Neurologic Disorders of Speech

2.303 Voice Disorders

2.304 Speech and Language Disorders

2.305 Speech Perception

2.306 Speech Perception in the Auditory Environment 1 s.h.

2.307 Principles of Voice Production

2.308 Voice Disorders

2.309 Voice Production and Rehabilitation

2.310 Instrumentation for Voice Analysis

2.311 Methods of Teaching Voice

2.312 Articulation and Phonetics

2.313 Auditory and Speech Perception

2.314 Speech and Language Disorders

2.315 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.316 Neurologic Disorders of Speech

2.317 Voice Disorders

2.318 Speech and Language Disorders

2.319 Speech Perception

2.320 Speech Perception in the Auditory Environment 1 s.h.

2.321 Principles of Voice Production

2.322 Voice Disorders

2.323 Voice Production and Rehabilitation

2.324 Instrumentation for Voice Analysis

2.325 Methods of Teaching Voice

2.326 Articulation and Phonetics

2.327 Auditory and Speech Perception

2.328 Speech and Language Disorders

2.329 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.330 Neurologic Disorders of Speech

2.331 Voice Disorders

2.332 Speech and Language Disorders

2.333 Speech Perception

2.334 Speech Perception in the Auditory Environment 1 s.h.

2.335 Principles of Voice Production

2.336 Voice Disorders

2.337 Voice Production and Rehabilitation

2.338 Instrumentation for Voice Analysis

2.339 Methods of Teaching Voice

2.340 Articulation and Phonetics

2.341 Auditory and Speech Perception

2.342 Speech and Language Disorders

2.343 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.344 Neurologic Disorders of Speech

2.345 Voice Disorders

2.346 Speech and Language Disorders

2.347 Speech Perception

2.348 Speech Perception in the Auditory Environment 1 s.h.

2.349 Principles of Voice Production

2.350 Voice Disorders

2.351 Voice Production and Rehabilitation

2.352 Instrumentation for Voice Analysis

2.353 Methods of Teaching Voice

2.354 Articulation and Phonetics

2.355 Auditory and Speech Perception

2.356 Speech and Language Disorders

2.357 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.358 Neurologic Disorders of Speech

2.359 Voice Disorders

2.360 Speech and Language Disorders

2.361 Speech Perception

2.362 Speech Perception in the Auditory Environment 1 s.h.

2.363 Principles of Voice Production

2.364 Voice Disorders

2.365 Voice Production and Rehabilitation

2.366 Instrumentation for Voice Analysis

2.367 Methods of Teaching Voice

2.368 Articulation and Phonetics

2.369 Auditory and Speech Perception

2.370 Speech and Language Disorders

2.371 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.372 Neurologic Disorders of Speech

2.373 Voice Disorders

2.374 Speech and Language Disorders

2.375 Speech Perception

2.376 Speech Perception in the Auditory Environment 1 s.h.

2.377 Principles of Voice Production

2.378 Voice Disorders

2.379 Voice Production and Rehabilitation

2.380 Instrumentation for Voice Analysis

2.381 Methods of Teaching Voice

2.382 Articulation and Phonetics

2.383 Auditory and Speech Perception

2.384 Speech and Language Disorders

2.385 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.

2.386 Neurologic Disorders of Speech

2.387 Voice Disorders

2.388 Speech and Language Disorders

2.389 Speech Perception

2.390 Speech Perception in the Auditory Environment 1 s.h.

2.391 Principles of Voice Production

2.392 Voice Disorders

2.393 Voice Production and Rehabilitation

2.394 Instrumentation for Voice Analysis

2.395 Methods of Teaching Voice

2.396 Articulation and Phonetics

2.397 Auditory and Speech Perception

2.398 Speech and Language Disorders

2.399 Communication Problems

Associated with Head and Neck

Cancer 1 s.h.
3.076 Issues and Methods of Clinical Research 3 s.h.
3.014 Seminar: speech and Language 2 s.h.
3.015 Practicum 0 s.h.
3.520 Seminar: Developmental Language Disorders 5 s.h.
3.521 Seminar: Neurolinguistics 2 s.h.
3.522 Seminar: Voice 2 s.h.
3.523 Seminar: Clf/Trt 2 s.h.
3.526 Seminar: Rehabilitative Audiology 2 s.h.
3.528 Seminar: Neuromuscular Communication Disorders 2 s.h.
3.530 Seminar: Communication Disorders and Aging 2 s.h.
3.532 Seminar: Speech Science 2 s.h.
3.533 Seminar: Psycholinguistics 2 s.h.
3.535 Seminar: Psycholinguistics 2 s.h.
3.536 Seminar: Experimental Audiology 2 s.h.
3.537 Seminar: Clinical Audiology 2 s.h.
3.538 Seminar: Auditory Physiology 2 s.h.
3.590 Research 7 s.h.

Students in the Ph.D. program usually are expected to register for research credit during each semester of residence and to register for and participate in 3.510 Practicum.

Knowledge in each of the areas of hearing, speech, language, phonetics, 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 must successfully complete and submit a dissertation based on original research.

Admission and 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 departmental requirements is presented below. More detailed information is available from the department chair.

Application Form

All applicants for admission to evaluate 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 base M.A. admission on understanding relative to the applicant's background as perceived by other applicants for the same term. While an undergraduate grade point average above 3.0 does not ensure admission, the department would favor applicants with undergraduate grade point averages below 3.00. Completed applications must be received no later than February 1 for enrollment in the next summer session or fall semester. Later applications will be considered only at special invitations. Applications to begin study in the spring semester will be considered only under special circumstances and only if they are 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 admission is sought: 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 to the deadline for appointment applications specified below. Applications 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 administrated by the department.

- Graduate appointments usually begin only in fall semester. Students beginning study in the spring semester or summer semester are considered for appointments for the following fall semester.
- Scores on the GraduateRecord Examination (GRE) General Test are routinely required for consideration of financial assistance.
- Appointment applications must be received by February 1 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 clinical facilities for the clinical training of students in speech-language pathology and audiology.

The University of Iowa Affiliated Speech and Hearing Services include the Weldon Johnson Speech and Hearing Clinic, the division of speech and hearing in the Department of Otolaryngology—Head and Neck Surgery; speech—auditory service in the Department of Neurology; speech and hearing services in the University Hospital School; Pediatrics Regional Child Health Specialty Clinics; otoscopist, phoniatric services in child psychiatry; and the speech and language 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 Weldon 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, and a six-week summer residential program for children. These clinical programs give students opportunities to work with a wide variety of speech, hearing, and language disorders.

In addition to the clinical training in the Weldon Johnson Speech and Hearing Clinic, course work may be required in supervised clinical practice with elementary school children by arrangement with the various state and local education agencies; and in supervised clinical practice in speech and hearing service provided by the Departments of Otolaryngology—Head and Neck Surgery, Pediatrics, and Neurology, the Region Calc. Child Health Specialty Clinics, University Hospital School, Veterans Affairs Medical Center, and St. Luke’s Methodist Hospital in Cedar Rapids.

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 Weldon Johnson Speech and Hearing Center include audiological testing suites, diagnostic and therapeutic suites, equipment for diagnosis and therapy, a closed-circuit television system, and laboratories and equipment for acoustic, phonetic, and perceptual studies of speech, and for audiological, phonocardiographic, and audiologic studies of hearing. Mechanical and electronic shops and trained technical personnel are available for assistance in research instrumentation.

Cooperation of various departments of the University of Iowa Hospitals and Clinics and the College of Dentistry makes additional laboratory facilities available for research problems in speech and hearing. The participation and cooperation of practitioners from various fields, including psychiatry, child development, education, engineering, medicine, and dentistry, further broaden the scope of research activities in speech and hearing.

Courses

3.600 Speech Pathology and Audiology 3 s.h.
Course work includes 24 hours of professional education and 3 hours of coursework in basic science.

3.601 Introduction to Speech and Hearing 3 s.h.
This course serves as the core of a specialty study; major types of speech, hearing, language disorders.

3.602 Introduction to Professional Practice in Audiology and Speech-Language Pathology 3 s.h.
May be repeated, open only to undergraduate majors with junior standing, or graduate students.

4.710 Seminar 3 s.h.
Graduate seminar concerned with research problems in speech-language pathology, audiology. Open only to graduate students. Offered fall and spring term.

5.618 Ethics, Therapy 3 s.h.
Research problems in speech-language pathology and audiology. Open only to graduate students. Offered spring semester.

5.619 Topics in Hearing, Language, Speech, Processing and Disorders 1 s.h.
Current issues, clinical management of disorders, current research problems.

6.000 Issues and Methods of Clinical Research 3 s.h.
Current issues, clinical management of disorders, current research problems.

TRANSPORTATION STUDIES

Transportation is perhaps the most vital need of a modern society. In the United States, in an age of motorization, traffic problems and traffic injuries are all too common. The study of highway safety and the improvement of traffic conditions are of prime importance.

Graduate Programs

Certificate

No single discipline can supply all the theories, principles, and data needed to address the varied and complex problems in transportation. Recognizing this, the Department of Civil and Environmental Engineering, the Department of Geography, and the Graduate Program in Urban and Regional Planning have established a graduate certificate program that enables students in these academic units to obtain an additional credential along with their respective degrees.

The Transportation Certificate Program is offered by the Center for Transportation Studies and operated in conjunction with the Midland Transportation Center, a consortium of The University of Iowa and Iowa State University. Completion of the requirement for a certificate requires the student to take a minimum of 30 semester hours in the discipline's curriculum. The certificate is awarded in conjunction with the established degree requirements of the individual academic units.

Students who wish to enroll in a course of study leading to a certificate may consult with the program director for information and approval. A certificate program course offering is listed in the campus course catalogs, and they must participate in a research seminar that requires enrollment in a project involving a public agency or a private-sector firm operating in the region.

Degree Programs in Civil and Environmental Engineering

The Department of Civil and Environmental Engineering offers degrees in transportation at both the Bachelor of Science and Doctor of Philosophy levels. The M.S. can be offered either without thesis, requiring a minimum of 30 semester hours of credit, or with a thesis, a 36-semester-hour program that includes up to 6 additional semester hours of credit.

Nonresidents usually are required to complete a research paper based on individual study and must defend the paper to an examination committee. The Ph.D. degree requires a minimum of 72 semester hours beyond the B.S. degree, with up to 12 semester hours of credit for dissertation research. A minimum of one year of campus residency is required.

Individuals with degrees in transportation-related disciplines as well as in civil engineering are encouraged to apply. Depending on the student's background, it may be necessary to complete courses in statistics, computer programming, mathematics, and operations research without being able to apply the course credit to semester hours needed for the degree program.

A typical master's program includes the following courses:

First Semester

32-526 Urban Transportation Planning 3 s.h.
32-580 Transportation Engineering 3 s.h.
32-585 Transportation Economics 3 s.h.
32-587 Transportation Policy 3 s.h.
32-589 Transportation Systems Analysis 3 s.h.

Second Semester

32-581 Transportation Systems Analysis 3 s.h.
32-582 Transportation Systems Analysis 3 s.h.
32-583 Transportation Systems Analysis 3 s.h.
32-584 Transportation Systems Analysis 3 s.h.
32-585 Transportation Systems Analysis 3 s.h.
32-586 Transportation Systems Analysis 3 s.h.

Special Offerings

dip Workshop in Theories and Practice 3 s.h.
Highway Design 3 s.h.
Highway Safety 3 s.h.
Highway Systems Analysis 3 s.h.
Highway Systems Analysis 3 s.h.
Highway Systems Analysis 3 s.h.
Highway Systems Analysis 3 s.h.
Highway Systems Analysis 3 s.h.
Degree Programs in Geography

The Department of Geography offers Master of Arts and Doctor of Philosophy degrees with a specialization in atmospheric sciences, geography, and regional planning.

Degree Programs in Urban

The Graduate Program in Urban and Regional Planning offers Master of Arts and Master of Science degrees with a concentration in transportation and urban and regional planning. During the first year, students complete an integrated core curriculum consisting of courses in planning economics and public finance, analysis methods, policy planning, collective decision making, law, and information presentation. The second year is devoted to a specific major, such as transportation, where core concepts are applied to a chosen area of specialization. The planning curriculum is intended to provide students with the capability to evaluate policy issues in transportation, devise workable options, analyze these options, and work toward implementation of policy solutions.

UNIFIED PROGRAM

Unified Program (UP) is a collaborative series of integrated general education courses for a small group of students who begin the program as entering freshmen. Each UP satisfies all of the College of Liberal Arts General Education Requirements except the foreign language and physical education requirements, and each UP course is equivalent to an equivalent approved course. Students may leave the program at any time and satisfy the General Education Requirements in other ways, but non-UP semester transcripts may not apply. To enter UP courses, students must be eligible for 10.3 (Accelerated) Math.
Options

NHED

A fresh is not required, although students may position to a wide area. Students may register up to 6 semester hours of thesis credit. In addition, they take up to 8 semester hours of reading to complete the thesis requirements for the thesis.

INTERNSHIP

Students are encouraged to complete an internship in a planning-related organization. To obtain the 2 semester-hour credit, the student must submit a brief paper summarizing and evaluating the experience. Internships usually last 2-semester hour positions and are completed during the summer between the first and second years.

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 typically takes place during the summer and into the fall semester of the second year. The practicum carries 3 semester-hour credit and satisfies the required field problems course. 102,215, and as well fulfilling the 2 semester-hour reduction in degree requirements for the internship.

Other Requirements

Students who complete the optional internship must complete the planning degree. Students may complete an additional 2 semester-hour in lieu of this internship, bringing the total to 50 hours. At least 2 semester-hour must be completed with a grade of B or better, and students must attain an overall grade-point average of 3.00 or better.

Joint Programs

Law

The Urban and Regional Planning Program and the School of Law offer a joint degree program that satisfies the degree requirements leading to an M.A. in planning and 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 3½ years if the student chooses the accelerated law program. Separate admissions to each academic unit is required.

Law is the most popular of the joint degree programs. Students in the planning and law program typically take 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.

Engineering

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 planning career in the public or private sector. Students in the program may earn a B.S. in engineering and an M.A. or M.S. in planning in a total of five or six academic years.

Students should apply for the joint program when they apply for admission to the engineering college or before they complete their sophomore year following matriculation. Application should be submitted a letter requesting admission to the College of Engineering, The University of Iowa.

Students apply to the graduate planning program near the time when they are completing the B.S.E. degree requirements. They should prepare to meet the admission requirements of the graduate program at that time.

Engineering students complete the planning core in the first two years of the undergraduate program. After graduating from the College of Engineering and while enrolled in the graduate program, students fulfill the elective master's requirement to complete 9 semester hours of credit in courses offered by various departments and schools of the University, including for graduate planning programs and the engineering college. Each combined degree student is assigned an advisor from engineering and one from planning. During the first year of the program, the student works closely with both planning adviser and the student in the College of Engineering. For the fifth year, students confer with their graduate planning adviser.

Preventive Medicine and Environmental Health

Students may elect a master's degree option in urban and regional planning and the Department of Preventive Medicine and Environmental Health in the College of Medicine. This option requires in an M.A. in planning and an M.S. in preventive medicine and environmental health. An analysis of the program typically finds employment in the public health field, with such agencies and human services departments, for example in environmental planners.

A total of 60 to 65 semester hours of credit is required; the degree generally can be earned in two and one-half years. Separate admissions to each academic unit is required.

Hospital and Health Administration

Students interested in health planning may wish to enroll in a joint program between urban and regional planning and the Department of Hospital and Health Administration in the College of Medicine. This three-year program offers 69/2 semester hours, leads to an M.A. or M.S. in hospital and health administration. Course work is reduced by one year from the separate requirements of the two programs. Separate application is required.

The hospital and health administration 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 hospital administration, schools of public health, hospitals, urban agencies, health care providers, or other public health agencies.

Economics

Planning students who wish to strengthen their skills in economic analysis may enroll in the joint program with the Department of Economics. The combination of economics and applied public policy analysis is valuable for students who want to obtain jobs in such areas as economic development planners, analysts in public utility regulatory commissions, or fiscal analysts for state legislative or revenue departments.

The program requires a total of 60 to 65 semester hours of credit and usually can be completed in five years. Students earn an M.A. in planning and an M.A. in economics.

Social Work

For those interested in a career in social service delivery or human service planning, a joint program is offered in urban and regional planning and the School of Social Work, leading to an M.A. in planning and a M.S.W. in social work. Planning positions are available with city planning agencies, nonprofit service agencies, and state human service departments.

A total of 60 semester hours is required for the two programs. A minimum of 22 semester hours is required. Separate admissions to each academic unit is required.

Transportation

A transportation research and training program is offered through the Center for Transportation Studies, administered through the Urban and Regional Planning Program. 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, geography, and economics. The certificate program allows planning students with sectoral interests in transportation to extend their training and obtain an additional credential. For more information, see "Transportation Studies" in this section of the Catalog.

Financial Aid

Students in the Urban and Regional Planning Program receive financial support primarily in the form of teaching or research assistancies and grants or grant-funded research assistantships. Assistantships typically require ten hours of work per week under the direction of
WOMEN'S STUDIES

Graduate Study

Course Core Courses

Undergraduate Study

Acknowledgments

Minor

Graduate students in master's or doctoral programs may choose a comprehensive area in women's studies within existing disciplines. Graduate students who want to pursue the Ph.D. in women's studies should file a plan of study for the Ph.D. comprehensive exam approximately 1 year through the Graduate College. Students must be granted admission by a department of the University.

Course Core Courses

Undergraduate students who are interested in interdisciplinary programs, students contemplating a minor should choose their women's studies course work from several different disciplines.

Graduate students in master's or doctoral programs may choose a comprehensive area in women's studies within existing disciplines. Graduate students who want to pursue the Ph.D. in women's studies should file a plan of study for the Ph.D. comprehensive exam approximately 1 year through the Graduate College. Students must be granted admission by a department of the University.

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131:303 Feminist Theory: Historians' Perspectives
Same as 11:1303.
131:304 Seminar: History of American Women
Same as 11:304.
131:315 Women and Politics
Same as 20:131.
College of Business Administration

Accounting ........................................ 256
Economics ........................................ 258
Finance ........................................... 260
Management and Organizations ............. 261
Management Sciences ............................ 263
Marketing ......................................... 265

Dean: George Daly
Senior associate dean, academic affairs: Gary C. Bennett
Assistant dean, graduate programs: Dana R. Thompson
Assistant dean, graduate programs: Wilma B. Greet, Jr.
Assistant dean, operations: M. P. McMillen, Jr.
Acting assistant dean, management and business development: Nancy C. Welch
Degrees: B.B.A., M.B.A., M.A., Ph.D.
The College of Business Administration comprises six academic departments: accounting, economics, finance, management and organizations, management sciences, and marketing.

The undergraduate and graduate programs of the college are accredited by the American Assembly of Collegiate Schools of Business.

Research, executive development, and continuing education activities are supported by the centers and institutes of the college: Executive Development Center, Financial Market Institute, Industrial Relations Institute, Institute for Economic Research, Management Center, Manufacturing Productivity Center, Institute for Entrepreneurial Management, I.A. McCalley Institute for Accounting Research, and Small Business Development Center.

**Undergraduate Program**

**Bachelor of Business Administration**

The college offers the Bachelor of Business Administration (B.B.A.) in all six departments and in business administration. B.B.A. students complete background studies either in the College of Liberal Arts at The University of Iowa or at another institution and usually enter the College of Business Administration at junior status.

The college’s B.B.A. curriculum requires 120 semester hours for graduation, with at least 40 semester hours in business courses and at least 40 in non-business courses. Limited specialization is effected through the student’s major.

The last 20 of the last 40 semester hours must be earned in residence following admission to the College of Business Administration. At least 24 semester hours of credit in courses offered by the College of Business Administration 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 coursework not accredited by the college. 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 at least a 2.00 grade-point average in college course work overall, in all business course work, and in all course work in the major, both at The University of Iowa and at other institutions.

**Common Requirements**

B.B.A. candidates must satisfy the following minimum common requirements or approved equivalents:

<table>
<thead>
<tr>
<th>Resource</th>
<th>10-1 and 10-2, or 10-3</th>
<th>48 s.h.</th>
</tr>
</thead>
<tbody>
<tr>
<td>22M:17 and 22M:58 Quantitative Methods I and II</td>
<td>42M:25, 22M:56, and 22S:120</td>
<td>64 s.h.</td>
</tr>
</tbody>
</table>

| 46:B Principles of Microeconomics | 3-4 s.h. |
| 46:J Principles of Macroeconomics | 3-4 s.h. |
| 46:A Introduction to Financial Accounting | 3 s.h. |
| 46:J2 Managerial Cost Accounting | 3 s.h. |
| 46:K1 Natural Science (excluding math) | 6 s.h. |
| 46:K2 Historical Perspectives | 6 s.h. |
| 46:K3 Foreign Civilization and Culture | 6 s.h. |
| 46:K4 Humanities (excluding Econ 1) | 6 s.h. |
| 46:K5 Interpretation of Literature | 6 s.h. |
| Social sciences (excluding 66:1 and 66:2) | 6 s.h. |
| 46:K6 Computer Applications | 3 s.h. |
| 46:K7 Quantitative Analysis | 3 s.h. |
| 46:K8 Introduction to Law | 3 s.h. |
| 46:K9 Administrative Management | 3 s.h. |
| 46:K10 Introductory Financial Management | 3 s.h. |
| 46:K11 Introduction to Marketing | 3 s.h. |
| 46:K15 Business Policy | 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, industrial relations and human resources, management sciences, and marketing. With the exception of the major in business administration, the requirements for each are established by the departments of the college.

**STUDENTS WITH ASSOCIATES OF ARTS DEGREES**

Students who receive Associates of Arts (A.A.) degrees from Iowa Area Community Colleges participating in the Iowa Community College-Regents Articulation Agreement are considered to have completed the general education, natural science, historical perspectives, and humanities requirements, but not the foreign language and culture (effective Fall semester 1992) or social work science requirements. The program of study for which the A.A. was awarded must include:

- A minimum of 60 semester hours (90 quarter hours) of credit acceptable toward graduation from The University of Iowa (transfer courses must be equivalent to 22M:1 Base Algebra I, 22M:2 Base Algebra II, and 22M:2 Base Geometry, if not accepted toward graduation).

Students who use the provisions of the articulation agreement are granted a maximum of 60 semester hours of transferable credit from all sources 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 credits for business courses taken during the freshman and sophomore years are counted toward the B.B.A. if such courses are usually offered as lower division courses at The University of Iowa.

**TRANSFER STUDENTS**

Transfer students who have taken courses otherwise that are similar to those approved for the common business requirements at the college may be required to take additional courses.

Students who transfer fewer than enough hours to meet a common requirement may use approved courses to complete the remainder of the requirement. Only judge- or professor-level courses taken at accredited business institutions may be used to satisfy common business requirements numbered 100 and above.

**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 in departments within the college (e.g., international business).

**Minors**

**Business Minor**

Undergraduate students in the College of Business Administration 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 advisor 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 form before submitting it to the Office of the Registrar early in the student’s final semester.

**Business Minor**

Students majoring in another college of the University may elect a minor in business administration. Courses numbered 300 or 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. A 3.0 minimum grade-point average is required on all courses taken for the minor and on all of the courses taken in the major. Courses for the minor may not be taken pass/fail.

Business calculus (22M:17, 22M:25, or 22S:35)

Statistics (22S:8 or 22S:120)

4-5 s.h.
Graduation Honors
High scholastic achievement is recognized in two ways upon graduation: 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 prescribed 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 prior to 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 two percent of the graduating class, "with high distinction" to students in the next highest three percent, and "with distinction" to the next highest five percent. Ranking is based on students' grade-point averages for all college-level study undertaken prior to their final registration.

Admission
Admission standards are set by the undergraduate programs committee. The college usually admits undergraduate students at the beginning of their senior year. Students are eligible for admission to the college after they have completed 60 semester hours; have satisfied the common requirements in quantitative methods, accounting, and economics; and have a cumulative grade-point average by the deadline (May 1 for summer or fall admission, December 1 for spring admission).

Students are guaranteed admission to the College of Business Administration if they meet the above admission requirements and have a 2.60 minimum grade-point average on the common requirements in quantitative methods, accounting, and economics; all college-level courses taken (including transfer courses); and all courses undertaken at the University of Iowa.

Students who have grade-point averages below 2.60 for one or more of the categories and above 2.25 for each of the categories are considered for conditional admission. The college considers the following factors in a comparative evaluation of applicants for admission:

grade-point averages for each of the categories listed above;
the pattern of grades over time; and
other factors relevant to predicting success in the college.

The college provides information about characteristics of recently admitted students, thus enabling those interested in the program to judge how they are progressing toward admission.

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 (AP) of the College Board examinations are used. It is possible to receive credit for some of the core courses of the requirements of the college.

Information on the CLEP and AP examinations is available from the University's Evaluation and Examinations Service.

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 dean.

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 advisor and instructor. Courses may be dropped during the first two weeks of the semester or first two weeks of the summer session with approval of the advisor and instructor. Students must have the approval of the dean in order to add or drop a course after these deadlines. Approval for adds or drops after these deadlines is granted in extraordinary circumstances.

Undergraduates will receive the mark of W for any course dropped after the third week of the semester or one and one-half weeks of the summer session.

Pass/NoPass
Of the total semester hours required for a B.B.A., up to 5 may be taken on a pass/no-pass basis with the consent of the advisor and instructor. However, students may not take more than 8 semester hours of pass/no-pass credit in the last 60 semester hours of course work. Students must be in good academic standing to be eligible for the pass/no-pass option. A maximum of two pass/no-pass courses may be taken in one semester.

Courses taken pass/no-pass may not be used to satisfy general education, core, or major business requirements. Major business requirements include any course that could substitute as a major course requirement. Pass/no-pass registration must be completed during the first three weeks of the semester in the case of the first one and one-half weeks of further session. For courses passed on a pass/no-pass basis, an earned grade of C- or above is recorded as a P. A grade of D+ or 0.0 is recorded as an N.

Second-Grade-Only Option
This option is not available to students who were admitted to the college for spring semester 1990 or thereafter.

Students admitted to the college prior to spring semester 1990 may elect to repeat a course with only the second grade being computed in
Interested students should have completed 60 semester hours of study, earned a 2.50 minimum grade-point average, and indicated the intent to pursue both degree programs on a full-time basis. More information on the AP7 program is available from the Academic Programs Office.

**COURSE COURSES**

**First Semester**
- GN-210 Models for Decision Support 3 s.h.
- GN-211 Marketing Management 3 s.h.
- GN-212 Administrative Science I 3 s.h.
- GN-213 Managerial Economics 3 s.h.
- GN-215 Accounting for Managers I 3 s.h.
- **Total** 15 s.h.

**Second Semester**
- GN-225 Managerial Finance 3 s.h.
- GN-255 Statistical Methods 3 s.h.
- GN-227 Administrative Science II 3 s.h.
- GN-228 The Economic Environment of the Firm 3 s.h.
- GN-229 Operations Management 3 s.h.
- **Total** 15 s.h.

**Third Semester**
- GN-230 Applied Strategic Analysis 2 s.h.
- GN-235 Accounting for Managers II 1 s.h.
- Electives 6 s.h.
- Concentrations 6 s.h.
- **Total** 15 s.h.

**Fourth Semester**
- GN-240 Strategic Management and Industry Analysis 3 s.h.
- Electives 6 s.h.
- Concentrations 6 s.h.
- **Total** 15 s.h.

**CONCENTRATION OPTIONS**

M.B.A. students choose an individual area of concentration after the first-year curriculum is completed. The concentration consists of 12 semester hours in a specific discipline. Each area of concentration includes accounting, corporate finance, investments, human resources management, leadership quality and status, management information systems, production and operations, and marketing. Individual students may choose their own concentration area, subject to approval by the Graduate Programs Office.

**EXECUTIVE M.B.A.**

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 in two academic years. Classes begin with one full week in Iowa City followed by classes one day a week on alternating Fridays and Saturdays. Participants progress through the program together as a single group. Enrollment is limited to 35 students per year.

Information about the program, fees, and application procedures may be obtained by writing or calling the College of Business Administration Academic Programs Office.

**Master of Arts in Business Administration**

The Master of Arts program in business administration is designed for students seeking specialization in one of three areas of business administration. It permits a research emphasis that qualifies students for professional positions in business.

The program is available with or without thesis and is flexible, permitting specialization according to students' interests and objectives. Students may select a major in accounting, industrial relations and human resources, or management information systems. A minor may be developed from approved course combinations within the College of Business Administration or from another college. Specific program requirements are stated in the individual departmental listings in this section of the Catalog.

**Doctor of Philosophy**

The Ph.D. program in business administration is designed for students preparing for research careers in business and government, or for teaching and research positions at academic institutions. The program is flexible, permitting students to choose an area of specialization according to their interests. Suitable course work and related expertise are provided so that students achieve competence in economic theory, statistical methods, teaching, and/or research, as well as expertise in a major and minor area of study.

Course work in the Ph.D. program consists of prescribed (as necessary), the Ph.D. core, major and minor areas of study, and dissertation research. Most students (including all with master's degrees from ACB-S accredited programs) take 60 semester hours of course work. Additional course requirements may be imposed or guaranteed variation based on business prerequisites at the Graduate College minimum total credit hour requirement (72 semester hours of graduate credit, including courses taken before entering The University of Iowa Ph.D. program).

**PREGRADUATE COURSES**

The content body of knowledge requirements of one 400- level course must be at least 12 hours. Available undergraduate or graduate courses. These include courses in accounting, finance, management, marketing, organizational behavior, quantitative methods, and the economic and legal environment pertaining to profit and/or nonprofit organizations.

**CORE COURSES**

Core courses are designed to develop competence in research and provide necessary background for study in more specialized courses. Graduate core courses are required as follows: behavioral sciences (3 semester hours), economics (6 semester hours), issues in scientific inquiry (3 semester hours), and research methods/statistics/quantitative analysis (12 semester hours).

To reflect the background and interests of individual students, doctoral candidates consult with their advisors to establish satisfaction of core requirements.

**MAJOR AREA OF STUDY**

A minimum of 12 semester hours of approved dissertation or additional courses must be included in one of the following areas: accounting, finance, human resources management, industrial relations, management science, marketing, or organizational behavior.

**MINOR AREA OF STUDY**

A minimum of 9 semester hours of additional course work must be included in one of the following minor areas: accounting, finance, human resources management, industrial relations, management science, marketing, or organizational behavior.

**COMPREHENSIVE EXAMINATIONS**

Students must successfully complete a written examination in both the major and minor areas of study. The examination committee is made up of a minimum of three faculty members. Upon satisfactory completion of the written comprehensive examinations, students must pass an oral comprehensive examination encompassing subject matter in the major, minor, and minor areas. The examination committee is made up of at least five faculty members.

**DISSERATION**

A dissertation proposal must be presented before a form attended by dissertation committee members and open to interested faculty and graduate students as established by
business, government, and public accounting. It also qualifies students in for the Certified Public Accountant (CPA) and Certified Management Accountant (CMA) examinations.

Completion of prerequisite coursework and acceptance in the College of Business Administration is required before entry into the professional program in accounting. Separate applications to the College of Business Administration and the professional program in accounting are made at the end of the sophomore year. If an applicant is accepted into the program at the beginning of his or her junior year, the student receives a B.B.A. after the successful completion of the third year of the program. The sophomore B.B.A. requires 30 graduate semester hours beyond the 120 undergraduate semester hours required for the B.B.A. in accounting. For more information, see "Program 1," below.

The first and second years of the professional program, taken during the junior and senior years, provide concentrated coverage of professional accounting subjects and closely related topics in economics, commercial law, behavioral science, and operations research.

The third year, taken during M.A. candidacy, emphasizes the theoretical and conceptual foundations of accounting. The program consists of a series of courses that merge concepts and techniques with applications to current and potential problems of professional practice.

Students are exposed to contemporary accounting practice through the Accounting Issues Seminar course and the M.A. Speaker Series. Graduate accounting courses are structured to enhance understanding of the interaction between students and outstanding professional accountants. Oral and written communication skills are emphasized during the third year through class presentations and papers.

Students in the first and second years of the professional program must maintain a 2.0 grade-point average in all graduate hours. Students who do not maintain these grade requirements are placed on academic probation for one semester. If the minimum grade requirement is not met at the end of that semester, the student's academic record is reviewed by the faculty to determine whether the student will be permitted to remain in the professional program in accounting.

Students who have earned a B.B.A. in accounting at the University of Iowa but have acquired a bachelor's degree from another university, college, or institution must apply to the M.B.A. and be accepted for admission. Completed courses in accounting from another university, college, or institution are accepted in the master's program only if they are equivalent to courses in the M.B.A. program. Students accepted into the master's program in accounting enter the third year of Program 1 (B.B.A. in accounting) from another university, college, or institution. Students accepted into the master's program in accounting enter the third year of Program 2 (B.B.A. in business but not in accounting, or Program 3 (B.A. not in business). All programs are adjusted to reflect the particular academic background or deficiencies of the successful applicant.

Program 1

This program is for students who have completed four preprofessional years at the University of Iowa or qualified students from other institutions. Undergraduate students entering the professional program must complete 60 semester hours of course work, including the following general preprofessional course work, prior to admission to the professional program.

- 6A-1 Introduction to Financial Accounting (with a grade of B- or higher) 3 s.h.
- 6A-2 Managerial Cost Accounting (with a grade of B- or higher) 3 s.h.
- 6B-1 Principles of Microeconomics 3 s.h.
- 6B-2 Principles of Macroeconomics 3 s.h.
- 6C-1 Quantitative Methods I 4 s.h.
- 6C-2 Quantitative Methods II 4 s.h.
- 6D-1 Computer Analysis 3 s.h.
- 6E-1 Statistical Analysis 3 s.h.

Upon successful completion of the first two years of the professional program, students receive the B.B.A. During the first two years in the program, undergraduate accounting students are expected to complete the Graduate Management Admissions Test (GMAT). If they have been highly successful during the first two years of the program and have completed the GMAT, they are admitted to graduate study and the third year of the program. After successfully completing the third year of the professional program (including an oral exam), students receive the M.A. in accounting.

FIRST YEAR (JUNIOR)

Full Semester

- 6A-131 Financial Accounting I 3 s.h.
- 6B-100 Introductory Financial Management 3 s.h.
- 6C-100 Introductory Management 3 s.h.
- 6D-100 Introductory Marketing 3 s.h.
- 6E-100 Statistical Analysis 3 s.h.

Spring Semester

- 6A-115 Introduction to Taxation 3 s.h.
- 6A-132 Financial Accounting II 3 s.h.
- 6A-135 Introduction to Law 3 s.h.
- 6A-170 Management Decision Models 3 s.h.

SECOND YEAR (SENIOR)

Full Semester

- 6A-130 Cost Accounting for Management Analysis and Control 3 s.h.
- 6A-133 Advanced Accounting 3 s.h.
- 6B-160 Microeconomics 3 s.h.
- 6E-160 Macroeconomics 3 s.h.

Spring Semester

- 6A-144 Advanced Tax Topics 3 s.h.
- 6A-146 Taxation Analysis 3 s.h.
- 6B-155 Business Policy 3 s.h.
- 6C-148 Law and Business 3 s.h.
- 6D-146 Accounting Electives 3 s.h.
Graduate Program

Doctor of Philosophy

See "Interdepartmental Graduate Programs" in the College of Business Administration section of the Catalog.

Courses

Primarily for Undergraduates

6A:190 Cooperative Education Internship 1.5 s.h.
6A:230 Introduction to Financial Accounting 1 s.h.
6A:231 Theory of Accounting 1.5 s.h.
6A:232 Advanced Financial Accounting 3 s.h.
6A:233 Managerial Accounting 3 s.h.
6A:234 Cost Accounting 3 s.h.
6A:235 Accounting 4 s.h.
6A:236 Accounting for Managers 3 s.h.
6A:237 Advanced Accounting 3 s.h.
6A:238 Advanced Tax Theory 3 s.h.
6A:239 Advanced Tax Structure 3 s.h.
6A:240 Special Problems in Accounting 3 s.h.
6A:241 Special Topics in Accounting 3 s.h.
6A:242 Financial Accounting and Reporting 3 s.h.
6A:243 Financial Management 3 s.h.
6A:244 Business Management 3 s.h.
6A:245 Business Policy 3 s.h.
6A:246 Business Statistics 3 s.h.
6A:247 Advanced Business Statistics 3 s.h.
6A:248 Business Research Methods 3 s.h.
6A:249 Business Communication 3 s.h.
6A:250 Business Law 3 s.h.
6A:251 Business Economics 3 s.h.
6A:252 Business Marketing 3 s.h.
6A:253 Business Finance 3 s.h.
6A:254 Business Management 3 s.h.
6A:255 Business Policy 3 s.h.
6A:256 Business Statistics 3 s.h.
6A:257 Business Research Methods 3 s.h.
6A:258 Business Communication 3 s.h.
6A:259 Business Law 3 s.h.
6A:260 Business Economics 3 s.h.
6A:261 Business Marketing 3 s.h.
6A:262 Business Finance 3 s.h.
6A:263 Business Management 3 s.h.
6A:264 Business Policy 3 s.h.
6A:265 Business Statistics 3 s.h.
6A:266 Business Research Methods 3 s.h.
6A:267 Business Communication 3 s.h.
6A:268 Business Law 3 s.h.
6A:269 Business Economics 3 s.h.
6A:270 Business Marketing 3 s.h.
6A:271 Business Finance 3 s.h.
6A:272 Business Management 3 s.h.
6A:273 Business Policy 3 s.h.
6A:274 Business Statistics 3 s.h.
6A:275 Business Research Methods 3 s.h.
6A:276 Business Communication 3 s.h.
6A:277 Business Law 3 s.h.
6A:278 Business Economics 3 s.h.
6A:279 Business Marketing 3 s.h.
6A:280 Business Finance 3 s.h.
6A:281 Business Management 3 s.h.
6A:282 Business Policy 3 s.h.
6A:283 Business Statistics 3 s.h.
6A:284 Business Research Methods 3 s.h.
6A:285 Business Communication 3 s.h.
6A:286 Business Law 3 s.h.
6A:287 Business Economics 3 s.h.
6A:288 Business Marketing 3 s.h.
6A:289 Business Finance 3 s.h.
6A:290 Business Management 3 s.h.
6A:291 Business Policy 3 s.h.
6A:292 Business Statistics 3 s.h.
6A:293 Business Research Methods 3 s.h.
6A:294 Business Communication 3 s.h.
6A:295 Business Law 3 s.h.
6A:296 Business Economics 3 s.h.
6A:297 Business Marketing 3 s.h.
6A:298 Business Finance 3 s.h.
6A:299 Business Management 3 s.h.
6A:300 Business Policy 3 s.h.
6A:301 Business Statistics 3 s.h.
6A:302 Business Research Methods 3 s.h.
6A:303 Business Communication 3 s.h.
6A:304 Business Law 3 s.h.
6A:305 Business Economics 3 s.h.
6A:306 Business Marketing 3 s.h.
6A:307 Business Finance 3 s.h.
6A:308 Business Management 3 s.h.
6A:309 Business Policy 3 s.h.
6A:310 Business Statistics 3 s.h.
6A:311 Business Research Methods 3 s.h.
6A:312 Business Communication 3 s.h.
6A:313 Business Law 3 s.h.
6A:314 Business Economics 3 s.h.
6A:315 Business Marketing 3 s.h.
6A:316 Business Finance 3 s.h.
6A:317 Business Management 3 s.h.
6A:318 Business Policy 3 s.h.
6A:319 Business Statistics 3 s.h.
6A:320 Business Research Methods 3 s.h.
6A:321 Business Communication 3 s.h.
6A:322 Business Law 3 s.h.
6A:323 Business Economics 3 s.h.
6A:324 Business Marketing 3 s.h.
6A:325 Business Finance 3 s.h.
6A:326 Business Management 3 s.h.
6A:327 Business Policy 3 s.h.
6A:328 Business Statistics 3 s.h.
6A:329 Business Research Methods 3 s.h.
6A:330 Business Communication 3 s.h.
6A:331 Business Law 3 s.h.
6A:332 Business Economics 3 s.h.
6A:333 Business Marketing 3 s.h.
6A:334 Business Finance 3 s.h.
6A:335 Business Management 3 s.h.
6A:336 Business Policy 3 s.h.
6A:337 Business Statistics 3 s.h.
6A:338 Business Research Methods 3 s.h.
6A:339 Business Communication 3 s.h.
6A:340 Business Law 3 s.h.
6A:341 Business Economics 3 s.h.
6A:342 Business Marketing 3 s.h.
6A:343 Business Finance 3 s.h.
6A:344 Business Management 3 s.h.
6A:345 Business Policy 3 s.h.
6A:346 Business Statistics 3 s.h.
6A:347 Business Research Methods 3 s.h.
6A:348 Business Communication 3 s.h.
6A:349 Business Law 3 s.h.
6A:350 Business Economics 3 s.h.
6A:351 Business Marketing 3 s.h.
6A:352 Business Finance 3 s.h.
6A:353 Business Management 3 s.h.
6A:354 Business Policy 3 s.h.
6A:355 Business Statistics 3 s.h.
6A:356 Business Research Methods 3 s.h.
6A:357 Business Communication 3 s.h.
6A:358 Business Law 3 s.h.
6A:359 Business Economics 3 s.h.
6A:360 Business Marketing 3 s.h.
6A:361 Business Finance 3 s.h.
6A:362 Business Management 3 s.h.
6A:363 Business Policy 3 s.h.
6A:364 Business Statistics 3 s.h.
6A:365 Business Research Methods 3 s.h.
6A:366 Business Communication 3 s.h.
6A:367 Business Law 3 s.h.
6A:368 Business Economics 3 s.h.
6A:369 Business Marketing 3 s.h.
6A:370 Business Finance 3 s.h.
6A:371 Business Management 3 s.h.
6A:372 Business Policy 3 s.h.
6A:373 Business Statistics 3 s.h.
6A:374 Business Research Methods 3 s.h.
6A:375 Business Communication 3 s.h.
6A:376 Business Law 3 s.h.
6A:377 Business Economics 3 s.h.
6A:378 Business Marketing 3 s.h.
6A:379 Business Finance 3 s.h.
6A:380 Business Management 3 s.h.
6A:381 Business Policy 3 s.h.
6A:382 Business Statistics 3 s.h.
6A:383 Business Research Methods 3 s.h.
6A:384 Business Communication 3 s.h.
6A:385 Business Law 3 s.h.
6A:386 Business Economics 3 s.h.
6A:387 Business Marketing 3 s.h.
6A:388 Business Finance 3 s.h.
6A:389 Business Management 3 s.h.
6A:390 Business Policy 3 s.h.
6A:391 Business Statistics 3 s.h.
6A:392 Business Research Methods 3 s.h.
6A:393 Business Communication 3 s.h.
6A:394 Business Law 3 s.h.
6A:395 Business Economics 3 s.h.
6A:396 Business Marketing 3 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 M.A. with geography or a joint M.A./J.D. with 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 department requirements accept up to 9 semester hours of course work from the other department to count toward the M.A. in economics, while the other departments accept up to 9 quarter credits in economics toward their degree.

Doctor of Philosophy

The Ph.D. program is designed to provide rigorous training in microeconomic theory, macroeconomic theory, mathematical economics, and econometrics. In addition, students select a major area for intensive study and specialization. The program has three components: a coordinated sequence of core courses, a set of major area seminars, and a dissertation.

Field Seminar

First Semester
60201 Mathematics for Economists I 3.0
60206 Microeconomics I 3.0
60206 Probability and Statistics 3.0

Second Semester
60201 Mathematics for Economists II 3.0
60206 Microeconomics II 3.0
60206 Probability and Statistics 3.0
220-154 Introduction to Mathematical Statistics 3.0

Third Semester
60221 Econometrics 3.0

Fourth Semester
60222 Applied Economics 3.0
Written examinations in microeconomics and macroeconomics before the second and a substantial research paper before the beginning of the third year complete the core requirements.

Elective Component

Each student chooses a major area of study in addition to the core courses. The requirement for the major area is a minimum of 24 semester hours of intensive study in a field to familiarize students with the relationship between their specialty and related fields. Students must achieve a 3.2 minimum grade-point average in the major area courses.

Dissertation

Students must present and defend a dissertation prospectus during their third year. At the time of candidacy, a dissertation supervisor is appointed to direct the dissertation. After the dissertation, an oral defense of the dissertation research completes the Ph.D. program.

Courses

Primarily for Undergraduates

Required Courses

Economics • Business Administration 259

60201 Mathematics for Economists I 3.0
60206 Microeconomics I 3.0
60206 Probability and Statistics 3.0
220-154 Introduction to Mathematical Statistics 3.0
60221 Econometrics 3.0

Elective Courses

60222 Applied Economics 3.0
Written examinations in microeconomics and macroeconomics before the second year and a substantial research paper before the beginning of the third year complete the core requirements.

Field Seminar

First Semester

60201 Mathematics for Economists I 3.0
60206 Microeconomics I 3.0
60206 Probability and Statistics 3.0

Second Semester

60201 Mathematics for Economists II 3.0
60206 Microeconomics II 3.0
60206 Probability and Statistics 3.0
220-154 Introduction to Mathematical Statistics 3.0

Third Semester

60221 Econometrics 3.0

Fourth Semester

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Third Semester

60221 Econometrics 3.0

Fourth Semester

60222 Applied Economics 3.0
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Primarily for Undergraduates

Required Courses

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Second Semester

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220-154 Introduction to Mathematical Statistics 3.0

Third Semester

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60206 Microeconomics I 3.0
60206 Probability and Statistics 3.0

Second Semester

60201 Mathematics for Economists II 3.0
60206 Microeconomics II 3.0
60206 Probability and Statistics 3.0
220-154 Introduction to Mathematical Statistics 3.0

Third Semester

60221 Econometrics 3.0

Fourth Semester

60222 Applied Economics 3.0
Written examinations in microeconomics and macroeconomics before the second year and a substantial research paper before the beginning of the third year complete the core requirements.

Elective Component

Each student chooses a major area of study in addition to the core courses. The requirement for the major area is a minimum of 24 semester hours of intensive study in a field to familiarize students with the relationship between their specialty and related fields. Students must achieve a 3.2 minimum grade-point average in the major area courses.

Dissertation

Students must present and defend a dissertation prospectus during their third year. At the time of candidacy, a dissertation supervisor is appointed to direct the dissertation. After the dissertation, an oral defense of the dissertation research completes the Ph.D. program.
Courses

Primarily for Upper-Division Undergraduates

6F060 Cooperative Education Internship 0.5 h.
6F106 Introductory Financial Management 3 h.
Financial planning, analysis of investments, and capital raising in business firms; equity securities; mutual fund management. Precalculus I and II, or consent of instructor required. Precalculus I and II, or consent of instructor required.
6F110 Directed Readings in Finance 3 h.
Independent and guided study in selected topics in business. Consent of instructor required.
6F120 General Insurance 1 h.
Theory of risk, insurance, reinsurance and reinsurance negotiation. Prerequisites: Principles I or II, or consent of instructor.
6F121 Investment Management 3 h.
Bond markets; the bond market; fixed income investments, fixed income securities, financial markets, and financial strategies. Prerequisites: Principles I or II, or consent of instructor.
6F122 Security Analysis 3 h.
Value of corporate securities; financial statement analysis; income and loss analysis. Prerequisites: Principles I or II, or consent of instructor.
6F123 Financial Markets and Institutions 3 h.
Structure of markets, role of the securities industry; Fed; Federal Reserve system; the money market; Federal Reserve engineering; the financial market; the stock market; the bond market. Prerequisites: Principles I or II, or consent of instructor.
6F124 Corporate Banking 3 h.
Interchange of commercial loans, other financial institutions: bank trust departments; bank credit operations; commercial banks; consumer affairs. Prerequisites: Principles I or II, or consent of instructor.
6F125 Futures Trading 3 h.
Derivatives, exchange markets, prime brokers, regulatory periods. Prerequisites: Principles I or II, or consent of instructor.
6F127 International Financial Management 3 h.
For managers dealing in foreign markets. Includes exchange rate, interest rates, trade terms, import/export, international trade, foreign financial systems, international trade. Prerequisites: Principles I or II, or consent of instructor.
6F128 Real Estate and Urban Land Economics 3 h.
A study of the urban economics of real estate, including land use, real estate investment, mortgage finance, and speculative investments in real estate development. Prerequisites: Principles I or II, or consent of instructor.
6F129 Entrepreneurship and New Business Formation 3 h.
Characteristics of successful entrepreneurs and strategies in starting a new business. Prerequisites: Principles I or II, or consent of instructor.
6F130 Entrepreneurship and New Business Formation 3 h.
Characteristics of successful entrepreneurs and strategies in starting a new business. Prerequisites: Principles I or II, or consent of instructor.
6F131 International Finance 3 h.
Multinational business; international financial management; valuation of foreign currency; foreign financial institutions; foreign economic systems. Prerequisites: Principles I or II, or consent of instructor.
6F301 Directed Readings in Finance 3 h.
Consent of instructor required.
6F302 Research in Finance 3 h.
Advanced topic in finance. Open only to students in M.A. concentration. Consent of instructor required.
6F305 Contemporary Topics in Finance 3 h.
6F307 Investment Management 3 h.
Trends of securities for individuals: analysis of financial statements, evaluation of securities, methods of managing investment portfolio. Prerequisites: Principles I or II, or consent of instructor.
6F308 Options 3 h.
Theory of options, option values, binomial options, options and other variables applied to stock exchange data; trading, management of financial risk. Prerequisites: Principles I or II, or consent of instructor.
6F314 Real Estate Investment Management 3 h.
Analysis of real estate investment and associated issues: risk management; real estate securities; investments in real estate; sources and impact of financial management. Prerequisites: Principles I or II, or consent of instructor.
6F315 Financial Policy Decisions—M.A. 3 h.
Business and financial policy decisions under uncertainty. Prerequisites: Principles I or II, or consent of instructor.
6F319 Instrument Threat and Planning 3 h.
Analysis of instrument threat and planning for financial and investment management. Prerequisites: Principles I or II, or consent of instructor.
6F321 Fixed Income Securities 3 h.
Structure of fixed income securities; the term structure of interest rates; market analysis; fixed income analysis. Prerequisites: Principles I or II, or consent of instructor.
6F351 Bond Valuation 3 h.
Analysis of bond valuation; fixed income securities. Prerequisites: Principles I or II, or consent of instructor.
6F352 Bond Valuation 3 h.
Analysis of bond valuation; fixed income securities. Prerequisites: Principles I or II, or consent of instructor.
6F353 The Corporate Financial Manager 3 h.
Analysis of corporate financial management. Prerequisites: Principles I or II, or consent of instructor.
6F354 Financial Management and Policy 3 h.
Financial management of corporate enterprises. Prerequisites: Principles I or II, or consent of instructor.
6F371 Multinational Finance 3 h.
Management of multinational financial and marketing activities. Prerequisites: Principles I or II, or consent of instructor.
6F372 Corporate Financial Management 3 h.
International financial management, foreign direct investment. Prerequisites: Principles I or II, or consent of instructor.
6F377 Corporate Financial Management 3 h.
International corporate financial management. Prerequisites: Principles I or II, or consent of instructor.
6F379 Research in Finance 3 h.
Consent of instructor required.

MANAGEMENT AND ORGANIZATIONS

Chair: Paul V. Osterman

Undergraduate degree: B.B.A. in Business Administration
Graduate degree: M.B.A., Ph.D. in Business Administration

Undergraduate Program

The undergraduate finance program deals with the theory, organization, and operations of the financial system from both a social and managerial viewpoint. Students are expected to develop analytical abilities and to present their analyses in both written and oral form.

Students graduating with a major in finance may look forward to managerial positions in corporate or investment banking, or in nonprofit or government organizations. The education received is consistent with progress toward responsible managerial positions.

Requirements for the Bachelor of Business Administration with a finance major are as follows:

6F111 Investments 3 h.
6F117 Intermediate Financial Management 3 h.
At least three semester hours of accounting beyond the basic core, followed by any three of these:
6F122 Security Analysis 3 h.
6F123 Financial Markets and Institutions 3 h.
6F124 Corporate Banking 3 h.
6F125 Futures Trading 3 h.
6F129 Entrepreneurship and New Business Formation 3 h.
6F131 International Finance 3 h.
6F133 International Finance 3 h.
6F135 International Finance 3 h.

Graduate Program

See "Undergraduate/Graduate Programs" in the College of Business Administration section of the Catalog.
Business Administration

Students majoring in industrial relations and human resources take courses of study that deal with labor relations, human resources management, organizational behavior, occupational design, and strategic management. The program is designed to give students a thorough background in these areas as well as an understanding of their application to real-world situations. Specific courses, research projects, and other experiences, such as internships, are limited to include both theoretical and pragmatic aspects of the field.

The industrial relations and human resources major prepares students for a variety of line, staff, and professional positions in business, government, nonprofit institutions, and education. Work areas for which graduates are qualified include personnel in wage and salary administration, staff benefits, selection and recruitment, performance appraisal, industrial training, manpower issues, collective bargaining, contract administration, grievance handling, dispute resolution, and labor legislation areas, such as equal employment opportunity, social insurance, equal pay, age discrimination, and labor relations laws.

Undergraduate Program

Requirements for the Bachelor of Business Administration with a major in industrial relations and human resources are as follows:

63.150 Persuasive Labor Legislation 3.0 s.h.
63.153 Collective Bargaining 3.0 s.h.
63.154 Personnel Administration 3.0 s.h.
63.155 Industrial Relations and Human Resources Management (6.0 s.h., maximum 15.0 s.h.)

Graduate Programs

Master of Arts

A Master of Arts with a major in industrial relations and human resources is available as a special one-year program for students who seek admission immediately after graduation. The degree provides concentrated graduate study in labor relations and personnel management.

The M.A. requires 30 to 42 semester hours, depending on the student's previous academic work, and is designed to allow maximum flexibility in developing a plan of study that meets the student's needs. Courses are organized in five basic groups: a major area, an optional minor area, foundation courses, common body courses, and a research requirement.

Major Area

The student's career goals and previous academic work are considered in the selection of courses for the major area of study. With the approval of the adviser, six courses are selected from the following graduate courses in industrial relations and human resources, for a total of 18 semester hours.

Course Descriptions

Introduction to Management and Organizational Behavior

Introduction to Labor Law

Administrative Management

Industrial Relations

Specialized Training in Industrial Relations and Human Resource Management

Courses in other related fields

International Business

International Business

International Economics

International Economics

Grievance Behavior in Organization

Social Behavior in Organizations

Organizational Design and Operations

Social Problems in Business Administration

Business Administration
Graduate Programs

Master of Arts

A nonthesis Master of Arts in management information systems is available to students with appropriate computer science experience, including a thorough background in structured programming (for example, 22C-10, 17); requirements include up to 12 seminar hours of foundation courses (to satisfy the ACBSE Common Body of Knowledge requirement) and at least 35 additional seminar hours of course work selected from the following.

Economics and Behavioral Science

Total of 3-6 semester hours.
6N-211 Management Economics 3 s.h.
6N-227 Administrative Science III 3 s.h.
6N-228 The Economic Environment of the Firm 3 s.h.

Research Methodology

Total of 2-12 seminar hours.
6N-280 Management Information Systems 4-8 s.h.
6N-281 Personnel Management 3 s.h.
6N-282 Applied Database Management 3 s.h.
6N-296 Business Telecommunication 3 s.h.
One or more of these:
6N-283 Organizational Behavior 3 s.h.
6N-274 Computer Programming 3 s.h.
6N-284 Computer Systems and Management 3 s.h.
6N-294 Artificial Intelligence for Management 3 s.h.
6N-295 Computer Operations Management 3 s.h.

Computer Science

Total of 6-12 seminar hours.
22C-115 Software Engineering I 3 s.h.
22C-114 Database Management Systems 3 s.h.
Students may substitute other computer science courses for 22C-115 and/or 22C-114 with the approval of their advisors.

Electives

Total of 3-9 semester hours.

Doctor of Philosophy

Candidates who want to earn a Ph.D. in management sciences should refer to the description of the Doctor of Philosophy program in "Interdisciplinary Graduate Programs" in the College of Business Administration section of the catalog.

Courses

Primarily for Undergraduates

6K-100 Cooperative Education (Intensive) 0-1 s.h.
6K-120 Computer Analysis 3 s.h.
The computer and its use in operations research, management; computer system terminology, programming, management information systems, use of applications software. Prerequisites: 22P-117 and 22P-125.
6K-121 Statistical Analysis 3 s.h.
Statistics for engineering management problems, regression, ANOVA, decision theory, forecasting. Prerequisites: 22P-117 and 22P-125.
6K-130 Production Management 3 s.h.

For Undergraduates and Graduates

6K-161 Directed Readings 0-6 s.h.
Coursework at instructor's request.
6K-170 Management Decisions Models 3 s.h.
Interdisciplinary programming, scheduling, linear, dynamic, combinatorial, with applications in economics, management, finance, and behavioral science. Prerequisites: 22P-117 and 22P-130.
6K-175 Management Information Systems 3 s.h.
Data, models, descriptions, use, requirements, system design, evaluation of database management systems. Prerequisites: 4K-67 and 4K-68.
6K-180 Systems Analysis and Design 3 s.h.
Design, implementation of an application-specific, software product in accordance of standards and practices. Systems engineering, information systems environment, performance evaluation, implementation tools and techniques, project management, implementation case studies. Prerequisites: 6K-120 and 121 or equivalent. Prerequisite: 22P-125.
6K-190 Applications of Database Management Systems 3 s.h.
Comprehension of a database system utilizing relational databases, regulations on issues of logical and physical design, database administration, security measures, administration. Prerequisites: 4K-68.
6K-200 Planning and Control 3 s.h.
Computer-based systems for production planning, scheduling, inventory control, and production management. Computer systems in applications to industry, including material requirements planning (MRP) and just-in-time (JIT) systems. Prerequisites: 2K-200, 2K-201, 2K-202, and 2K-203.
6K-210 Introduction to Data Communications 3 s.h.
Communication overview; computer-interfacing devices: hardware, software, voice data, fax, electronic principles, concepts of existing communication systems; relevance managerial issues. Prerequisites: 4K-120.

Primarily for Graduates

6K-210 Directed Recitations 0-6 s.h.
Coursework at instructor's request.
6K-220 M.A. Research Report 1 s.h.
Open only to M.A. students; course of instructor's election.
6K-275 Analytical Models in Management Systems 3 s.h.
Operations research through student's own case study, methodology, analysis models, optimization, modeling, evaluation, computer implementation, communication skills.

Doctor of Philosophy

Candidates who want to earn a Ph.D. in management sciences should refer to the description of the Doctor of Philosophy program in "Interdisciplinary Graduate Programs" in the College of Business Administration section of the catalog.

Courses

Primarily for Undergraduates

6K-100 Cooperative Education (Intensive) 0-1 s.h.
6K-120 Computer Analysis 3 s.h.
The computer and its use in operations research, management; computer system terminology, programming, management information systems, use of applications software. Prerequisites: 22P-117 and 22P-125.
6K-121 Statistical Analysis 3 s.h.
Statistics for engineering management problems, regression, ANOVA, decision theory, forecasting. Prerequisites: 22P-117 and 22P-125.
6K-130 Production Management 3 s.h.

For Undergraduates and Graduates

6K-161 Directed Readings 0-6 s.h.
Coursework at instructor's request.
6K-170 Management Decisions Models 3 s.h.
Interdisciplinary programming, scheduling, linear, dynamic, combinatorial, with applications in economics, management, finance, and behavioral science. Prerequisites: 22P-117 and 22P-130.
6K-175 Management Information Systems 3 s.h.
Data, models, descriptions, use, requirements, system design, evaluation of database management systems. Prerequisites: 4K-67 and 4K-68.
6K-180 Systems Analysis and Design 3 s.h.
Design, implementation of an application-specific, software product in accordance of standards and practices. Systems engineering, information systems environment, performance evaluation, implementation tools and techniques, project management, implementation case studies. Prerequisites: 6K-120 and 121 or equivalent. Prerequisite: 22P-125.
6K-190 Applications of Database Management Systems 3 s.h.
Comprehension of a database system utilizing relational databases, regulations on issues of logical and physical design, database administration, security measures, administration. Prerequisites: 4K-68.
Programs
See "Interdepartmental Graduate Programs" in the College of Business Administration section of this Catalog.

Courses

Primarily for Upper-Division Undergraduates

For Undergraduates and Graduates

Undergraduate Program

The Department of Marketing offers courses that are designed to develop students' understanding of the local and social economic roles of marketing and prepare them for careers in business.

Several decades ago, the study of marketing dealt almost exclusively with business activities associated in the flow of goods from production to consumption. Today the study of marketing includes study of the behavioral sciences, communications, statistical analysis, and computer methods, as well as marketing's functional areas.

Students graduating with majors in marketing have opportunities for employment as market analysts, sales managers, buyers, community action agents, purchasing agents, advertising trainees, audit 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:

606:134 Marketing Research
606:137 Management in Business
606:138 Consumer Behavior
606:139 Sales Management
606:140 Topics in Marketing

606:144 Developing New Product Ideas
606:222 Buyer Behavior
606:231 Industrial Marketing
606:233 Marketing Research Methods
606:239 Multivariate Analysis
606:241 Management Development Models
606:252 Secondary Market Behavior
606:253 Business Negotiation
606:254 Professional Selling
606:255 Professional Selling
606:256 Professional Selling
Doctor of Dental Surgery

The College of Dentistry is both administratively and physically an integral part of the University. It draws on and contributes to the University's diverse resources, and its students enjoy all the advantages and privileges enjoyed by the general student body. The college benefits particularly from its cooperative relationship with the Colleges of Medicine, Nursing, and Pharmacy in The University of Iowa Health Center, whose teaching, research, and service activities have received national recognition.

The basic educational program leading to the Doctor of Dental Surgery (D.D.S.) consists of a three-year period of preprofessional study and four years of study in the College of Dentistry. The dental curriculum consists of five basic units:

- Basic sciences: gross anatomy, biochemistry, histology, physiology, general pathology, oral pathology, pharmacology, microbiology
- Restorative dental sciences: gross, microscopic, and histologic dental anatomy, dental materials, endodontics, operative dentistry, fixed partial dentures, removable prostheses
- Oral medicine: preventive dentistry, oral diagnosis, dental radiology, oral pathology, and pain control, oral and maxillofacial surgery, periodontology
- Community dentistry: ethics, epidemiology, nutrition, preventive dentistry, community health, principles of human behavior, dental economics, dental jurisprudence, geriatrics, communication
- Pediatric dentistry: facial growth and development, pedodontic dentistry and orthodontics

To achieve a close correlation of the basic sciences with clinical dentistry, the student is introduced to clinical patient treatment situations during the first year.

The second-year program completes the basic sciences and technical courses, plus definitive clinical patient treatment.

Throughout the clinical student studies there is a series of clerkships that expose them to eight clinical disciplines.

Fourth-year dental students are involved in the delivery of comprehensive dental care to an entourage of patients simulating conditions in private dental practice. They also are exposed to various extramural health programs that include hospitals, mental health institutions, nursing homes, and the Special Patient Care Clinic. They also may participate in the Colorado Migrant Worker Program or the Foreign Dental School Exchange Program, which gives exposure in areas of dentistry usually not observable in an academic setting.

Promotions and Graduation

Student promotions and graduations 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 unsuited to be promoted or to enter the dental profession.

Committee for Appeals

When a student has been advised to withdraw from the college or faces 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 clear, 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 insight 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 Examinations

Iowa and the states of Colorado, Illinois, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming belong to the Central Regional Dental Service, which serves as the testing agency for dental licensure examinations. These examinations are administered at several testing sites located within a state's dentistry within the region. Examination dates are determined by the Central Regional Dental Testing Service and are available from its administrative service.

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 examination is then filed with the individual state board of dentistry.

Most states also require the National Board, conducted by the American Dental Association, in lieu of individual state written examinations. A Jurisprudence examination also is required in many states, including Iowa.

Facilities

The Dental Science Building, a major unit of the Iowa health center campus, enables the college to accelerate research activities and facilitates the development of interdisciplinary communications in health center teaching, research, and patient care activities. The health center includes the Colleges of Medicine, Nursing, and Pharmacy; the Bowes Science Building; The University of Iowa Hospitals and Clinics; and the Health Library for the Health Sciences. The Health Library houses all of the University's special health science holdings, a total of 146,750 volumes, including more than 18,000 volumes on dentistry and allied scientific subjects, and more than 280 dental journals the college currently receives. This library receives more than 2,000 journals from the combined health professions.

The Dental Science Building consists of two, four-story, connected, four-story wings located on either side of a mall. The north wing is devoted to clinical teaching with various departmental clinic facilities, support laboratories, clinical research space, offices, and a cafeteria. The south wing houses teaching laboratories, research laboratories, the first computer area, educational media center, and programs in preventive and community dentistry.

Student Organizations

All dental students are eligible for membership in the American Student Dental Association through its local chapter. There also are local chapters of the American Association of Dental Schools, the American Association of Women Dentists, the American Society of Dental Students, and the Student National Dental Association. Students who rank in the upper 12 percent of their senior class are eligible for election to Omicron Kappa Upsilon, national scholastic honorary dental society. Two national dental professional organizations, Delta Sigma Delta and Psi Chi Omega, have chapters housed at Iowa. Both organizations have housing available to male and female dental students. In addition, they provide both academic and social activities for students and their spouses.

Expenses

The College of Dentistry maintains a Supply Inventory Management System (SIMS), which provides students with instruments and supplies necessary throughout dental training. The SIMS usage fee for the D.D.S. is payable in monthly installments during the first semester of the program.

A fee for expendable laboratory supplies is charged each of the first two years. A $1200 breakeven fee also must be deposited; the deposit is refunded upon graduation or termination of enrollment.

Financial Aid

Financial assistance for dental students is based on need. Students applying for the Health Professions Loan through the Federal Family Financial Statement (FFS), which includes an evaluation of parent income and assets. Nearly all dental students are eligible for Health Professions Loans, Perkins Loans, state grants, and Stafford Loans. Interest on these loans is 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 loans are available through the financial aid coordinator at the College of Dentistry.

See "Financial Aid" in the Iowa section of the Catalog or inquire at the Office of Student Financial Aid for updated information.
on financial assistance available to dental students.

Dental Research Awards (DRA)

Dental Research Awards are given each year to qualified entering dental students. The DRA provides financial support ranging from $2,000 to $8,000 per year for as many as four years, if the student maintains an appropriate level of performance. Awards are engaged as assistance in research work with faculty mentors.

Other Awards

The college offers Merit Awards that provide financial support for as many as four years, based on satisfactory performance in school.

Minorities

Financial assistance grants and loans are available to minority students who qualify under The University of Iowa Educational Opportunity Program and the Opportunity in Iowa Program.

Arkansas Contract

Under an agreement with The University of Iowa College of Dentistry, the state of Arkansas makes supplemental tuition payments for its residents who are dentistry students at Iowa. These payments enable the Arkansas students to pay the equivalent of Iowa resident tuition for their study here.

Admission

Applicants must submit a completed application form to the American Association of Dental Schools Application Service (AADSAS). The AADSAS forms are available from the University Office of Admissions or the College of Dentistry Academic Affairs Office.

Applications are accepted beginning June 1 of the year prior to the year for which application is made. Completed applications should be on file at AADSAS by November 30. Application should apply as early as possible and would not delay until after the Dental Admission Test (DAT) is taken. Notification of acceptance is sent beginning December 1.

Prospective dental students are encouraged to enroll in an education program that leads to a baccalaureate 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 law “Combined Liberal Arts-Dentistry Program” in this section of the Catalog.

Predental Studies

The basic academic requirements for admission to the College of Dentistry is the completion of no fewer than 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 conversation with the academic requirements for a bachelor’s degree at the college attended.

Physics: one year requirement for 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, and of which one-fourth must be laboratory work.

Biological Sciences: one year (equivalent to 8 semester hours), which must include appropriate laboratory work; the requirement may be satisfied by one-year course in general botany, zoology, or physiology. Courses in histology and cell physiology also are recommended.

Electives: sufficient course work in the social sciences, philosophy, psychology, history, foreign languages, and mathematics to provide a well-rounded educational background.

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 hours requirements 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 students who enter the College of Dentistry 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 fulfill the College of Liberal Arts residence requirements, before enrollment at the College of Dentistry. See “Early Admission to Medicine or Dentistry” in the College of Liberal Arts section of the Catalog.

Grade-Point Average Requirement

Applicants should have a cumulative grade-point average of at least 2.5. The admission 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 will be contacted to arrange an interview, usually after the AADSAS application is received by the administration office.

Required Dental Admission Test

All applicants must complete the Dental Admission Test (DAT) prescribed by the Council on Dental Education of the American Dental Association. Tests are given twice a year. The University of Iowa is a testing center.

Applicants must take the test no later than fall in order to be admitted for the following year. Test application forms are available from the University Office of Admissions, the College of Dentistry Academic Affairs Office, or the American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611. Test application deadlines are typically 30 to 45 days prior to the exam.

Deposit by Accepted Applicants

Applicants accepted before February 1 are required to submit a $500 deposit within 30 days after notification of acceptance. Applicants admitted after February 1 must submit the deposit within two weeks after notification of acceptance. This deposit is nonrefundable, but is credited toward the fees.

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. Final applicants meeting minimum requirements, the admission 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 letters.

Early Admissions

The College of Dentistry has an early admissions program set up with The University of Iowa College of Medicine and Cornell College in Mount Vernon, Cornell College in Eight Mile, and Luther College in Decorah, Iowa; Augustana College in Rock Island, Illinois; and Trinity University at A&M University in Fresno, Texas.

The Dental Early Admission Program (DEAP) allows academically qualified students interested in a dental career to be admitted as early as the first year of their undergraduate college education with special permission to matriculate to the College of Dentistry until they have completed three years (of them) with education. During these three years, students are engaged in a liberal arts curriculum that incorporates the dental preclinical courses.

Once selected for the program, students must maintain at least a 3.20 grade-point average to assure matriculation to the University of Iowa College of Dentistry.
students with a learning experience emphasizing the team approach.

Seminar 80-103 Clinical Dental Radiology for Dental Hygienists. Weekly lectures and seminars reinforce clinical learning in 80-114 Seminar: Dental Hygiene Concepts and Practice. Senior students also are enrolled in 225-101 Biostatistics and 112-145 Introduction to Geriatric Dentistry.

Courses traditionally taught as isolated subject-oriented units, such as dental health education, public health, and epidemiology, are incorporated into an integrated core, 80-122 Practicum: Community Dental Hygiene and 80-124 Seminar: Community Dental Hygiene. Learning emphasis is on the relationship between the underlying theory and practical applications of community dental health.

Students focus broad community health issues relative to the provision of dental health care. Real-life experiences enable them to apply knowledge of human behavior, basic principles of communication and marketing, and educational and research techniques in the design, implementation, and evaluation of health care and educational programs.

Aging Studies Program
As part of their dental hygiene studies, students may participate in a multidisciplinary program in aging studies. The program provides supportive course work for students who want to develop specialization in gerontology. For further information, see "Aging Studies Program" in the College of Liberal Arts section of the Catalog.

Minors and Double Majors
Dental hygiene students have the opportunity to develop a minor in another field or to pursue a double major. Students who select this option should plan their course of study with their dental hygiene advisor in close cooperation with faculty from the minor or other major department.

Admission
HIGH SCHOOL PREPARATION
Specific high school courses required are four years of English, four years of foreign language (proficiency Spanish), at least three years of mathematics, including two years of high school algebra and one year of high school geometry; and one year of biological sciences and chemistry.

COLLEGE PREPARATION
Eligibility for admission to the professional program in dental hygiene requires fulfillment of the General Education Requirements of the College of Liberal Arts and completion of the following dental hygiene pre requisites:

- Zoology or general biology - 3 h.
- Introduction to human disease - 3 h.
- 4 h. for transfer students from two-year colleges
- Inorganic chemistry - 4 h. General Chemistry I

Organic chemistry, including
- Biochemistry I: 4-8 General Chemistry I
- Microbiology: 4-8 Microbiology
- Nutrition: 10-16 Introduction
- Nutrition: 4-8 Introduction
- Psychology: 4-8 Introduction
- Psychology: 4-8 Introduction
- Sociology: 4-8 Introduction to Sociology
- Sociology: 4-8 Introduction to Sociology
- Anatomy: 4-8 Principles of Human Anatomy and 60-10 Introduction to Laboratory Human Anatomy
- Physiology: 4-8 Principles of Human Anatomy and 60-10 Introduction to Laboratory Human Anatomy

These prerequisites provide the educational basis for the dental hygiene course of study. In addition, students admitted to the professional program of study must complete full credit certification in the appropriate registration (CFR) at the basic life support for health care providers level before they enter the program.

Completion of a bachelor's degree or an associate of arts degree from an Iowa Area Community College fulfills the General Education Requirements with the exception of the foreign language requirement and three semester hours of foreign civilization and culture. However, the completion of a two-year associate degree program in dental hygiene does not provide an appropriate background for transfer into the baccalaureate program at Iowa State University.

Students may begin the professional program in dental hygiene only if the fall, those enrolled in the University of Iowa College of Liberal Arts need submit only the dental hygiene application. Transfer students must submit both College of Liberal Arts and dental hygiene applications.

Although applications are accepted and completed throughout the academic year, it is recommended that students apply for dental hygiene admittance by November 1 preceding the fall semester in which they wish to enter the program.

Graduate Program
The graduate program fulfills the need for professional program in the advancement of new knowledge in dental hygiene and provides leadership in the profession. The graduate program also fulfills the need to prepare students in dental hygiene education. Therefore, graduate program goals emphasize the acquisition of advanced scientific knowledge in dental hygiene, the social, biological sciences, and dental hygiene knowledge and of expertise in computing technology.

The curriculum design provides students with the major concentrations in advanced dental hygiene and certain social sciences. Students consider the implications of applied sociological, psychological, economic, political, and environmental conditions in dental hygiene. Selected reading materials state values, specific elements of dental care delivery systems in relation to individual, similar, and community health situations.

Study in the educational field includes dental hygiene trends, emphasis on dental hygiene education, elements of curriculum design, and the theory and application of dental science, and professional training in dental hygiene.

Approximately 14 semester hours are taken in assigned courses to acquire advanced knowledge in dental hygiene and 14 are taken in research methodology and thesis preparation and defense. The remaining 6 semester hours include electives in the biological and social sciences.

Elective course work related to the biomedical sciences may include microbiology, histology, biochemistry, and pathology, epidemiology, and noninvasive diagnosis.

Electives emphasize the social, economic, and political aspects of health. Include epidemiology, medical sociology, health care organization and administration, and health economics.

Students also are encouraged to consider taking electives in higher education such as educational measurement, theories of learning, and administration.

Dental hygiene graduate students take the following courses:

- 41-260 Health Care Management 3 h.
- 80-114 Independent Study 3 h.
- 80-115 Seminar: Dental Hygiene Literature Review 3 h.
- 80-123 Evaluation of Dental Hygiene Research 3 h.
- 80-125 Research: Dental Hygiene 3 h.
- 80-126 Social Pattern and Oral Health 3 h.
- 80-127 Criminal Dental Hygiene 3 h.
- 45-210 Selected Topics in Dental Hygiene Education 2-3 h.
- 80-128 The Dental Hygiene 3 h.

111-310 Statistical Methods for Dental Scientists 3 h.

111-312 Research Design in Dentistry 4 h.

Although students may begin the 34-semester hour program during the summer session or fall semester, enrollment at the beginning of the fall semester is preferred. Most students should expect to take two academic years to complete degree requirements.

Admission
Applicants for admission are subject to the general rules of the Graduate College. Departmental requirements include an acceptable score on the Graduate Record Examination (GRE) General Test and a 2.80 minimum undergraduate cumulative grade point average. The undergraduate education of the applicant should include courses equivalent to those in the undergraduate dental hygiene major at The University of Iowa.

Applicants for admission must submit official transcripts of all undergraduate academic records, an application for admission to the Office of Graduate and Professional College Admissions. Since these materials must be received before the candidate's application can be processed, the candidate's application can be processed, students are encouraged to submit materials as
early as possible prior to the semester for which admission is desired. Application form admission and information on graduation requirements can be obtained from the graduate admissions office.

Facilities

University of Iowa dental hygiene majors receive their professional preparation in the University's modern Dental Science Building. This building is part of The University of Iowa Health Center complex, one of the nation's most outstanding health science teaching, research, and patient care facilities.

Financial Aid

In addition to financial assistance available to University students, there is a limited number of scholarship awards and loans specifically for undergraduate dental hygiene students. These loans are based on assessment of students' academic records as well as financial need. Financial support for graduate students is available through teaching assistantships and patient care service awards. Awards are based on students' academic record and potential contribution to the teaching and patient service goals of the program. Resident tuition is charged to out-of-state students who receive teaching assistantships or patient service awards. Low-interest loans also are available through the department.

Excellent undergraduate and graduate scholarship are available for minority students who have achieved academic records. For further information, see "Financial Aid" in the College of Dentistry section of this Catalog.

Courses

For Undergraduates

Dental hygiene courses are open only to dental hygiene students.

BH 111 Dental Anatomy 2 h.

Dental terminology; morphological characteristics of teeth; oral pathology; relationship and historical considerations; emphasis on morphology of oral structures in clinical dental hygiene.

BH 112 and 212 Anatomy 1 h.

Include: microanatomy.

BH 103 Dental Hygiene Care I 5 h.

Clinical hygiene techniques, patient preparation of patient and patient care, oral health education, role of the dental hygienist's role in providing comprehensive hygiene assessment and patient care experience.

BH 104 Introduction to Dental Hygiene 2 h.

Clinical application of concepts from BH 103, which is compulsory.

BH 105 Dental Hygiene Care II 2 h.

Continuation of BH 104, emphasis on assessment of health status, prevention of oral disease.

BH 106 Fundamentals of Dental Hygiene 2 h.

Nurtures student's personal freedom to develop in preparation for professional dental hygiene programs, emphasizing both theoretical and practical concepts related to academic and clinical dental hygiene, development of critical thinking and problem solving, and professional attitude, patient care.

BH 111 Independent Study 2 h.

Enrollment in BH 111, an introduction to dental hygiene practice, education, research, public health, and professional hygiene care.

BH 112 Clinical Dental Hygiene 7 h.

Preparation of advanced dental hygiene care: emphasis on comprehensive preventive, clinical services.

BH 121 Dental Hygiene Concepts and Practice 4 h.

Research, advocacy in preventive prophyactic, ethical, legal, social implications of health care providers, values, emergent ethical issues in dental hygiene practice.

BH 122 Community Dental Hygiene 7 h.

Applications of principles and concepts, including educational, technological, clinical dental hygiene skills, writing and oral presentations, service learning activities, community needs assessments.

BH 123 Community Dental Health 4 h.

One credit for both; one health course, professional course, prevention and diagnosis care, professional implementation.

For Graduates

200-211 Geriatric Dental Hygiene Literature 2 h.

Literature on geriatric, sociological, educational trends in oral health.

201-212 Evaluation of Dental Hygiene Research 3 h.

Evaluation of reports as a basis for knowledge for dental hygiene practitioners, dissemination of research reports, available resources.

202-230 Research in Dental Hygiene 2 h.

Literature review, applications of research topics, problem design for therapist's thesis.

203 Social Factors and Oral Health 3 h.

Epidemiology of current research on oral, sociological, psychological factors in one hygiene and oral health care.

204 Clinical Dental Hygiene Education 4 h.

Pedagogic, ethical, structural, educational, social, administrative principles, techniques, methodologies unique to clinical setting.

205 Advanced Topics in Dental Hygiene 2 h.

Clinical experience in various areas, clinical education, continuing education for dental hygiene educators, emphasis on observation, practical experience in service, research training.

206-210 Thesis Dental Hygiene 4 h.

ENDODONTICS

Head: Richard A. Wolven

Assistant Professor: Edward R. Wolven

Assistant Professor: Myriam Bouchard

Associate professors: William T. Johnson, Lisa J. Miller

Assistant professor: Eric M. Steva

Graduate degree: M.S. in Endodontics

Procedural Program

Course work and clinical experiences in endodontics are of vital importance in the overall education of a dental student.

Endodontics, taught during the sophomore year, includes both didactic and laboratory courses. The clinical endodontics students study both normal and pathological conditions of the dental pulp and periapical structures, emphasizing the areas of prevention and diagnosis of pulp and periapical disease. Students treat endodontic patients under direct supervision of faculty and staff.

Advanced Programs

The advanced programs offered by the Department of Endodontics are designed to prepare qualified graduates for the practice of endodontics and to prepare a career in dental education and research.

The department offers two types of post-D.D.S. programs.

The Master of Science program requires a minimum of 40 semester hours (three years) of graduate work, including an original research project and thesis. Students devote a portion of their time to the study of a total of 90 semester hours.

A certificate in endodontics also is awarded. The certificate program involves course work for a total of 50 semester hours and requires no formal thesis. Candidates are expected to write a scientific paper, publishable quality, based on original research. An individual plan of study is prepared for each student.

These programs satisfy the training requirements of eligibility of the American Board of Endodontics.

Through the advanced programs, dentists develop their skills and acquire a broad background of the endodontics specialty for teaching and practice; gain enough knowledge and experience in the educational process to be able to function confidently as dental educators; recognize the value of academic research; and develop the ability to plan, conduct, and report the results of research investigations.

Applicants for the advanced programs in endodontics must be graduates of an accredited U.S. college of dentistry or foreign equivalent and must comply with the requirements for admission to the Graduate College of The University of Iowa.

The advanced programs in endodontics begin July 1. Applications should be made for the preceding October 15. Students who have met the requirements for admission to the Graduate College must be accepted into the program by December 31. Application forms for admission to the Graduate College, which must be submitted, may be requested a personal interview with the applicant. Students in the program must maintain a 3.0 grade-point average to receive a certificate or degree. Students who fail to meet this level will be allowed one semester to correct the deficiency. The deficiencies will be transferred to the deficiency to receive careful consideration.

Students enrolled in the advanced programs may not involve themselves in private practice outside the college. A student who does so will be immediately discharged from the program if the deficiency receive careful consideration.

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Graduate Programs

Residency Program

The residency program in oral and maxillofacial surgery combines clinical and didactic training to prepare graduates for specialty practice. Every effort is made to adapt the program to the individual patient, abilities, and development of the student. 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 program and scope of training.

The residency program covers four years of hospital training, presenting 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.

Compliance in clinical oral and maxillofacial surgery requires knowledge of the basic medical sciences related to surgery. 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 prosthodontics, orthodontics, periodontology, and laboratory procedures.

The assumption of increased responsibility and the opportunity for critical and operating-room experience are important aspects of residency training.

Residents gain clinical training in maxillofacial surgery through an assigned rotation in the Department of Anesthesiology. Previous anesthetic training in physical diagnosis, pharmacology, physiology, and microbiology would increase critical-surgery significance and increase responsibility in the operating room.

Development and implementation of a research project under the supervision of a research investigator provides the value of the residency training.

Senior residents may be given responsibility for major oral and maxillofacial surgery cases during rotations at The University of Iowa Hospitals and Clinics and at Veterans Affair Medical Center. Each fourth-year resident is assigned to a rotation in a clinical and didactic coordinator and assumes responsibility to quality control. For information, write the American Board of Oral and Maxillofacial Surgery.

Master of Science

Requirements for the M.S. may be completed during residency. The M.S. program is a four-year course of integrated didactic and clinical training, 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 September 1 for admission on July 1 of the next year.

Applicants must take the Graduate Record Examination (GRE) General Test, must be graduates of an accredited college of dentistry, must be licensed to practice dentistry in the United States, and should be in the upper third of their graduating class.

Documents required include application for graduate oral and maxillofacial surgery; an applicant’s report form from the applicant’s references; transcript; and letters of recommendations from the dean of the dental college from which the applicant graduated and from two professional references.

Inquiries are not accepted but are strongly recommended.

Applicants are selected through a matching program sponsored by the American Association of Oral and Maxillofacial Surgeons.

Applications are made after the match results are revealed and the staff elects to take official action. All applications should be received on or before February 1 prior to the July 1 effective date.

The Office of Graduate and Professional Colleges. Admissions sends admission forms to applicants. The forms must be completed for the Graduate College by March 1.

Facilities

The University of Iowa maintains an outstanding basic and clinical medical sciences department that mentors and supports scholarly research and superior clinical practice. The facilities at The University of Iowa Hospitals and Clinics, the Veterans Affairs Medical Center, and the College of Dentistry in addition provide appropriate environment for residency training in oral and maxillofacial surgery.

Courses

Dental Hygiene

187.164 Anesthesia and Analgesia 1.5 h.
Prerequisites, indications, and responsibilities in dental professional practice.

Preadontal

187.165A Anorectum and Pelvic Control 1.5 h.
Principles, techniques, and applications of anorectal and pelvic control. Surgical and pharmacologic therapy for hemorrhoids and fistulae in situ.

147.26 Oral and Maxillofacial Surgery 1 h.
Principles, techniques, complications, and applications of anesthesia, analgesia, and surgery of oral and maxillofacial surgery.
ORAL PATHOLOGY, RADIOLoGY, AND MEDICINE

Head: Gilbert B. Jagy
Associate Professors: Betty S. Griswold, William J. Kneitz, Steven D. Vensel, and Alan N. Wertz
Assistant professors: Robert F. Appel, David L. Tait, and Daniel H. Y. Stein
Assistant professor: Peter M. Ichimura
Instructor: George C. Estrella, Thomas F. Willcox
Adjunct professor: George Jones
Assistant professor: Henry R. Fujita
Assistant professor: Frank M. Haggerty
Graduate degree: M.S. in Radiology

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 examination of patients.

Graduate Programs

Master of Science

Stomatognathy is the science of structure, function, and disease of the oral cavity. Study methods include preparation of related humanities, evaluation of clinical signs and symptoms, and use of biochemical, microscopic, and radiologic procedures to formulate a diagnosis and a plan for therapy.

The postdoctoral programs are divided and flexible, emphasizing oral pathologic processes, oral and maxillofacial pathology, or oral medicine. These programs are intended for students with a background either in oral pathology, oral and maxillofacial radiology, or oral medicine. The programs allow postdoctoral students to obtain advanced clinical, didactic, and research-related education while pursuing the Master of Science degree.

M.S. in Stomatognathy with Oral Pathology Emphasis

Dental school graduates in this program pursue comprehensive studies of biology, medicine, and health sciences in preparation for teaching and research. A minimum of 25 semester hours of satisfactory graduate work is required. Candidates for the M.S. in stomatognathy with oral pathology emphasis need a minimum of 2 years of preclinical dental student studies. The requirements for the program are as follows:

Certificate in Oral Pathology and M.S. in Stomatognathy with Oral Pathology Emphasis

This program combines the minimum requirements of the certificate and master’s degree programs. Completion time is usually 30 to 48 months. The educational requirements of the certificate program in oral and maxillofacial radiology meet the requirements for preexposure of dental specialists as set forth by the American Board of Oral and Maxillofacial Radiology.

Certificate in Oral Pathology and M.S. in Stomatognathy with Oral Medicine Emphasis

Students in this program pursue comprehensive studies in health sciences in preparation for teaching and research. A minimum of 42 semester hours of graduate credit is required, which includes the training based on research conducted during the program.

Certificate in Oral Medicine and M.S. in Stomatognathy with Oral Medicine Emphasis

This program combines the minimum requirements of the certificate and master’s degree programs. Completion time is usually 24 to 36 months. The certificate program in oral medicine meets the requirements for preexposure of dental specialists set forth by the American Board of Oral and Maxillofacial Radiology.

Program of Study

Students in all six 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

60:202 Advanced Anatomy for Head and Neck Surgery 3 s.h.
60:201 General Pathology for Medical Students 3 s.h.
60:203 Histologic Techniques for Medical Students 10 s.h.
60:200 Oral Pathology Literature Review 2 s.h.
60:250 Forensic, Laboratory, and Histological Features of Disease 2 s.h.
60:235 Research in Oral Radiology, Pathology, and Radiology 2 s.h.
60:243 Clinical Oral and Maxillofacial Radiology 2 s.h.
111:202 Research Protocol Seminar 2 s.h.
111:212 Statistical Methods for Dental Research 3 s.h.
112:232 Pathophysiology of Bone 2 s.h.
112:210 Dental Sciences Research Methodology 2 s.h.

ADDITIONAL REQUIRED COURSES

Oral Pathology Track

60:202 Anatomy of the Oral and Maxillofacial Cavity 4 s.h.
60:237 Oral and Maxillofacial Radiology 1 s.h.
60:240 Microscopic Anatomy 1 s.h.
60:244 Hospital Oral Pathology 2 s.h.
112:251 Pathophysiology of Skin and Oral Mucosa 1 s.h.
112:253 Biological Aspects of Dentistry 3 s.h.
112:254 Infectious Diseases 1 s.h.
112:255 Oral and Maxillofacial Radiology Track

71:109 Introduction to Radiology 1 s.h.
71:110 Environmental and Radiological Health Protection 1 s.h.
71:211 Principles of Radiology 1 s.h.
71:212 Human and Mammalian Radiology 4 s.h.
71:213 Nuclear Radiology 4 s.h.
60:203 Clinical Oral and Maxillofacial Radiology 2 s.h.
60:244 Advanced Oral and Maxillofacial Radiology 4 s.h.
87:215 Physical Diagnosis 2 s.h.

Oral Medicine Track

60:225 Internship in Oral and Maxillofacial Pathology 1 s.h.
60:238 Introduction to Histopathology 1 s.h.
60:244 Technical and Oral Radiology 2 s.h.
60:249 Advanced Clinical Laboratory Medicine 2 s.h.
60:248 Advanced Complex Hospital Diagnosis 2 s.h.
60:249 Seminars in Oral Medicine 2 s.h.
60:249 Complex Hospital Diagnosis 2 s.h.
112:251 Pathophysiology of Skin and Oral Mucosa 2 s.h.
112:253 Biological Aspects of Dentistry 2 s.h.
112:254 Infectious Diseases 1 s.h.
112:255 Advanced Dental Therapeutics 1 s.h.

Facilities

Facilities reserved exclusively for the Department of Oral Pathology, Radiology, and Medicine, and the Oral Medicine program include a radiology teaching laboratory, and a medical education in the University's College of Medicine.

In addition, the College of Dentistry has joint-use research laboratories that are well-equipped and staffed for conducting research involving histology, histochemistry, immunology, and histology, radiology, and medicine.
Facilities

The department has 20 modern, well-equipped patient rooms dedicated exclusively to periodontics, and access to hospital experience in the University of Iowa Hospital and Clinics and the Veterans Affairs Medical Center, both nearby. Research facilities include a departmental research laboratory and collaborating laboratories in histology, immunology, biomaterials, chemistry, tissue culture, molecular biology and biochemistry, as well as animal facilities. These college facilities are in addition to those available by arrangement with The University of Iowa Hospital and Clinics, Esko O. Medical Research Building, and medical laboratories; and the Veterans Affairs Medical Center.

Financial Aid

Applicants must be financially prepared to undertake unavoidable out-of-pocket expenses. Assistantships and loans are offered, depending on available resources.

Courses

92-164 Introduction to Periodontology 2 a.h.

Periodontal Therapy

92-165 Advanced Periodontics for Dental Hygienists 2 a.h.

92-166 Predoctoral Periodontics 1 a.h.

92-167 Predoctoral Periodontics II 1 a.h.

92-168 Predoctoral Periodontics III 1 a.h.

92-169 Predoctoral Periodontics IV 1 a.h.

Graduate

92-261 Advanced Periodontology 2 a.h.

92-301 Clinical Fellowship in Periodontics 2 a.h.

92-302 Clinical Fellowship in Periodontics II 2 a.h.

92-303 Clinical Fellowship in Periodontics III 2 a.h.

92-304 Clinical Fellowship in Periodontics IV 2 a.h.

92-305 Clinical Fellowship in Periodontics V 2 a.h.

92-306 Clinical Fellowship in Periodontics VI 2 a.h.

92-307 Clinical Fellowship in Periodontics VII 2 a.h.

92-308 Clinical Fellowship in Periodontics VIII 2 a.h.

92-309 Clinical Fellowship in Periodontics IX 2 a.h.

92-310 Clinical Fellowship in Periodontics X 2 a.h.

92-311 Clinical Fellowship in Periodontics XI 2 a.h.

92-312 Clinical Fellowship in Periodontics XII 2 a.h.

92-313 Clinical Fellowship in Periodontics XIII 2 a.h.

92-314 Clinical Fellowship in Periodontics XIV 2 a.h.

92-315 Clinical Fellowship in Periodontics XV 2 a.h.

92-316 Clinical Fellowship in Periodontics XVI 2 a.h.

92-317 Clinical Fellowship in Periodontics XVII 2 a.h.

92-318 Clinical Fellowship in Periodontics XVIII 2 a.h.

92-319 Clinical Fellowship in Periodontics XIX 2 a.h.

92-320 Clinical Fellowship in Periodontics XX 2 a.h.

92-321 Clinical Fellowship in Periodontics XXI 2 a.h.

92-322 Clinical Fellowship in Periodontics XXII 2 a.h.

92-323 Clinical Fellowship in Periodontics XXIII 2 a.h.

92-324 Clinical Fellowship in Periodontics XXIV 2 a.h.

92-325 Clinical Fellowship in Periodontics XXV 2 a.h.

92-326 Clinical Fellowship in Periodontics XXVI 2 a.h.

92-327 Clinical Fellowship in Periodontics XXVII 2 a.h.

92-328 Clinical Fellowship in Periodontics XXVIII 2 a.h.

92-329 Clinical Fellowship in Periodontics XXIX 2 a.h.

92-330 Clinical Fellowship in Periodontics XXX 2 a.h.

92-331 Clinical Fellowship in Periodontics XXXI 2 a.h.

92-332 Clinical Fellowship in Periodontics XXXII 2 a.h.

92-333 Clinical Fellowship in Periodontics XXXIII 2 a.h.

92-334 Clinical Fellowship in Periodontics XXXIV 2 a.h.

92-335 Clinical Fellowship in Periodontics XXXV 2 a.h.

92-336 Clinical Fellowship in Periodontics XXXVI 2 a.h.

92-337 Clinical Fellowship in Periodontics XXXVII 2 a.h.

92-338 Clinical Fellowship in Periodontics XXXVIII 2 a.h.

92-339 Clinical Fellowship in Periodontics XXXIX 2 a.h.

92-340 Clinical Fellowship in Periodontics XXXX 2 a.h.

92-341 Clinical Fellowship in Periodontics XXXXI 2 a.h.

92-342 Clinical Fellowship in Periodontics XXXXII 2 a.h.

92-343 Clinical Fellowship in Periodontics XXXXIII 2 a.h.

92-344 Clinical Fellowship in Periodontics XXXXIV 2 a.h.

92-345 Clinical Fellowship in Periodontics XXXXV 2 a.h.

92-346 Clinical Fellowship in Periodontics XXXXVI 2 a.h.

92-347 Clinical Fellowship in Periodontics XXXXVII 2 a.h.

92-348 Clinical Fellowship in Periodontics XXXXVIII 2 a.h.

92-349 Clinical Fellowship in Periodontics XXXXIX 2 a.h.

92-350 Clinical Fellowship in Periodontics XXXX 2 a.h.

92-351 Clinical Fellowship in Periodontics XXXXI 2 a.h.

92-352 Clinical Fellowship in Periodontics XXXXII 2 a.h.

92-353 Clinical Fellowship in Periodontics XXXXIII 2 a.h.

92-354 Clinical Fellowship in Periodontics XXXXIV 2 a.h.

92-355 Clinical Fellowship in Periodontics XXXXV 2 a.h.

92-356 Clinical Fellowship in Periodontics XXXXVI 2 a.h.

92-357 Clinical Fellowship in Periodontics XXXXVII 2 a.h.

92-358 Clinical Fellowship in Periodontics XXXXVIII 2 a.h.

92-359 Clinical Fellowship in Periodontics XXXXIX 2 a.h.

92-360 Clinical Fellowship in Periodontics XXXX 2 a.h.

92-361 Clinical Fellowship in Periodontics XXXXI 2 a.h.

92-362 Clinical Fellowship in Periodontics XXXXII 2 a.h.

92-363 Clinical Fellowship in Periodontics XXXXIII 2 a.h.

92-364 Clinical Fellowship in Periodontics XXXXIV 2 a.h.

92-365 Clinical Fellowship in Periodontics XXXXV 2 a.h.

92-366 Clinical Fellowship in Periodontics XXXXVI 2 a.h.

92-367 Clinical Fellowship in Periodontics XXXXVII 2 a.h.

92-368 Clinical Fellowship in Periodontics XXXXVIII 2 a.h.

92-369 Clinical Fellowship in Periodontics XXXXIX 2 a.h.

92-370 Clinical Fellowship in Periodontics XXX 2 a.h.
Admissions
Minimum requirements for admission to both programs correspond to the minimum requirements for admission to the Graduate College. In addition, applicants must hold a B.S. or B.D.S. or its foreign equivalent. An interview may be requested. Both programs last a minimum of 24 months and usually begin July 1. Application deadline is November 1.

Courses
Predoctoral:
84.102 Principles of Occlusion 3.0 h.
Corrective orthopedics, maxillomandibular approach.
84.103 Removable Prosthodontic Technique Seminar 3.0 h.
Technical procedures for construction of complete and partial removable prostheses.
84.114 Removable Prosthodontic Technique Laboratory 3.0 h.
Laboratory exercises.
84.115 Fixed Prosthodontic Technique Laboratory 3.0 h.
Fabrication, finishing, rehabilitation for single- and full-arch, pontic fixed prostheses.
84.116 Fixed Prosthodontic Theory Laboratory 3.0 h.
Technical procedures for fabrication of fixed prostheses.
84.116 Renovative Prosthodontic Clinic 8.0 h.
Openness required for technical supervision, fabrication.
84.160 Removable Prosthodontic Seminar 1.0 h.
Knowledge of biological, basic sciences, and techniques applied to clinical removable prosthodontic procedures.
84.178 Fixed Prosthodontic Seminar 1.0 h.
Knowledge of biological, basic sciences, and techniques applied to clinical fixed prosthodontic procedures.
84.175 Fixed Prosthodontic Seminar 1.0 h.
Knowledge of biological, basic sciences, and techniques applied to clinical fixed prosthodontic procedures.

Graduate
84.220 Fixed Prosthodontics Seminar I 1.0 h.
Prosthetics; research literature.
84.221 Fixed Prosthodontics Seminar II 1.0 h.
Materials, aesthetics, mechanics; research literature.
84.222 Fixed Prosthodontics Seminar III 1.0 h.
Ceramics, ceramics, porcelain.
84.130 Occlusion Seminar 1.0 h.
Study of occlusion.
84.234 Ceramic Restorative Materials 1.0 h.
Ceramic materials science; characteristics and properties in clinical applications, porcelain, veneers. Same as 63.234.
84.235 Complete Denture Seminar I 1.0 h.
Principles, indications, construction; current research.
84.236 Complete Denture Seminar II 1.0 h.
Principles, construction, oral rehabilitation; current research.
84.237 Complete Denture Seminar III 1.0 h.
Prosthetics, construction, oral rehabilitation; current research.
84.238 Complete Denture Seminar IV 1.0 h.
Principles, construction, oral rehabilitation; post research.
84.239 Complete Denture Seminar V 1.0 h.
Principles, construction, oral rehabilitation; post research.

84.240 Removable Prosthodontics Seminar I 1.0 h.
Knowledge of biological, basic sciences, and techniques applied to clinical removable prosthodontic procedures.
84.241 Removable Prosthodontics Seminar II 1.0 h.
Knowledge of biological, basic sciences, and techniques applied to clinical removable prosthodontic procedures.
84.242 Removable Prosthodontics Seminar III 1.0 h.
Knowledge of biological, basic sciences, and techniques applied to clinical removable prosthodontic procedures.
84.243 Removable Prosthodontics Seminar IV 1.0 h.
Knowledge of biological, basic sciences, and techniques applied to clinical removable prosthodontic procedures.
84.244 Removable Prosthodontics Seminar V 1.0 h.
Knowledge of biological, basic sciences, and techniques applied to clinical removable prosthodontic procedures.

84.245 Advanced Clinical Removable Prosthodontics II 1.0 h.
Clinical, laboratory, and research.
84.246 Advanced Clinical Removable Prosthodontics III 1.0 h.
Clinical, laboratory, and research.
84.247 Advanced Clinical Removable Prosthodontics IV 1.0 h.
Clinical, laboratory, and research.
84.248 Advanced Clinical Removable Prosthodontics V 1.0 h.
Clinical, laboratory, and research.

84.250 Thesis Preparation: Prosthodontics 3.0 h.
Thesis preparation, defense.
84.251 Research in Removable Prosthodontics 3.0 h.
Materials research in the College of Dentistry, use of dental appliances.
84.252 Advanced Clinical Removable Prosthodontics I 1.0 h.
Clinical, laboratory, and research.
84.253 Advanced Clinical Removable Prosthodontics II 1.0 h.
Clinical, laboratory, and research.
84.254 Advanced Clinical Removable Prosthodontics III 1.0 h.
Clinical, laboratory, and research.
84.255 Advanced Clinical Removable Prosthodontics IV 1.0 h.
Clinical, laboratory, and research.
84.256 Advanced Clinical Removable Prosthodontics V 1.0 h.
Clinical, laboratory, and research.

84.257 Oral Health Administration 2.0 h.
Oral health programs, epidemiology, structural analysis.
The nation's first university-level professional degree 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 in the basic pattern that governs it today, was founded in 1913. The college has four divisions: Counseling Education; Curriculum and Instruction; Planning, Policy, and Leadership Studies; and Psychological and Quantitative Foundations.

Teacher Education Program
The College of Education at the University of Iowa offers three major baccalaureate degree teacher preparation programs. 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 certification 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 having an interest in this area, to those from other teacher education programs, and to those planning to pursue graduate degrees in special education. All students admitted to a teacher education program (TEP) must complete College of Liberal and Professional Education Requirements for the Bachelor of Arts, Bachelor of Science, or Bachelor of General Studies.

Undergraduate Admission to Teacher Education Programs
Undergraduate applicants to the University of Iowa who are interested in becoming teachers indicate that interest in the elementary major, health occupations major, or a specific secondary area and seek advanced program on their application or admission. This results in a "Pre-Liberal Major" (PLM) or a "Secondary Interest" (SI) notation on the student's official records. Eligible transfer students may automatically send TEP application materials from the Office of Admissions upon final admission to the University. All others must obtain application materials from the Office of Student Services in the College of Education.

Application Deadlines
The deadline for application to teacher education programs is November 1. Applicants who do not meet the deadline may submit applications by either November 1 or April 1 for consideration and may be accepted if qualified and if openings in the program occur.

General Requirements
Admission to teacher education programs is competitive. Admission requirements may vary by program area and are based on demand, faculty availability. In order to be considered for admission to a teacher education program, an undergraduate student must have:

- being admitted to The University of Iowa as a degree candidate;
- completed the American College Test (ACT) or the Scholastic Aptitude Test (SAT);
- attained sophomore standing (completed 50 semester hours) prior to the semester during which enrollment is made in the teacher education sequence of courses;
- achieved a 2.50 grade-point average on all college course work as well as course work completed at The University of Iowa; and
- applied for admission to a teacher education program.

Honors in Education
The College of Education Honors Opportunities Program is open to juniors and seniors who have attained a 3.50 grade-point average. Students with lower GPAs who have demonstrated their research potential may be considered by the Honors Program Committee. The Honors Opportunities Program consists of three components: 75-100 Honors Seminar in Education, a research mentorship, and a student development program focusing on career counseling and social activities. Successful completion of a research project results in an honors development on the diploma. The Honors Program is housed in and administered by the Center for National Center for Gifted Education.

Graduate or Postbaccalaureate 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 with their objective stated as "certification only" or in some secondary teaching areas with a Master of Arts in Teaching (M.A.T.) objective. Students selecting this route must satisfy the following conditions:

- admission to the Graduate College;
- completion of the Graduate Record Examination (GRE) General Test;
- a cumulative grade-point average of not less than 2.50 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).

- They may apply to the College of Liberal Arts as postbaccalaureate students with concentrated-study requirements. Students selecting this option should not apply to special majors. In this process, 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.

The deadline for graduate-level application to the teacher education program is June 1. Applicants who do not meet the deadline may submit applications by either October 1 or March 1; when qualified, they may be accepted if openings in the program occur.

Application deadlines for postbaccalaureate students with senior standing are the same as those for undergraduates.

Student Teaching
The first 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. Admissions to the senior year student teaching semester requires application. Applications must be submitted by February 15 of the academic year preceding the one during which student teaching will be completed. Students are required to complete the Office of Student Services in the College of Education, summer and urban student teaching experiences are available. 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 major requirements, which are set at the time of admission to the TEP and in some programs are higher than the college minimum grade-point average of 3.00.

Students should consult with their advisers regarding specific requirements for the program area.

Wawlers
Students who have completed 2 postbaccalaureate experiences or courses that they want to have considered in lieu of program requirements should consult with their advisers.

Urban Student Teaching
Students who want to advance their educational career through student teaching in an urban setting may apply through the Office of Student Field Experiences. Popular settings for urban student teaching include the Summer Urban Teaching Program (Cooperating Urban Teacher Education). This option is open to all education majors who meet the requirements for student teaching.
Overseas Student Teaching

Overseas student teaching experience is available in cooperation with the University of Wisconsin—River Falls. The overseas sites available include universities in England, Scotland, Wales, and Australia. 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 advisor and the appropriate program coordinator. Overseas assignments are for seven weeks. Secondary education students in some program areas are required to complete a full semester in a U.S. assignment before student teaching overseas. Elementary education students complete a two-week classroom management course followed by seven weeks in a U.S. assignment and seven weeks overseas during one semester.

State Requirements

All students seeking an Iowa teaching license must complete a course in human relations. This requirement can be met by completing 75,160 Human Relations for the Classroom Teacher.

Teacher Education Minors

Acceptance into a teacher education program is prerequisite to registration for most College of Education undergraduate courses. However, the College of Education does offer four minors for students interested in being better informed about education: general education, science education, human relations, and educational psychology. These minors can be completed while the student prepares to be better informed as parents, as teachers, or as change agents in the educational atmosphere of our world. There also may help support student future career objectives. Descriptions of the minors are available in the Office of Student Services.

Teacher Licensure/ Certification Services

The Iowa Board of Educational Examiners houses teacher, support service, and administration licensees 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 the 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 major 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 maximize internship 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 for 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.

Counselor Education—M.A., Ed.S., Ph.D.

Counseling and Human Development—M.A., Ed.S., Ph.D.

Rehabilitation Counseling—M.A., Ph.D.

Student Development in Education—M.A., Ed.S., Ph.D.

Multicultural Counseling—M.A., Ph.D.

Rehabilitation Psychology—Ph.D.

Marital and Family Therapy—Ph.D.

Curriculum and Instruction—M.A.T., M.A., M.S., Ed.S., Ph.D.

Art Education—Ph.D.

Behavior Disorders—M.A.

Curriculum and Supervision—M.A., Ph.D.

Developmental Disabilities—Ph.D.

Early Childhood Education—M.A.

Early Childhood Special Education—M.A.

Elementary Education—M.A., Ph.D.

Elementary Science Education—M.A.

English Education—M.A.T., M.A., Ph.D.

Foreign Language Education—M.A.T., M.A., Ph.D.

Learning Disabilities—M.A.

Mathematics Education—M.A., Ph.D.

Mental Retardation, Mild/Moderate—M.A.

Mental Retardation, Moderate/Severe/Profound—M.A.

Multicultural Education—Ph.D.

Science Education—M.S., M.A.T., Ed.S., Ph.D.

Social Studies Education—M.A., Ph.D.

Special Education—Ed.S., Ph.D.

Special Education Administration—Ed.S.

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.

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., Ed.S., Ph.D.

School Psychology—Ed.S., Ph.D.

Master of Arts in Teaching

The M.A.T. program is a 42-semester-hour (minimum) nonthesis program designed for the academically superior liberal arts graduates who completed four or no professional education courses in their undergraduate program. Requirements are listed under "Curriculum and Instruction" in this section of the Catalog.

The program leads to a master's degree and a secondary teacher in the fields of English, foreign languages, and science education. A grade-point average of at least 3.00 on undergraduate course work is required for admittance. At least 18 semester hours of graduate course work in the student's teaching field must be completed. A minimum of 20 semester hours of graduate work in education must be taken to satisfy licensure requirements.

Master of Arts

The College of Education offers a Master of Arts with or without thesis. The nonthesis M.A. program usually provides more specialized course work than does the thesis program. The nonthesis program is not necessarily a terminal program, but 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. program and are admitted to a Ph.D. program may be asked to submit evidence of writing and research skills to their advisor or during the early part of their doctoral program. Course credits earned more than ten years before the date of enrollment in graduate programs are not counted toward fulfillment of requirements for a graduate degree. Of the minimum 30 semester hours required for the degree, at least 24 must be earned at University of Iowa courses after formal admission to the program, and at least 6 must be completed on campus.

Master of Science

Thesis and nonthesis programs are available for students in science education. The degree requirements are similar to those for the Master of Arts.

Specialist in Education

This degree is granted upon completion of a prescribed two-year postbaccalaureate program designed for students preparing themselves professionally in such fields as teaching, administration, guidance, and other related services. Of the minimum 60 semester hours required for the degree, at least 24 must be in the area of specialization; the rest may be earned in cognate fields, supervised experience, research, and elective courses. The research must culminate in a written report. Other requirements and regulations for the S.I.S. are the same as for the master's degree, except that 15 semester hours of research work on campus are required in one 12-month period or in two summer sessions, and course work completed ten years prior to the final examination must be evaluated to determine the amount of credit.
of the University's Psychiatric Hospital. Children attending this school are residential patients in the unit. The program is supported by the Psychiatric Hospital. 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 provides a viable balance of direct services to developmentally disabled youngsters, interdisciplinary training activities for personnel, and research in program development and effectiveness.

**Financial Aid**

Students interested in employment opportunities in any of the support units and special resources listed above should contact the director of each faculty and indicate their interests, their academic and experience records, and their career or degree goals at The University of Iowa.

**Graduate Assistantships**

Individual academic programs provide opportunities for teaching, research, or service assistantships, as well as for fellowship and related employment opportunities. Inquiries should be addressed to the chair of the division or to the academic program. Assistantships for which student believes he or she can provide service or achieve an outstanding academic record. If the student has applied for admission, his or her student file is available for review by those responsible for selecting the assistantship for the student's program. Assistantship appointments are usually not made, however, made by the program area.

**Special Graduate Assistantships in Education**

The Iowa Testing Programs and the Iowa Measurement Research Foundation provide sufficient funds to support a limited number of special graduate assistantships in education. Students admitted to or pursuing any of the advanced degree programs offered by the College of Education are eligible to apply, provided they are committed to a professional career in the United States. The assistantships are for the academic year only and are renewable for a limited number of years. Holders are assigned to work under the direction of a faculty member in the research capacity and must be enrolled for at least 6 hours or 12 semester hours per session. All candidates must submit transcripts of all college work completed (undergraduate as well as graduate). Letters of recommendation, and scores on the Graduate Record Examination (GRE) are required. Applications must be filed on a special form available from the director of the Iowa Testing Programs. The application deadline is March 1.

**College of Education Student Loan and Scholarship Fund**

The college's student loan fund was established to assist College of Education students who are enrolled in credit classes or who teach courses while pursuing degree or licensure programs. The loan may be a senior or postgraduate student sitting teacher preparation or a graduate student seeking an advanced degree or license in the College of Education. If she or he must complete 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.

Three scholarships are available to students for the semester in which they teach their classes. The scholarships are based on need, grade-point average, and future plans for teaching. One is designated for a postgraduate student; the other ones are awarded to graduate or undergraduate. Applications are accepted each spring for students who will student each semester of the following year.

Information and application forms for loans or scholarships are available from the director of college development in the Educational Placement 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 Jack Bagley Elementary Education award, presented annually to an outstanding elementary school student who is a prospective reader. The student should be enrolled to do student teaching the following year.
- The John Ederlin Bell Marriage and Family Therapy Award, presented annually to an outstanding graduate student in marriage and family therapy entering the dissertation phase of the doctoral program.
- The Blumenst-Storer Fellowship, awarded annually to a doctoral student in the field of educational measurement and statistics. Non-U.S. citizens must be enrolled 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. This fellowship is expected to supplement the recipient's teaching or research fellowship each year until graduation, to a maximum of three years.
- The T. Aenee Cavia Psychological Research Scholarship, awarded to an outstanding doctoral student engaged in research on the psychological or quantitative foundations of education. It may be presented to one international student and one permanent resident of the United States each year.
- The John Leonard Davis Memorial Award, presented to an outstanding graduate student.

In addition, college-wide awards are granted in education whose specialization is adult and continuing education.

- The Harvey H. Davis Award, presented to an outstanding candidate for an advanced degree in higher education or educational administration, particularly a student interested in the financing of education.
- The Howard R. Jones Achievement Award, presented to 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 scholarly printed work.
- The Perry Eugene McCullough Award, presented to the outstanding candidate for an advanced degree in educational administration.
- The Leonard A. Miller Memorial Award, presented to an outstanding third-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 the most outstanding academic performance and promise of the highest level of achievement in research in this field.
- The R. Lambeth Tenza Award—Senior, M.A., and Ph.D. levels, presented to outstanding students of high scholarship who show promise in the professional areas of research, teaching, or writing and editing research profiles.
- The Betty Pency Scholarship Award, presented annually to outstanding students in writing who is expected to benefit the field in some direct way.
- The Mary Stone International Student Award, presented to an outstanding international student pursuing a Ph.D.
- The James and Cora Evans Fellowship for Doctoral Study in Educational Psychology, presented to a graduate student entering a dissertation program in the Department of Educational Leadership and Foundations who is entering the dissertation phase of study.
- The Janet R. Zuber Memorial, awarded to an outstanding student preparing to teach the physically handicapped, including the hearing impaired.

**Faculty**

All tenure-track faculty members with professional responsibilities have discussions in their teaching fields, and the majority have had teaching or administrative experience in the public schools. Several hold joint appointments in the College of Liberal Arts.

**Interdivisional Courses**

71200 Cooperative Education Internship

Students admitted to this program can enroll in the semester during which they seek cooperation. Student must complete a minimum of 6 semester hours of courses. Credit in cooperation may be earned in courses that are directly related to the student's major field and approved by the student's college. A signed cooperation certificate is required in the program's internship requirements.
Counselor Education • Education 287

7E/16 Aims Broaden in Education Counseling Educators a Focus for Counselors

7E/16 Aims Broaden in Education Counseling Educators a Focus for Counselors

COUNSELOR EDUCATION

Chair: Alan B. North
Professor: Michele Galilango, Richard Deutsh, Peter B. Stein
Associate professor: Merv W. Haggard, Brian A. Martin, Peter J. Stein
Associate professor: R. Bruce B. Springer, Brian A. Martin
Adjunct professor: Mike M. Schenker
Adjunct associate professor: Nancy B. Hulcheon, Gay Hebert, Cheryl Henshaw, Phillip Henshaw
Adjunct associate professor: Margaret A. Nielson, Gary Hebert
Graduate degrees: M.A., Ph.D., Ph.D.

The Division of Counselor Education prepares professionals and scholars primarily at the graduate level, through degree programs in student development, counseling, administration, counseling psychology, counseling and human development, substance abuse counseling, and mental health counseling. It also offers basic training in counseling and internship experiences for students in other professional and graduate programs. The graduate programs have a strong foundation in psychology.

Admission

Detailed information on admission and program requirements is presented in the brochure, "The Advanced Degree," available from the Division of Counselor Education. All applicants for the Master of Arts, Education Specialist, and Doctor of Philosophy are typically expected to meet the following admission requirements:

completed graduate application form;
copies of official transcripts of all previous college work—undergraduate and graduate;
offices of Graduate Record Examination (GRE) General Test scores—verbal and quantitative;
a statement of the candidate's reasons for seeking an advanced degree in counselor education, 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 progress for completing either the M.A., graduate program of the counselor education.

In addition to the above, the following requirements must be met for the individual program:

Master of Arts: A 2.75 minimum undergraduate grade-point average and a composite (verbal and quantitative) GRE General Test score of 1000 or higher.

Doctor of Philosophy: A 3.00 minimum undergraduate grade-point average and a 3.60 minimum graduate grade-point average if a graduate degree has been completed; 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 master's degree (including a master's in counselor education) must complete core master's-level coursework before taking doctoral-level advanced courses.

Master's-level courses and experiences to be completed are determined in consultation with the advisor and are included in a student's curriculum plan.

Foreign Students

Foreign students also must provide a Test of English as a Foreign Language (TOEFL) score to their applications. Typically, a score of 550 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 Examinations, Special Requirements

All the criteria listed above are considered minimum standards for admission. Final decisions on admissions are made by the faculty. Some programs may have specific admission requirements due to state certification standards. For example, a teaching license/certificate is required for students pursuing certification in school counseling. Any special admission requirements are listed with individual programs.

Conditional Admissions

Applicants who do not meet all the minimum requirements for regular admission consideration may still be admitted to a conditional basis if the faculty determines that there are sufficient and proven reasons for conditional status. The following are divisional conditions:

M.A. Level—Students must complete 12 semester hours of core courses approved by an advisor over two consecutive sessions and earn a 3.00 minimum cumulative grade-point average.

Ph.D. Level—Students must complete 12 semester hours of core courses approved by an advisor over two consecutive sessions and earn a 3.00 minimum cumulative grade-point average.

Maintaining Candidacy

All graduate students must meet the following standards in order to maintain their candidacy for degree:

maintain satisfactory grade-point average in their curriculum plan: M.A., 3.00; Ph.D., 3.25; 70.0, 3.00;

successfully complete practicum, internship, or equivalent professional experience;

maintain professional behavior consistent with the American Association for Counseling and Development code of ethics, and any additional code of professional ethics adhered to in any agency in which the student completes a practicum or internship, and demonstrate progress toward the degree through successful completion of hours specified in the curriculum plan; progress toward the degree requires active registration in each session; exceptions may be approved by the advisor.

The academic and professional progress of all students is reviewed annually.

Professional Status

M.A. students who earn a overall grade-point average lower than 3.00 and Ph.D. students who earn a grade-point average lower than 3.00 are put on professional status. Students on professional status have two consecutive sessions to raise their grade-point average. If that requirement is not met, the student may be removed from the program. Each student is allowed one professional status during his or her program of study.

Application Deadlines

Deadlines: M.A., see b.5, b.6, programs are June 1 for fall session, November 1 for spring semester, and April 1 for summer sessions. Applications seeking graduate assistantships are urged to complete their applications as soon as possible after January 1 so as to be considered for possible funding. The Ph.D. program deadline is January 1 for fall semester. Counseling counseling does not accept applications for the spring semester. Applications must be complete before they will be reviewed. Applicants are responsible for providing a complete application dossier. Application forms are available from the secretary of the Division of Counselor Education. Applicants can contact the College of Education Office of Student Services. Applicants are invited to write immediately after application has been reviewed. Applicants who are accepted must reply in writing in order to maintain their admission status.
Graduate Programs

Student Development in Postsecondary Education

Master of Arts

The M.A. program provides preparation for college positions in administration, student activities, financial aid, student unions, career planning and placement, residence halls, foreign student services, community college counseling, adult and continuing education, and external degree programs. With experience, it is a foundation for positions as institute dean and college teachers. The program is accredited by the Council of Accreditation of Counseling and Related 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.

Specialist in Education

The Ed.S. program provides specialized professional preparation in college student development for those who have at least a master's degree in counseling psychology or related field. The program is accredited by the American Psychological Association (APA).

Doctor of Philosophy

The Ph.D. program prepares professionals for leadership roles in refined education, research, administration, and service delivery systems. Students admitted to the program focus on areas of advanced developmental, educational, research, and professional practice in counseling psychology.

The program is flexible, permitting students to pursue interests in specific populations or settings or to concentrate on one of the basic areas of preparation.

Applicants who have recently graduated from an M.A. program in rehabilitation counseling and who have had at least one year of full-time work experience in rehabilitation counseling are not considered. Experience is highly desirable and enhances the application.

Ph.D. in Rehabilitation Psychology

The Ph.D. program is designed to meet the needs of students who are primarily interested in working as professionals in traditional and clinical settings and who may be interested in becoming licensed psychologists. It also prepares students for teaching, research, and service in academic, agency, and other institutional settings.

As with the Ph.D. program in rehabilitation counseling, the applicant for rehabilitation psychology will not be considered unless they have at least one year of full-time, paid work experience in the field of rehabilitation following the completion of their M.A. program.

Counseling and Human Development

Licenses/Certifications

Applicants with a master's degree in counseling or a related field, elementary or secondary school teaching license, and at least one year of successful teaching experience may apply for licensure in school counseling. Counseling and human development professionals with a master's degree and postsecondary teaching license/certification are eligible for applicants with master's degree and postsecondary teaching license/certification.

Master of Arts

The M.A. program, accredited by the Council on Accreditation of Counseling and Related Programs (CACREP), prepares graduates for counseling in school settings.

Specialist in Education

The Ed.S. program enables school counselors and counselor supervisors to increase their competencies beyond the master's level.

Doctor of Philosophy

The Ph.D. program, accredited by CACREP, provides preparation for teaching, leadership, and research positions in counseling and related fields.

Substance Abuse Counseling—M.A.

The M.A. program in substance abuse counseling prepares individuals to function in a wide variety of community counseling settings with special expertise in prevention, intervention, treatment, and administration of substance use disorder treatment.

Marital and Family Therapy—Ph.D.

This doctoral program is designed to prepare students with knowledge and advanced counseling skills, specifically in the area of marital and family therapy. Graduates are prepared to provide leadership in this field as researchers, teachers, supervisors, and clinicians.

Facilities

A wide variety of counselor education programs and experiences is available in neighboring community agencies, schools, and colleges, as well as throughout the University.

Financial Aid

Depending on federal funding, graduate training fellowships may be available for students entering rehabilitation counseling. Many other graduate students in the Division of Counseling Education hold a wide variety of graduate assistantships. For example, many of the University's student services units award part-time assistantships to graduate students in the division. Applicants for assistantships should contact the coordinator of the particular counseling education graduate program they plan to enter.

Courses

TC 611 Making a Vocational Educational Choice

1.5 hr.
Vocational decision-making process, self-assessment, explanation of the world of work, for students who are uncertain about their educational and vocational directions.

TC 112 Human Sexuality

1.5 hr.
Physical and psychological aspects of human sexuality. Same as PSY 321. Fall, Spring.

TC 115 Gifted Young Children

1 hr.
Identification and classification of intellectual giftedness. Limitation of group for educational counseling. General characteristics and special educational needs of the gifted. Same as PSY 415. Fall, Spring.

TC 119 Family Issues in Counseling

1 hr.
How to develop effective communication with family members; interview techniques; working with families, current issues in various therapeutic situations. Same as PSY 419.

TC 120 Psychology of Children

3 hrs.
Theories of training, child development, motivation, issues unique to a given population, current issues in psychology. Same as PSY 420.

TC 131 Assessment of Children and Academic Talent

3 hrs.
Instruments of standardized tests and other measurement instruments used to identify academic talent and program students for academic enrichment. Some laboratory work. Same as PSY 431.
proposed to ensure that the student is qualified for placement in the profession. Verification that the student meets the grade-point standards established by their program begins in the first term of admission to the TES occurs at the time of application for student teaching. Students should contact their education advisor or the Division of Curriculum and Instruction office for more information about the admission process and requirements for student teaching in their license program.

Elementary Education

FOUNDER'S COURSES
These three courses must be completed before any methods courses are begun.

**7E:01 Pre-Professional Practices, Elementary Education**
2 s.h.

**7E:100 Introduction: Elementary and Early Childhood Teaching**
3 s.h.

**7E:152 Educational Psychology and Measurement**
3 s.h.

These two courses should be completed before methods are begun, but may be completed during the first semester of methods courses.

**7W:91 Auditory/Auditory Equipment for Instruction**
1 s.h.

**7W:92 Introduction to Microcomputing for Teachers**
1 s.h.

Total: 10 s.h.

METHODS COURSES
Two methods courses taken concurrently:

**7E:123 Literature for Children I**
2 s.h.

**7E:160 Methods: Elementary School Language Arts**
3 s.h.

**7E:164 Methods: Elementary School Mathematics**
3 s.h.

Four courses taken concurrently:

**7E:161 Methods: Elementary School Social Studies**
2 s.h.

**7E:162 Methods: Elementary School Science**
2 s.h.

**7E:163 Methods: Elementary School Mathematics**
2 s.h.

**7E:164 Mathematics/Sciences Practicum**
1 s.h.

**7E:120 Methods and Materials: Music for the Classroom Teacher**
2 s.h.

**7E:122 Methods and Materials: Art for the Classroom Teacher**
2 s.h.

**7E:127 Methods and Materials: Physical Education for the Elementary Teacher**
2 s.h.

or:

**7E:126 Methods and Materials: Health Education for the Elementary Teacher**
2 s.h.

**7E:190 Human Relations for the Classroom Teacher**
3 s.h.

Total: 19 s.h.

AREA OF SPECIALIZATION
A minimum of 24 semester hours must be completed in one of the following areas of specialization: Art, Early Childhood, English Language Arts, English as a Second Language (ESL), Foreign Languages, General Education, Mathematics, Music, Physical Education, Reading, Science, Social Science, Special Education, Speech Communication/Entertainment. Copies of the requirements for each area of specialization are available in the Division of Curriculum and Instruction office. Courses in the area of specialization may be taken pass/fail if they are offered with the pass/fail option. Courses in some areas of specialization are sequenced in a definite pattern leading up to student teaching; others have no required sequence and may be completed before or after student teaching.

STUDENT TEACHING

**7E:170 Classroom Management**
2 s.h.

**7E:190 Supervised Teaching in the Elementary School: Interactive Phase**
6-7 s.h.

**7E:191 Supervised Teaching in the Elementary School: Pre- and Post-Active Phase**
5.7 s.h.

**7E:192 Special Area Student Teaching**
0.3 s.h.

Total: 16 s.h.

Transfer students must complete at least eight semester hours of course work, including two courses numbered 7E:160-7E:164 or 7E:123 at The University of Iowa prior to student teaching. A minimum of 14 semester hours of student teaching is required.

The liberal arts and elementary requirements must approximately equal the course requirement. Students who meet or beat out of the theatre, foreign language, mathematics, and other liberal arts General Education Requirements may be able to adjust their program requirements to as few as 11.6 semester hours.

ADDITIONAL ENDORSEMENTS TO LICENSURE

The undergraduate elementary education program is designed specifically to prepare students to teach kindergarten through sixth grade. As an addition to the 24-hour endorsement, students may complete requirements for the less endorsement/ kindergarten endorsement or an area (subject area endorsement see "Area of Specialization" above). For example, students seeking the technology endorsement/kindergarten endorsement must complete the elementary major, the 4th specialty childhood specialization, and the following additional courses:

**7E:120 Methods and Materials: Music for the Classroom Teacher**
2 s.h.

**7E:122 Methods and Materials: Art for the Classroom Teacher**
2 s.h.

**7E:134 Parent Teacher Communication**
3 s.h.

**7E:150 Study and Writing of Early Childhood Education**
3 s.h.

**7E:164 Developmental and Management of Child Care Centers**
3 s.h.

**7E:197-198 Supervised Teaching: Pre- and Post-Active Phase**
7, 14 s.h.

*Either 7E:120 or 7E:122 may be taken as part of the elementary major.

Students seeking teacher education or endorsements in other areas must assume the responsibility of determining what area requirements have to be met. Addresses for other state licensure/certification offices are available at the College of Education's Office of Student Services.

Secondary Education

Undergraduate students seeking secondary school licensure/certification are degree candidates in the College of Liberal Arts and must complete the requirements for the Bachelor of Arts, Bachelor of Science, Bachelor of Music, or Bachelor of General Studies described in the College of Liberal Arts section of the catalog.

Grantees must be admitted to a program leading to teacher licensure/certification as "licensure only" candidates in the Graduate College. They are subject to all policies, rules, and regulations of that college.

Eligible graduate students also may complete teacher licensure/certification by pursuing the M.A.T. in English education, foreign language education, or science education.

Licensure/certification requires a minimum of at least 30 semester hours of course work to be in a related major. Students may be admitted into the College of Liberal Arts at the time of application for student teaching. In the fall or spring term, students must complete the 8-hour course 7E:115 or take 12 hours of course work in the College of Liberal Arts to be admitted.

Secondary school teacher preparation programs are provided in the following areas:

Art

- "Art" General Education studies (speech communication/theatre arts)

- English

- Foreign languages

- French, German, Chinese, Japanese

- Health education

- Journalism

- Mathematics

- Music

- Physical education

- "Reading"

Science, including general science, physics, biology, social sciences, chemistry, psychology, and sociology

- Economics

- Geography

- History

- Political science

- Psychology

- Sociology

Available as an additional area of endorsement. A major in another subject may be required for licensure.

An area secondary teaching sequence qualifies holders to teach in grades 7-12. Students planning to teach art, music, or physical education typically complete a program that
preparing them for both elementary and
second-level education.
Secondary teacher preparation programs in
several other subject areas also offer a program
that leads to a license/certificate as a subject
master specialist in grades K-6. This K-6
license/certificate is available only in the
same subject areas as the secondary certification.
Mathematics and science education require
completion of the elementary specialist
licensure/certification. Completion of the
elementary specialist licensure/certification is highly
recommended for foreign language
education.
Candidates are encouraged to obtain more
information and the name of an advisor 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 course from 79-075:99
  Introduction to Teaching (specific
  subject area, except science
  education)
  2.5 s.h.
- 79-100: Intro to Education
  3.5 s.h.
- 79-75: Educational Psychology and
  Measurement
  3.5 s.h.
- 79-100: Human Statistics for the
  Classroom Teacher
  3.5 s.h.
- All graduate methods of teaching
courses in the major field
  3.5 s.h.
- Competence in computer
  education (CBE)
  0.0 s.h.
  (must be included as part of
  Teacher Certification Program
  course or module in the subject area)
- Student teaching
  12.0 s.h.

With an advisor's approval, a graduate student
may elect as graduate courses in lieu of
Students must complete the methods courses in
their teaching fields before student teaching.
For all subject areas, student teaching must be
done all day for a full semester. Students in
secondary education may do their student
teaching in the Center for Urban Teacher
Education (CUTE), through the Regents' 
Exchange Program, or in the customary
contractual area established by the College of
Education. An exception to student teaching in
the customary contractual area will be considered
only if the proposed student teaching site provides
the student with a specific program
opportunity not available in the customary
contractual area for student teaching described above.

Additional information about alternatives for
student teaching and application procedures is
available from the Office of Student Services.
Applications for student teaching must be filed
in the Office of Student Services by February 15
prior to the academic year during which the
student teaching will be done.

Special Education
Students may be admitted to the Graduate
College for the purpose of obtaining one or
more teaching license/certificates in special
education. For course requirements, see specific
programs listed for the Master of Arts under
"Special Education" in this section of the
Catalog. Also see admission requirements under
"Special Education."

Financial Aid

Early Childhood, 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 the programs, and some involve
teaching sections of undergraduate methods
courses and supervising teaching students. 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, Special Education
A limited number of assistantships are available for graduate students pursuing
advanced programs in special education. 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 supervising undergraduate courses or supervising practical
experiences, and others are jobs in private or public schools.

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, either in early childhood
child-care centers, early childhood
preschool programs, or classroom college
institutions. It is offered in thesis and nonthesis options.

Requirements
Students must meet the general admission
requirements of the Graduate College and have
a 2.50 undergraduate grade-point average.
Students must hold a valid prekindergarten/
kindergarten or elementary endorsement or
equivalent. Non-native students must have a TOEFL score of at least 550 to be eligible for admittance; those with scores of 550 to 600 are admitted conditionally and must complete an English
examination before registering for courses. Course
work recommended for English proficiency
examinations must be completed before conditional
status can be changed. English proficiency
course credit may not be applied toward the
master's degree.

FOUNDERSONS COURSES
78-100 History and Philosophy of
Early Childhood Education
3.0 s.h.
79-114 Development
3.0 s.h.
79-246 Building Foundations for
Child Care or early childhood
educators
3.0 s.h.
79-247 Curriculum Development in
Early Childhood (6-9 Years)
3.0 s.h.
79-248 Curriculum Development in
Early Childhood (6-9 Years)
3.0 s.h.
Total
15.0 s.h.

RELATED COURSES
One of these (or an approved substitute):
79-250 Advanced Child Development
3.0 s.h.
31-114 Cognitive Development of
Children
3.0 s.h.
One of these:
78-114 Parent-Child Relationships
3.0 s.h.
79-140 Parent-Child Communication
3.0 s.h.
79-353 Consultation Theory and
Practice
3.0 s.h.
Total
5.0 s.h.

Areal of Specialization
Curriculum
Students must complete at least 11 semester
hours of credit in courses chosen from one or

Education • Curriculum and Instruction
two content areas such as reading and/or language arts, mathematics, science, social studies, music, art, children's literature.

Human Relationships
Four of these:
7E:130 Exceptional Persons 3 s.h.
7E:144 Parent-Child Relationships 3 s.h.
7E:314 Parent-Teacher Communication 3 s.h.
7E:280 Supervision of Instruction and Staff Development 3 s.h.
7E:263 Consultation Theory and Practice 3 s.h.
Total 10-12 s.h.

Community College Teaching
All of the following must be completed for the kindergarten-Secondary Certification for Arts and Sciences.
7E:112 Teaching of Adults 3 s.h.
7E:171 The Community College 2-5 s.h.
7E:175 Perez-High School Staff Development Workshop 0-2 s.h.
7E:192 Curriculum Development in Community College and Health Careers 3 s.h.
7E:270 Intern Seminar 1-3 s.h.
7E:370 College Teaching Internship arr.
7E:110 Introduction to Educational Measurement 3-4 s.h.

Counseling
7C:148 Introduction to Marriage and Family Counseling and Psychotherapy 3 s.h.
7C:178 Marriage Counseling 1-3 s.h.
7C:190 Group Process for Related Professions 3 s.h.
7C:222 Interventions for Primary Prevention in the Schools 3 s.h.
7E:263 Consultation Theory and Practice 2-3 s.h.
Total 12-15 s.h.

Social Work
42150 Organization and Community Practice 3 s.h.
42150 Family Violence 3 s.h.
42250 Family Law 3 s.h.
42350 Social Policy and Interdisciplinary Systems, Domestic and International 3-4 s.h.
Total 12 s.h.

Thesis/Research
7P:143 Introduction to Statistical Methods 3 s.h.
7P:150 Introductory to Educational Measurement 4 s.h.
7P:390 Field Service Project 3 s.h.
7E:350 M.A. Thesis in Early Childhood and Elementary Education 2 s.h.
Total 9-10 s.h.

COMPREHENSIVE EXAMINATION
All students take one written examination in general 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.

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. Graduates 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 semester hours must be taken in University of Iowa courses, with 8 semester hours completed on campus. Course work does not extend to the two years before admission does not count toward the above requirements.

Foundations and Educational Psychology
Two of these (4-7 s.h.):
7P:100 History of American Education 2 s.h.
7P:117 Philosophies of Education 2, 3, 5 s.h.
7P:130 Educational Sociology 2-5 s.h.
7P:131 Educational Psychology 3 s.h.
7P:143 Introduction to Statistics: Methods 3 s.h.
7P:150 Introduction to Educational Measurement 3-4 s.h.
7P:150 Introduction to Theory of Learning 3 s.h.
7P:120 Introduction to Instructional Design and Technology 3 s.h.
Research and Curriculum
Both of these (7 s.h.):
7P:200 Design and Organization of Curriculum 3 s.h.
7E:354 Seminar: Current Issues and Research in Elementary Education 4 s.h.

Instructional Improvement
Three of these (6-8 s.h.):
7E:204 Literature for Children II 3 s.h.
7E:200 Supervision of Elementary School Language Arts 3 s.h.
7E:204 Supervision of Elementary School Social Studies 3 s.h.
7E:250 Advanced Techniques of Teaching Science in the Elementary School 3 s.h.
7E:263 Supervision of Elementary School Mathematics 2 s.h.
7E:264 Building Foundations for Reading: Preprimary and Primary 3 s.h.
7E:265 Supervision of Intermediate Credit Subjects 3 s.h.
7E:267 Curriculum Development in Early Childhood (5-8 Year) 3 s.h.
7E:268 Curriculum Development in Early Childhood (5-9 Year) 3 s.h.
7E:260 Supervision of Instruction and Staff Development 2 s.h.

Area of Specialization
At least 15 semester hours of credit in courses chosen with consent of the advisor; may include appropriate courses listed above.

Electives
From 0-5 semester hours of credit in courses chosen with consent of the advisor.

Thesis
7E:350 M.A. Thesis in Early Childhood and Elementary Education 3-5 s.h.

COMPREHENSIVE EXAMINATIONS
The comprehensive examination consists of two 3-hour examinations. One 3-hour section is based on the general field of elementary education; the second section on the candidate's area of specialization.

M.A. in Developmental Reading
This degree program prepares graduate students for positions as reading specialists in kindergartens and grades 1-12. The course work required develops the skills, knowledge, and competencies needed for supervisory, curricular, and remedial teaching positions in reading. The program also builds a background in reading for students who want to specialize further in this area and eventually to teach and/or conduct research in a college or university.

Successful completion of this program, combined with one year of successful teaching experience that includes the teaching of reading as a significant part of the responsibility, qualifies the students for certification as a reading specialist.

ADMISSION
Students must meet the general requirements of the Graduate College, have a 3.00 undergraduate grade-point average, hold an early childhood, elementary, or secondary school teaching certificate, and show evidence of completing two years of a successful teaching experience.

REQUIREMENTS
A minimum of 33 semester hours with thesis, or without thesis, is required. The following courses are required of all candidates.
7P:170 Introduction to the Psychology of Reading 3 s.h.
7E:264 Building Foundations for Reading: Preprimary and Primary 3 s.h.
78:245 Supervision of Intermediate Credit Reading 3 s.h.
78:271 Advanced Reading Clinic Techniques 2-5 s.h.
78:272 Advanced Reading Clinic Practicum 2-3 s.h.
One of these:
75:194 Methods: High School Reading 3 s.h.
75:195 Developing Reading Skills in the Secondary School 2-3 s.h.
One of these:
77:159 Introduction to Educational Measurement 3 s.h.
77:166 Diagnostic and Prescriptive Approaches to Reading Instruction 1-4 s.h.
One of these:
76:264 Seminar: Secondary Reading 3 s.h.
76:308 Seminar: Research and Current Issues (Reading) 3 s.h.
One of these:
77:106 Child Development 3 s.h.
77:131 Educational Psychology 3 s.h.
77:133 The Adolescent and Young Adult 3 s.h.
One of these:
75:180 Curriculum Foundations 2-3 s.h.
75:201 Secondary School Curriculum 2-3 s.h.
76:300 Design and Organization of Curriculum 3 s.h.
76:304 Language Instruction in the Secondary School 3 s.h.
One of these:
76:260 Supervision of Instruction and Staff Development 2-3 s.h.
76:345 Reading Clinic: Supervision art.
76:347 Supervision and Evaluation 3 s.h.
Thesis (if required), one of these:
75:590 Master's in Early Childhood and Elementary Education
75:793 Master's Degree Thesis
Students, in consultation with their advisor, may select the remaining hours as electives from areas such as curriculum, supervision, language arts, testing and evaluation, linguistics, or speech pathology.
Students take six hours of comprehensive examinations. Each examination is based on reading courses. The other is based on course work in supporting areas. With the agreement of the advisor and the student's committee, a comprehensive project may be substituted for the written examinations in the supporting areas.

M.S. in Elementary School Education
The Master of Science program in elementary science prepares master's degree candidates to serve as team or department science specialists. The program may be taken with their (30-semester-hour minimum) or without (30-semester-hour minimum).

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 elementary education.

REQUIREMENTS
The following courses are required of all candidates:
76:255 Science Education: Issues, History, and Rationale 3 s.h.
76:256 Science Education: The Nature of Science 3 s.h.
76:257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
76:283 Advanced Techniques of Teaching Science in the Elementary School 3 s.h.

Science courses (18 semester hours) are selected by the candidate in consultation with the advisor. A series of application courses (97:103 Societal and Educational Applications of Earth and Environmental Sciences, 97:103 Societal and Educational Applications of Life Sciences, and 97:105 Societal and Educational Applications of Physical Sciences) are integral components of the science courses. Candidates who have not taken comparable courses are expected to take two application courses. At least one corresponding science discipline course as a pre-requisite is to be taken with the application courses. These courses, along with the electives (to 6 semester hours), are determined in consultation with the advisor. All candidates for the Master of Science must satisfy the requirements for a basic science endorsement as outlined in the October 1986 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 education agencies.

ADMISSION
Candidates for admission to the program should have a combined score of at least 1600 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 60 semester hours of course work, including credit earned for the dissertation. Each student prepares an individual plan of study in consultation with the advisor. The final plan must be approved by the advisor and the college dean.

The doctoral program should include a strong background of elementary education course work. Each program should 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 be either an area outside of elementary education (e.g., English, library science, elementary administration, or child development) or must attend the preparation of the candidate beyond the elementary age level (e.g., the teaching of writing, reading, K-12 or bilingual). All doctoral candidates must demonstrate competence in using appropriate research tools, approved by the advisor. The comprehensive examination consists of three 3-hour exams: elementary education and one to each of the areas of concentration.

Secondary Education
The Division of Curriculum and Instruction offers training in the administration and department work of 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, physical 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 places the program's focus on preparing teachers who are themselves creative artists to become highly literate in the history and language of art.

ADMISSION
Applicants must have completed the equivalent of the minimum course work in art required for the B.A. or B.F.A.-degree in art from The University of Iowa, and a one-year course in teaching art. Applications must be accompanied by a representative portfolio of the candidate's work, consisting of eight to ten reproductions of artwork and one example of written work. The portfolio should be a paper previously written for a course or it may be an original paper. Documentation of undergraduate art or courses recommended for teacher license/ certification may also be helpful. In addition, UNESCO agreement to study in elementary education, students may choose required course work concurrent with work for the degree. Candidates must complete 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 in studio art or 12 semester hours of art history and 6 semester hours of studio art
Art education semantics (9 s.h.): the course 75:067.
Current Issues in Art Education
Twelve semester hours are to be specified after the student begins the program.
Ph.D. in Art Education

The doctoral degree program is administered by the College of Education with the cooperation of the School of Art and Art History. Students make application for admission to the College of Education total. The program prepares college teachers and researchers in art education and supervision of art in elementary, secondary education and school systems. It also provides students with an opportunity to continue creative 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 university or college or university. Application to the program must be accompanied by a representative portfolio of the candidate’s work, containing at least 40 slides or reproductions of art and two examples of written work. The written work must consist of papers previously written for a course or original paper. These should be submitted for the Art Education office.

In the case of some work deficiencies, students must respond promptly by completion of not less than 15 semester hours in art education seminars, 15 semester hours in a related area, e.g., aesthetics, anthropology, higher education, etc., and 15 semester hours in theses and seminars. The 300-level 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. The examination must be completed within 14 days. An oral examination on the program 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, at least 12 semester hours of credits. The advisor is expected to prepare a dissertation proposal and defend it before the dissertation committee. Any oral examinations on the dissertation in 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 2.75 grade point average. Candidates without prior academic background in speech communication must seek additional courses beyond the minimum requirements. Application should be made to the Department of Communication Studies.

REQUIREMENTS

A minimum of 30 semester hours of approved graduate courses, at least 24 of these in 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
- 100 introductory to research
- Three 200- or 300-level courses in communication studies

Other courses recommended by the adviser and/or committee

Successful completion of a paper or project involving substantive 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.

A comprehensive examination consists 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 (0-42 s.h.):
  - 75:180 Curriculum Foundations 2.3 s.h.
  - 75:281 Junior High School and Middle School Curriculum 3 s.h.
  - 75:291 Secondary School Curriculum 3 s.h.
  - 75:300 Design and Organization of Curriculum 3 s.h.

- Research tool selected in consultation with the adviser, typically PP 143 Introduction to Statistical Methods 3 s.h.

- Core, in a subject field such as English 4.6 s.h.

- Electives—selected in consultation with adviser 4.6 s.h.

- Thesis for student-electing a thesis program 30:32

- Three 1-hour comprehensive examinations, one in curriculum and one in a minor field in education or in a cognate field or in three 2-hour examinations.

M.A. 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 (0-42 s.h.):
  - 75:180 Curriculum Foundations 2.3 s.h.
  - 75:281 Junior High School and Middle School Curriculum 3 s.h.
  - 75:291 Secondary School Curriculum 3 s.h.
  - 75:300 Design and Organization of Curriculum 3 s.h.

- Core, in a subject field such as English 3 s.h.

- At least one advanced survey course in secondary or elementary school teaching fields 6 s.h.

- 75:157 Educational Measurement and Evaluation 3 s.h.

- or

- 75:255 Construction and the Use of Evaluative Instruments and the 150 introduction to Educational Measurement 3 s.h.

- 75:245 Individual Instruction in Secondary Education (Practicum) 2.3 s.h.

- A minimum of two research tools, typically statistics, research design, or foreign language 9-11 s.h.

- Electives, to be chosen in consultation with adviser 6.8 s.h.

- Recommended electives include: 2.3 s.h.

- 75:177 Philosophies of Education 2 s.h.
REQUIREMENTS
Students must complete a minimum of 40 semester hours. This includes at least 18 semester hours of graduate courses offered by the Department of English, planned with the advisor to supplement the undergraduate major; and the following professional education courses.

- 78:131 Educational Psychology 3 s.h.
- 78:157 History of Western Education 3 s.h.
- 78:117 Philosophies of Education 3 s.h.

- 78:100 Individual Projects in Laboratory Practice 1-3 s.h.
- 78:160 Human Relations for the Classroom Teacher 3 s.h.
- 78:194 Methods: High School Reading 3 s.h.
- 78:195 Developing Reading Skills in the Secondary School 3 s.h.
- Basic competency in microcomputing
- 78:115 Methods: English 3 s.h.
- 78:187 Seminar: Curriculum and Student Teaching 2 s.h.
- 78:191 Observation and Laboratory Practice in the Secondary School 12 s.h.

A two-semester comprehensive examination is required. One part covers methods, materials, and curriculum for high school English; the second part covers one half of the comprehensive examination administered to Master of Arts (Literary Studies) candidates in the Department of English.

Ph.D. in English Education
This program is administered by the College of Education. It prepares teacher educators and scholars in English education, with specialization in a range of areas related to literacy and literacy education. These include the teaching of reading, writing, language, and literature.

ADMISSION
Students must meet the basic requirements of the Graduate College for admission to the doctoral program and must provide a written personal statement explaining their reasons for applying to the program. Successful applicants will most likely have a 3.00 grade-point average, score at least at the 50th percentile on the verbal portion of the Graduate Record Examination (GRE) General Test, and have at least two years of teaching experience, preferably at the secondary level. Students must maintain a 3.00 grade-point average while enrolled in the program. Candidacy is renewable annually.

REQUIREMENTS
A minimum of 72 semester hours is required. This includes 9-10 semester hours in the area of specialization—teaching of English—plus one of the following courses:

- 78:200 Supervision of Elementary School Language Arts (Language Arts) 3 s.h.

MA.T. in Foreign Language Education
The MA.T. program in foreign language education is designed for superior liberal arts graduates who have had few or no professional education courses. Successful completion of the program leads to secondary school teacher licensure.

ADMISSION
A bachelor’s degree with a major in a foreign language and a 3.00 undergraduate grade-point average are required.

REQUIREMENTS
Students must complete at least 18 semester hours of graduate courses in a foreign language department or an approved professional education program.

- 78:102 Introduction to Teaching Foreign Language (credit not applicable to M.A.T. degree) 3 s.h.
- 78:107 History of Western Education or 78:117 Philosophies of Education 3 s.h.

- 78:133 Topics in Foreign Language Instructional Technology 2 s.h.
- 78:116 Methods: Foreign Language 3 s.h.
- 78:187 Seminar: Curriculum and Student Teaching 1 s.h.
- 78:191 Observation and Laboratory Practice in the Secondary School 12 s.h.

- 78:180 Human Relations for the Classroom Teacher 3 s.h.

A comprehensive examination covering the candidate’s knowledge of and proficiency in the language, literature, or cultural analysis, and foreign language education.
N.I.A. in Mathematics Education

The program provides students with advanced specialization in mathematics and education in a better foundation for teaching at the secondary level.

ADVANCE

Candidates must meet the admission requirements of the Graduate College and, except in unusual situations, must be graduates of a four-year college program in mathematics. They must also be approved by the Graduate College of the University.

REQUIREMENTS

A minimum of 10 semester hours of course work in mathematics approved by the student's advisor.

- A minimum of four courses in mathematics education, which must include 75:235 Current Issues in Mathematics Education (3 s.h.), which is the remaining three courses to be selected from the following:
  - 75:220 Workshop in Secondary School Mathematics (1 s.h.)
  - 75:231 Technology in the Teaching of Secondary School Mathematics (3 s.h.)
  - 75:232 The Teaching of Geometry (2 s.h.)
  - 75:237 Teaching the Law and the Citizen in Mathematics (2 s.h.)
  - 75:312 Teaching of Algebra (2 s.h.)
  - 75:315 Seminar: Mathematics Education (2 s.h.)

- A minimum of two courses from a cognate area in education; suggested areas are educational psychology, educational statistics and measurement, elementary mathematics education, history or philosophy of education, instructional design and technology, computer science education, secondary school administration, and special education.

- One semester hour in mathematics and education selected with the approval of the advisor to complete the 32 semester hours of credit.

Two 3-hour comprehensive examinations: one in secondary mathematics education, the second in mathematics, and the third in the cognate area.

N.I.E. in Mathematics with Education Option

The program prepares licensed/certified teachers with advanced specialization in mathematics and mathematics education. It is especially recommended for students considering work for the Ph.D. in mathematics education. The program is administered by the Department of Mathematics. 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:
  - 22:611:15 Introduction to Analysis I (3 s.h.)
  - 22:611:16 Introduction to Analysis II (3 s.h.)
  - 22:612:20 Abstract Algebra I (3 s.h.)
  - 22:613:22 Abstract Algebra II (3 s.h.)
  - 22:613:23 General Topology (3 s.h.)

- Applied Mathematics Core:
  - 22:612:23 Intermediate Differential Equations (3 s.h.)
  - 22:612:24 Introduction to Partial Differential Equations I (2 s.h.)
  - 22:612:27 Numerical Analysis and Approximation Theory (3 s.h.)
  - 22:612:71 Numerical Analysis:
    - 22:612:71a Numerical Analysis
    - 22:612:71b Numerical Analysis

- Two courses in mathematics education:
  - Comprehensive examination of 12 hours over the required courses in either pure mathematics or applied mathematics, and education. The examination assesses the candidate's knowledge of mathematics and 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 educators, personalized curriculum developer, and researchers in mathematics education. It is administered by the College of Education.

The 72 semester hours include work toward the master's degree. Credit earned during the last two years prior to the degree will be applied.

Minimum course requirements are for exceptional students. Typically, the program consists of 80 to 90 semester hours.

ADMISSION

Applicants must have an undergraduate major in mathematics or the equivalent: a master's degree in mathematics, mathematics education, or closely related fields; a 3.0 grade-point average or above; and, except in unusual circumstances, a current teaching license/certificate and a minimum of two years of teaching experience.

REQUIREMENTS

Students must complete a minimum of 36 semester hours of graduate work in the Division of Mathematics Science (mathematics, statistics, and computer science), including the master's level core requirements for pure or applied mathematics described under "Master of Science in Mathematics Education" in the catalog. In the statement of the Graduate College for the degree, the minimum of 36 additional semester hours of course work, which must include 75:235 Current Issues in Mathematics Education and a minimum of two registrations in 75:235 Seminar: Mathematics Education.

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 the candidate should consult with appropriate faculty members to determine which courses they should take in order to adequately prepare for the examinations.

Two courses in educational statistics are required as preparation for research. The statistics requirements usually are met by taking 75:232 Intermediate Statistical Methods and 75:246 Design of Experiments.

Students must demonstrate competence in a foreign language.

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 (75:493) is required.

At the completion of the program, the student must have a 3.0 cumulative grade-point average or above on all graduate work in mathematics, at University of Iowa graduate work in mathematics, at all graduate work, and all University of Iowa graduate work.

Students take three written comprehensive examinations, one in mathematics education and two selected from other fields of education or mathematics, an oral examination follows the written examination.

They also complete a dissertation on a research problem in mathematics education. A dissertation proposal must be prepared by the dissertation committee prior to undertaking the study. Upon completion of the dissertation, an oral examination is conducted in defense of the dissertation.

M.I.A. in Music Education

The program provides students with deeper understanding of the theory and practice of music education, and the role of music in the school curriculum. The degree program may be taken with those 10- to 15-credit-hour minimum (45 to 55 semester-hour minimum).

ADMISSION

The applicant must be a licenced/certified music teacher or be in the process of completing a baccalaureate degree/certificate/requirements. A 2.50 undergraduate grade-point average, excluding grades in transfers, is required for admission to regular status.

The program is administered by the School of Music in cooperation with the College of Education. Application is made to the School of Music.

REQUIREMENTS

General:

- 22:611:15 Introduction to Graduate Study in Music (2 s.h.)

- Additional requirements must be satisfied.
Theory
25:441 Introduction to Contemporary Analysis and Theory 3 s.h.
25:442-450 Elective 3 s.h.
Specific hour and course requirements in the theory area are determined by scores on the advisory examinations.

History and Literature
21:301 Advanced History and Literature of Music I 3 s.h.
21:302 Advanced History and Literature of Music II 3 s.h.
Specific hour and course requirements in the history and literature area are determined by scores on the advisory examinations. Students excepted from 21:301 and/or 21:302 select courses from music history electives. For specific courses, see "History of Music" in the College of Liberal Arts section of the Catalog.

Education (14 s.h.)
75:144 Philosophy of Music Education 3 s.h.
75:149 Behavioral Research in Music 3 s.h.
75:206 Curriculum Development in Music Education 2 s.h.
75:240 Foundations of Music Education 2 s.h.
Elective to be selected in consultation with the advisor (may include 3 s.h. Electives) 5-6 s.h.

Ensemble
2 semester hours are required.
The amount of electives credit applicable toward the M.A. depends on scores earned on the music advisory examinations and the amount of credit earned in music education elective courses.

MASTER'S EXAM
Candidates must take a final written or oral examination during the semester in which they expect to complete their degree. Areas or content examinations required in the examination include music education, music theory, and music history and literature.

Ph.D. in Music Education
The program prepares students for teaching, research, or administrative posts. Graduate school students pursue doctorate degrees and curriculum candidates, or directors of city or district school music programs.

ADMISSION
For admission to the Ph.D. program in music education, students must have a 3.25 grade-point average on graduate work (excluding grades in electives), have a score above the fifteenth percentile on the verbal ability section of the Graduate Record Examination (GRE) General Test, hold or be qualified for a valid teaching license/certificate, and have a minimum of two years of successful music teaching experience.

In addition, the music education faculty makes an effort to recognize teaching success, academic potential, and writing ability before qualifications for admission are fully determined.

The program is administered by the School of Music in cooperation with the College of Education. Application is made to the School of Music.

REQUIREMENTS
The Ph.D. is granted on the basis of achievement, as determined by course grades, written examinations, and/or oral examinations, and not on the accumulation of semester hours of credit. The course requirements and semester hour limits below are minimum requirements for the typical student in preparation for the satisfactory performance on the comprehensive and final examinations.

General (11 s.h.):*: 25:440 Introduction to Contemporary Analysis and Theory 3 s.h.
3 s.h. 25:465 Behavioral Research in Music 3 s.h.
25:462 Introduction to Graduate Study in Music 2 s.h.
Elective (25:465-510) 3 s.h.
Music History and Literature (13-15 s.h.): 25:301 Advanced History and Literature of Music I 3 s.h.
25:302 Advanced History and Literature of Music II 3 s.h.
Elective (25:300-319) 3 s.h.
Applied and Ensembles 4 s.h.
Electives 0-2 s.h.
Music Education (23 s.h.): 75:144 Measurement and Evaluation in Music Education 3 s.h.
75:149 Behavioral Research in Music 3 s.h.
75:206 Curriculum Development in Music Education 2 s.h.
25:240 Foundations of Music Education 2 s.h.
75:240 Experimental Research in Music Education 3 s.h.
75:302 Supervision and Administration in Music Education 2 s.h.
75:445 Social and Psychological Factors in Music Education 3 s.h.
Elective 3 s.h.
Education (8 s.h.): 75:143 Introduction to Statistical Methods 3 s.h.
77:214 Advanced Applications of Statistics Techniques 3 s.h.
Elective 2 s.h.
Ph.D. level requirements
Students select elective courses, in consultation with their advisor, based on advisory examination scores and professional needs and goals. Subject areas include applied music conducting, ensemble, theory, history and literature, music education, education, statistics, and psychology.

DISSERTATION, COMPREHENSIVE EXAMINATION
Students earn a minimum of 1 semester hours for work on a dissertation.

The comprehensive examination is an inclusive evaluation of the student's mastery of selected fields of study. Candidates must demonstrate mastery and scholarship in the areas of theory

and practice of music education, research design and techniques, specialized music performance, history and literature of music, and music theory and analysis.

Presentation typically is divided as follows: music education theory and practice and research techniques, music theory and analysis, music history and literature, and a specialized research area.

M.A., Ph.D. in Physical Education
The Master of Arts and Doctor of Philosophy programs in physical education are described in the College of Liberal Arts section of the Catalog.

M.A.T. in Science Education
The M.A.T. program is designed for students who have no undergraduate degree in one of the sciences and few or no professional education courses. Successful completion of the program and fulfillment of the course work in science required by an endorsement program qualifies the student for an Iowa secondary teaching license.

The program is administered by the College of Education.

ADMISSION
Applicants must have a bachelor's degree with a major or an equivalent in one of the sciences and a 3.00 minimum undergraduate grade-point average.

REQUIREMENTS
Professional Education Sequence
75:100 Issues in Education 2 s.h.
Component 2:
75:180 Human Relations for the Classroom Teacher 3 s.h.
Component 3:
75:113 Educational Psychology 3 s.h.
Component 4:
75:151 Science Methods I: Elementary School Seminar and Practicum 3 s.h.
Component 5:
Component 6:
75:153 Science Methods III: Social Science Methods I 3 s.h.
75:186 Secondary School Special Methods Subject Area Practicum 3 s.h.
Component 7:
75:187 Seminar: Curriculum and Student Teaching 3 s.h.
75:190 Individual Projects in Laboratory Practice 3 s.h.
75:191 Observation and Laboratory Practice in the Secondary School 3 s.h.
75:192 Observation and Laboratory Practicum in the Secondary School 3 s.h.

Components 4, 5, 6, and 7 must be taken in sequence and only one each semester. These courses are not offered summer sessions.
Science Core
97:128 Meaning of Science 2 s.h.
97:130 Science in Historical Perspective 2 s.h.
97:131 Socio-Educational Applications of Earth Sciences and Environmental Sciences 3 s.h.
97:132 Socio-Educational Applications of Biological Sciences 3 s.h.
97:133 Socio-Educational Applications of Physical Sciences 3 s.h.
97:140 Problems in Integrating the Teaching of Environmental Science 3 s.h.
Science electives 11 s.h.

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 technical editing. It is offered with or without thesis.
The program is administered by the College of Education.

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 certification or verification unless they are preparing for careers in science museums, museums, or community colleges.

REQUIREMENTS
A total of 32 semester hours of course work with thesis or 34 semester hours without thesis, distributed as follows:
Science Education (9 s.h.):
75:75/255 Science Education: Issues, History, and Rationale 3 s.h.
75:75/256 Science Education and the Nature of Science 3 s.h.
75:75/257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
75:262 Advanced Techniques of Teaching Science in the Elementary School 3 s.h.
75:75/258 Science Education Research Models and Conceptual Schemes 3 s.h.
75:250 Seminar: Science Education 0-2 s.h.
Science Specialization (17-21 s.h.):
97:138 Meaning of Science 2 s.h.
Science and applied science courses selected from an area other than the specialization 3-6 s.h.
Students take a comprehensive examination that consists of two parts: one dealing with science education, the other with the science specialization area.

E.D.S. in Science Education
The E.D.S. in science education is an intermediate degree between the master's and the Ph.D. degree. It is recommended for state, regional, or local science supervisors as well as for instructors in community colleges and small four-year liberal arts colleges.
The program is administered by the College of Education.

ADMISSION
Candidates must have a 2.70 grade-point average in all undergraduate and graduate work undertaken prior to application for admission. Candidates usually are expected to have the equivalent of an undergraduate major in one of the sciences or science education.

REQUIREMENTS
A minimum of 60 semester hours of course work, which must include the courses listed below; courses taken toward a master's degree count toward this total:
75:75/255 Science Education: Issues, History, and Rationale 3 s.h.
75:75/256 Science Education and the Nature of Science 3 s.h.
75:75/257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
75:75/258 Science Education Research Models and Conceptual Schemes 3 s.h.
75:250 Seminar: Science Education 0-2 s.h.
75:255 Ph.D. Internship (takes for a total of 9 s.h.) 3 s.h.
Electives (6-15 to satisfy admittance) 15 s.h.
Total 60 s.h.

*May be repeated.

Candidates must complete 28 semester hours of course work within a limited area of study: biological science, physical science, environmental science.
They also complete 8 semester hours in an integrated group of supporting courses selected from a limited number of areas such as education, applied science, science, and history/philosophy of science, in consultation with the adviser.

Candidates must demonstrate competency in two of the following research test areas:
- statistics
- computer programming and/or data processing
- research design (completion of a plan 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.
Candidates complete 10 semester hours of dissertation credit (75:75/490).

The comprehensive examination consists of three parts: one dealing with science education, another with an area of science, and a third with the comprehensive studies area.
M.A. in Social Studies Education

The program provides an opportunity for本科生 and candidates for the master's degree in 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 history, social science, or related areas for classroom teachers or others interested in acquiring greater competence in their selected master 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 history or one of the other social sciences from an accredited institution, a 3.0 cumulative grade point average; a 3.0 grade-point average in history and/or other social science courses; preferred composite Graduate Record Examination (GRE) General Test score of 1,000 on the verbal and quantitative batteries; and two letters of recommendation. Evidence of writing ability in the form of a composed essay 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. courses may not be noted at a minimum of at least a 3.0 grade-point average.

PROGRAM A REQUIREMENTS

Program A students must complete a minimum of 36 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.

Note of the total 36 semester hours must include a minimum of 20 or above distributed among the three fields selected for concentration.

If the thesis option is selected, the student completes a research or terminal project in history and social sciences, or in related areas, in which case the thesis director is a member of the appropriate department, or an investigative project in social studies education, in which case the thesis director is a Faculty member in the College of Education.

3 hour writing examination is required in each of the three fields selected for concentration. An oral examination follows the written examination, conducted by the candidate's committee as a whole.

PROGRAM B REQUIREMENTS

Program B students complete a total of 38-40 semester hours, consisting of the courses listed below. All of the following courses must be completed, but students may elect to take some of the course work in the program of concentration of their 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 should take appropriate work for meeting all Iowa Department of Education requirements for teacher licensure/certification.

Professional Education Courses:

75:120 Issues in Education 2 s.h.
75:170 Methods: Social Studies 3 s.h.
75:231 Educational Psychology 3 s.h.
75:180 Human Relations for the Classroom Teacher 3 s.h.
75:180 Introduction to Instructional Design and Technology 3 s.h.
75:157 Philosophy of Education or 3 s.h.
75:158 Educational Sociology 3 s.h.
75:195 Observation and Laboratory Practice in the Secondary School 5 s.h.
75:192 Observation and Laboratory Practice in the Secondary School 5 s.h.
75:277 Seminar: Social Studies Education 3 s.h.

Candidates also are required to register for a practicum in a public school.

Subject Area Specialization Courses:

A minimum of 15 semester hours of course work in history or a social science is required, 10 of which will be taken in one area of history or one of the social sciences. Two courses should be taken with the instructor who will serve on the examining committee.

Five semester hours of course work may be taken in a second area of history or in another social science. The other five semester hours should be selected in consultation with the advisor.

COMPREHENSIVE EXAMINATION

The comprehensive examination consists of three parts: I. A written examination in the subject area specializing, 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 provides secondary departmental chairs, supervisors, curriculum directors, teacher education personnel, and college instructors in the social sciences and pedagogy.

ADMISSION

Applicants must have a bachelor's degree in history in the social sciences, or a master's degree in history, the social sciences, or education. They must satisfy the requirements for admission to a doctoral program in the Graduate College and have a 3.0 minimum grade-point average. A minimum Graduate Record Examination score of 1,200 composite of verbal and quantitative is required. Additional papers or field research are required as equivalent if no thesis was written as part of the M.A. An interview is required prior to regular admission.

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 science 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. A minimum of 23 semester hours of 75:195 must be completed with one of the faculty members in social studies education, unless other course work with three faculty members be completed.

Tool requirements are tailored to the individual's program and may consist of foreign language or other requirements. Usually, mastery plus familiar 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 times of written examinations may be rearranged.

The Ph.D. examining committee consists of a minimum of one faculty member from the various arts disciplines and one from social studies education. The remaining members (to make the minimum of five as required by the Graduate College) are selected with regard to the nature of the student's Ph.D. program and the requirements of the Ph.D. examining committee.

The comprehensive examinations are conducted at the candidate's expense; in addition, the written examination may be administered.

DISSERTATION

A dissertation is required on a research problem in history or the social sciences or on related areas, in which case an 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 is a faculty member of the College of Education. The candidate must present a prospectus of the research at the dissertation committee prior to undertaking the study. Upon completion, an oral examination is conducted in defense of the dissertation.

Continuing requirements for maintaining candidacy are 3.0 grade-point average plus annual verification.

Special Education

The division offers special education programs in these primary areas: mental retardation, learning disabilities; behavior disorders; early childhood special education; and mild, severe, and profound mental disabilities. These programs are designed to prepare graduates for positions in public schools, special 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 teacher licensure/certification are not available to undergraduates. Interests in those who wish to pursue a career in special education are encouraged to contact the
Admission
Admission requirements include:
- completion of graduation application form;
- copies of official transcripts for all previous college course work;
- official report of the Graduate Record Examination (GRE) General Test (verbal and quantitative);
- three current letters of recommendation; and evidence of experience of teacher certification (varies depending on program).

An interview may be requested. In addition to the above, the following represent minimum requirements:

- Master of Arts: A 2.75 undergraduate grade-point average or a 3.50 graduate grade-point average if a graduate degree has been conferred, and a combined verbal and quantitative GRE score of 1000 are preferred.
- Specialist in Education: A 3.25 graduate grade-point average and a combined verbal and qualitative GRE score of 1000 are preferred.
- Doctor of Philosophy: A 3.00 undergraduate grade-point average or a 3.50 graduate grade-point average 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. degree, the 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 (related primarily to licensure/certification standards).

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.

Master of Arts
The primary purpose of the M.A. degree program is to prepare students to deliver appropriate levels of service to students with disabilities at the practical, elementary, and secondary levels. The special education graduate program includes an internship component, in addition to the practicum, fieldwork, and classroom experiences in either public or private settings. Applications may request admission for the purpose of obtaining special education licensure/certification without also completing an M.A. degree. A M.A. degree is required by the M.A. program.

The M.A. degree program requires a minimum of 36 semester hours.

ADMISSION
Admission requirements are:
- 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), with a score of at least 1000; and three current letters of recommendation; evidence of experience in regular or special education (see each program for specific requirements); and
- a 3.50 minimum undergraduate grade-point average (or 3.00 on at least 12 semester hours of graduate course work).

An interview may be requested.

PROGRAM CORE
Special education core requirements for all programs:
7U:123 Exceptional Persons 3 s.h.
7U:124 Parent-Teacher Communication 3 s.h.
7U:200 Philosophies with Exceptional Persons 3 s.h.
7U:238 Assessment of Learning Disabilities 1-3 s.h.

PROGRAM SPECIALIZATIONS
Learning Disabilities
A core of three courses in learning disabilities (LD) is required for all students.
7U:131 Introduction to Learning Disabilities 3 s.h.
7U:207 Supervised Teaching: Elementary Learning Disabled 5 s.h.
7U:209 Seminar: Graduate Supervised Teaching 1 s.h.

Students seeking an elementary (K-6) LD teaching license/certificate must obtain (or already have) a regular elementary teaching license/certificate. The following courses also are required.
7U:173 Teaching Elementary School Mathematics 3 s.h.
7U:203 Methods: Children with Learning Disabilities 3 s.h.
7E:271 Advanced Reading Clinic Techniques 3 s.h.
7E:275 Advanced Reading Clinic Techniques 3 s.h.

If students are unable to complete 7E:271-272, the following courses may be taken.
7U:172 Reading Instruction: Teaching Principles 3 s.h.
7E:174 Diagnostic and Prescriptive Approaches to Reading Instruction 3 s.h.

Total 23 s.h.

Students seeking a secondary (7-12) LD teaching license/certificate must obtain (or already have) a regular secondary teaching license/certificate. The following courses also are required.
7U:176 Career Education and Transition 3 s.h.
7E:173 Teaching Elementary School Mathematics 3 s.h.
7E:194 Methods: High School Reading or 7E:195 Developing Reading Skills in the Secondary School 3 s.h.

7U:203 Methods: Adapting with Learning Disabilities 3 s.h.

Total 32-33 s.h.

Behavior Disorders
A core of six courses in behavior disorders (BD) is required for all students.
7U:123 Introduction to Behavioral Disorders 3 s.h.
7U:208 Supervised Teaching: Elementary Behavior Disorders 5 s.h.
7U:209 Seminar: Graduate Supervised Teaching 1 s.h.
7U:210 Characteristics and Programs: Persons with Severe Behavioral Disorders 2 s.h.
7U:211 Interventions: Persons with Severe Behavioral Disorders 2 s.h.
7U:240 Behavioral Principles 1-3 s.h.

Students seeking an elementary (K-6) BD teaching license/certificate must obtain (or already have) a regular elementary teaching license/certificate. The following course also is required.
7U:206 Methods: Children with Behavioral Disorders 3 s.h.
7U:210 Characteristics and Programs: Persons with Severe Behavioral Disorders 2 s.h.
7U:240 Behavioral Principles 1-3 s.h.

Students seeking a secondary (7-12) BD teaching license/certificate must obtain (or already have) a regular secondary teaching license/certificate. The following courses also are required.
7U:121 Career Education and Transition 3 s.h.
7U:204 Methods: Adolescents with Special Needs 3 s.h.
7U:210 Characteristics and Programs: Persons with Severe Behavioral Disorders 2 s.h.
7U:211 Interventions: Persons with Severe Behavioral Disorders 2 s.h.
7U:254 Seminar: Behavioral Assessment and Evaluation 3 s.h.

Rental Retardation—Mild/Moderate
A core of six courses in mental retardation (MR) is required for all students.
7U:115 Mental Retardation 3 s.h.
7U:208 Seminar: Graduate Supervised Teaching 1 s.h.
7U:220 Supervised Teaching: Elementary Retardation 3 s.h.
7U:240 Behavioral Principles 1-3 s.h.
7U:242 Methods: Persons with Moderate/Severe/Profound Mental Retardation 3 s.h.
7U:246 Supervised Teaching: Elementary Moderate Mental Disabilities 3 s.h.

Students seeking an elementary (K-6) MR approval must obtain (or already have) a regular elementary teaching license/certificate. The following course also is required.
7U:214 Methods: Children with Mild Mental Retardation 3 s.h.

Total 26-30 s.h.
Students seeking a secondary (7-12) MD teaching license must obtain (or already have) a regular secondary teaching main certificate. The following courses are required.

70:113 The Culturally Different in Diverse Setting for Admissions to the Elementary Special Education Program 3 s.h.
70:215 Methods of Learning with Mild Mental Retardation 5 s.h.
70:175 Teaching Elementary School Special Education I 2.5 s.h.
70:184 Developing Reading Skills in the Secondary School 2.5 s.h.
70:121 Career Education and Transition 5 s.h.

Total 40.42 s.h.

The remainder of the required 38 semester hours are elective courses chosen by the student and the academic advisor. Students who meet the requirements for licensure/certification in the area of elementary special education— mild retardation may meet the requirements for endorsement in the area of physically handicapped (K-6) by completing the following courses.

3.15 Introduction to Speech and Hearing Process and Disorders 3 s.h.
70:138 Methods: Children with Physical Disabilities 3 s.h.
70:159 Orientation to the Rehabilitation of the Physically Handicapped Child 3 s.h.
70:275 Supervised Teaching with Physically Handicapped 5 s.h.

Early Childhood Special Education

Poor teaching/lack of certification is desirable but not required for admission to the early childhood special education program. Applicants who do not already have certification must complete an 11 semester hour professional education core, which is not applicable toward an M.A. degree, as follows.

70:190 Introduction: Elementary and Early Childhood Teaching 3 s.h.
70:192 Educational Psychology and Measurement 3 s.h.
70:180 Human Relations for the Classroom Teacher 3 s.h.
70:414 Auditory Equipment for Instruction 1 s.h.
70:91 Introduction to Microcomputing for Teachers 1 s.h.

The following courses, in addition to the above core requirements, form the program of study for early childhood special education.

70:117 Inservice/Continue Program for Disabled 3 s.h.
70:271 Assessment of Young Children with Disabilities 3 s.h.
70:275 Development of Young Children with Disabilities 3 s.h.
70:277 Methods: Early Childhood Special Education Ages O-3 3 s.h.
70:274 Methods: Early Childhood Special Education Ages 4-6 3 s.h.
70:278 Topics in Young Children with Disabilities 3 s.h.
7:12 Language Development 3 s.h.
7:141 Manual Communication I 1 s.h.
70:276 Supervised Teaching: Early Childhood Special Education I (1/2 semester, 1/2 time in a center-based program) 3 s.h.
70:277 Supervised Teaching: Early Childhood Special Education II (1/2 semester, 1/2 time in a home-based program) 3 s.h.
70:125 Seminar: Teaching Early Childhood Special Education I 1 s.h.
70:166 Rehabilitation Research course 0 s.h.
70:192 Introduction to Microcomputing for Teachers 1 s.h.

The remainder of the required 30 semester hours are elective courses chosen by the student and the academic advisor.

Moderate/Severe/Profound Mental Disabilities

Poor teaching/lack of certification is desirable but not required for admission to the moderate/severe/profound mental disabilities licensure/certification program. Applicants who do not already have licensure/certification must complete an 11 semester hour professional education core, which is not applicable toward an M.A. degree, as follows.

70:414 Introduction: Elementary and Early Childhood Teaching 3 s.h.
70:256 Educational Psychology and Measurement 3 s.h.
70:180 Human Relations for the Classroom Teacher 3 s.h.
70:291 Auditory Equipment for Instruction 1 s.h.
70:192 Introduction to Microcomputing for Teachers 1 s.h.

The following courses, in addition to the core requirements, form the program of study for moderate/severe/profound mental disabilities.

70:175 Inservice/Continue Programs for Disabled 3 s.h.
70:240 Behavioral Principles 2 s.h.
70:241 Methods: Persons with Moderate/Severe/Profound Mental Disabilities I 3 s.h.
70:242 Methods: Persons with Moderate/Severe/Profound Mental Disabilities II 3 s.h.
70:243 Issues: Teaching Persons with Moderate/Severe/Profound Disabilities 3 s.h.
70:245 Supervised Teaching: Elementary Moderate Mental Disability I (1/2 semester, 1/2 time) 3 s.h.
70:245 Supervised Teaching: Severe/Profound 1/2 semester, 1/2 time 3 s.h.
70:246 Supervised Teaching: Moderate/Severe/Profound 3 s.h.
70:247 Adaptations for Students with Multiple Disabilities 3 s.h.
70:248 Cardiovascular rehabilitation course 0 s.h.
70:262 Seminar: Teaching Early Childhood Special Education I 1 s.h.

The remainder of the required 30 semester hours are elective courses chosen by the student and the academic advisor.

Multispecialty Resource Teaching

A core of five to six courses is required.

70:117 Inservice/Continue Program for Disabled 3 s.h.
70:122 Supervised Teaching: Elementary Resource Program 5 s.h.
70:205 Seminar: Graduate Supervised Teaching 1 s.h.

At least two of these.

70:131 Introduction to Learning Disabilities 3 s.h.
70:175 Introduction to Behavioral Disorders 3 s.h.
70:115 Mental Retardation 3 s.h.

Students seeking an elementary (K-6) multispecialty resource teaching license/certificate must obtain a regular elementary teaching license/certificate. The following courses also are required.

70:206 Methods: Children with Behavioral Disorders 3 s.h.
70:213 Methods: Elementary Resource Teaching 3 s.h.
70:175 Teaching Elementary School Mathematics 2.5 s.h.
70:271 Advanced Reading Clinic Techniques 2.5 s.h.
70:272 Advanced Reading Clinic Practicum 2.5 s.h.

Students are unable to complete all 70:271, 272. The following courses may be taken.

70:175 Reading Instruction: Teaching young children and students with learning disabilities 3 s.h.
70:114 Diagnostic and Prescriptive Approaches to Reading Instruction K-12 3 s.h.
70:199 Methods of Teaching Reading in the Secondary School 3 s.h.
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supervisory work, and work-study opportunities in special education.

In addition to the general graduate admission requirements listed below, requirements for admission to this program include a master's degree in special education or equivalent; preparation and license/certification in special education; and a minimum of one year of full-time teaching experience prior to admission to the program in the progression to some level of teaching experience, children, and classroom experience in a teacher or equivalent experience.

Doctor of Philosophy

The Ph.D. program in special education prepares students for positions in higher education research and teaching, and for curriculum, supervision, research, and administrative positions in state and local education agencies. The program permits students to study and practice extensively in their area of interest in special education.

Admission requirements for the Ph.D. program include a master's degree or equivalent and a minimum of one year of full-time teaching experience with exceptional children. The admission 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 must be developed, depending on the student's background and educational interests, in consultation with the candidate. Students are expected to pass a comprehensive exam, which consists of five exams, in each major area of specialization. The actual course of study is developed by the student and the academic advisor. Students are required to write a comprehensive examination and a doctoral dissertation (510, 690). These are in Special Education, 18 semester hours.

Facilities

For students enrolled in the doctoral program, significant scholarship, research, and professional opportunities are available in a wide variety of areas, including special education, educational psychology, and educational administration.

Courses

Early Childhood and Elementary Education

Early Intervention and Development

Three courses (9.0 credit hours) are required for students in special education. These courses may be taken in one of the following concentrations: Early Childhood Education, Elementary Education, or Special Education.

Prerequisites: Completion of 60 semester hours.

Admission to the program is based on the availability of financial aid. The application process for admission to the program is competitive. The program is designed to meet the needs of students who are interested in pursuing careers as special education teachers.

Doctor of Philosophy

The Ph.D. program in special education is designed to prepare students for positions in higher education. The program requires students to complete a minimum of 90 semester hours beyond the bachelor's degree. Students are required to write a comprehensive examination and a doctoral dissertation (510, 690). These are in Special Education, 18 semester hours.

Prerequisites: Completion of 60 semester hours.

Admission to the program is based on the availability of financial aid. The application process for admission to the program is competitive. The program is designed to meet the needs of students who are interested in pursuing careers as special education teachers.
70-145 Methods and Materials: Elementary School Specials
3.5
Area of specialization in music for: elementary education students and all education major, except education minor, students.
70-145 Methods and Materials: Early Childhood Education
3.0
Current education literature is of interest to students who are interested in the principles of early childhood education and who are preparing for the field of early childhood education.
70-150 Course of Study: Young Children (3rds Thru 6ths) (3rd-6th)
3.5
The technique of prioritizing behaviors within a child's natural behavior. Tips to enhance social skills development of children, through interactive activities which encourage the positive behaviors of learning, social interaction, and social awareness in children. This course meets the requirements of the Elementary Education Program.
70-150 Course of Study: Elementary School Specials
1.5
Curriculum, methodology, research, specific course requirements, methods and techniques for content area learning. Instructional strategies that enhance student learning, assessment, and evaluation.
70-160 Methods: Elementary School Language Arts
3.0
Primary language arts development and selected reading methods, selected methods for developing reading skills, appropriate and practical applications through strategy, writing, reading, visual media, social psychology, sociology, writing, etc., and language development, treatment of content areas, and special reading methodologies. General language arts for elementary school teachers.
70-161 Methods: Elementary School Social Studies
2.5
70-162 Methods: Elementary School Social Studies
2.5
70-163 Methods: Elementary School Mathematics
3.0
70-164 Methods: Elementary School Science
4.0
Science for students in grades 4-8. A development of work skills and test performance. Attention to the total language requirement. Satisfactory completion of 997 required. Combinations: 70-161 and 70-162.
70-165 Methods: Elementary School Health
2.5
The development of work skills and test performance in health science through the study of physical, mental, and emotional health needs. Satisfactory completion of 997 required. Combinations: 70-161 and 70-162.
70-166 Methods: MulticulturalElementary Education
3.0
In a multicultural society, the concept of cultural diversity is a vital component of the education process. This course examines the role of culture in the teaching and learning process, and the importance of understanding cultural differences in the classroom.
70-166 Methods: MulticulturalElementary Education
3.0
In a multicultural society, the concept of cultural diversity is a vital component of the education process. This course examines the role of culture in the teaching and learning process, and the importance of understanding cultural differences in the classroom.
70-166 Methods: MulticulturalElementary Education
3.0
In a multicultural society, the concept of cultural diversity is a vital component of the education process. This course examines the role of culture in the teaching and learning process, and the importance of understanding cultural differences in the classroom.
70-167 Methods: Early Childhood Education
3.0
Current education literature is of interest to students who are interested in the principles of early childhood education and who are preparing for the field of early childhood education.
70-168 Math: Teaching Practice, Part 3
2.5
A practical and hands-on approach to teaching mathematics. Students will be introduced to the fundamental concepts and techniques of teaching mathematics, with an emphasis on developing problem-solving skills and critical thinking.
70-169 Math: Teaching Practice, Part 4
2.5
A practical and hands-on approach to teaching mathematics. Students will be introduced to the fundamental concepts and techniques of teaching mathematics, with an emphasis on developing problem-solving skills and critical thinking.
70-169 Math: Teaching Practice, Part 4
2.5
A practical and hands-on approach to teaching mathematics. Students will be introduced to the fundamental concepts and techniques of teaching mathematics, with an emphasis on developing problem-solving skills and critical thinking.
70-170 Teaching Elementary School Mathematics
3.0
Elementary school mathematics curriculum, methods and instructional techniques. Appropriate pedagogical strategies and techniques are presented, concentrating on the use of manipulatives, problem-solving, and assessment techniques.
70-170 Teaching Elementary School Mathematics
3.0
Elementary school mathematics curriculum, methods and instructional techniques. Appropriate pedagogical strategies and techniques are presented, concentrating on the use of manipulatives, problem-solving, and assessment techniques.
70-170 Teaching Elementary School Mathematics
3.0
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70-170 Teaching Elementary School Mathematics
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70-170 Teaching Elementary School Mathematics
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70-170 Teaching Elementary School Mathematics
3.0
Elementary school mathematics curriculum, methods and instructional techniques. Appropriate pedagogical strategies and techniques are presented, concentrating on the use of manipulatives, problem-solving, and assessment techniques.
70-170 Teaching Elementary School Mathematics
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Elementary school mathematics curriculum, methods and instructional techniques. Appropriate pedagogical strategies and techniques are presented, concentrating on the use of manipulatives, problem-solving, and assessment techniques.
70-170 Teaching Elementary School Mathematics
3.0
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Elementary school mathematics curriculum, methods and instructional techniques. Appropriate pedagogical strategies and techniques are presented, concentrating on the use of manipulatives, problem-solving, and assessment techniques.
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70-170 Teaching Elementary School Mathematics
3.0
Elementary school mathematics curriculum, methods and instructional techniques. Appropriate pedagogical strategies and techniques are presented, concentrating on the use of manipulatives, problem-solving, and assessment techniques.
PLANNING, POLICY, AND LEADERSHIP STUDIES

Chair: Clark E. Robinson
Program coordinators, educational administration: George A. Chambers
Program coordination, higher education: Clark E. Robinson
Program coordinator, social foundations: education: William J. Duffy
Professors: Arthur M. Braskamp, George A. Chambers, Walter J. Ferree, Alan B. Hornick, Bradley A. Lawrence, H. Robert Sager
Associate professor: Jerry N. Katz

Assistant professor: Owen L. Springer
Assistant professor: Charles W. Morris, Carol L. Waler

Assistant professor: John C. Fox

Adjunct assistant professor: Stephen A. J. Howard, Brian A. Knott

Adjunct assistant professor: Kenneth E. Bierman

Degrees: M.A., M.S., Ph.D.

The Division of Planning, Policy, and Leadership Studies offers programs that prepare administrators, professional personnel, teachers, and researchers in the fields of educational administration, higher education, and social foundations. The academic programs in the division reflect the diversity of purpose.

Iowa Community College Licensees

Instructor

To qualify for a professional license with authorization to teach in an arts and sciences field of an area community college in Iowa, students must hold a master's degree granted by an approved institution, with specialization in a field of instruction offered in the arts and sciences division of an area college.

All licenses require 3 semester hours of 7818 Human Relations for the Classroom Teacher. Students are required to complete 6 semester hours of professional preparation appropriate to teaching in a community college, which may be satisfied in several ways. Students should consult with their advisor or the program chair.

Administrator

Administrators of units or departments are required to hold or complete a bachelor's degree during the term for which the license is granted. Initial administrators are required to hold a master's degree with a specialization in administration, a subject field taught in the institution, vocational/technical education, adult education, or student services. Both types of administrators must have four years of successful educational work experience, of which a minimum of two years have been at the postsecondary level. Experience must include a minimum of one year of teaching or of expectation appropriate to the area of administration.

The program in higher education offers approved course work leading to administrative endorsement as well as a course in supervision and evaluation (7812), which fulfills state administrator training requirements. Applicants should consult an advisor to select 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 to prepare postsecondary health occupations education programs. In addition to basic skill and General Education Requirements of the College of Liberal Arts, students complete courses in professional education that are in the health occupations education specialty area and/or supporting areas.

Students are advised to program their current appropriate certification, licensure, or registry appropriate to the area of health occupations education in which they wish to teach, e.g., dental assisting, medical office assisting, or respiratory therapy. The health occupations education major is based on the health occupations education and liberal studies appropriate to teachers who want to earn a bachelor's degree.

Applicants to this program must satisfy criteria for the degree and certification program (T.E.P.) of the College of Education.

Program requirements are as follows.

PROFESSIONAL EDUCATION COMPONENT

7925 Educational Psychology 3 credit hours

7951 Professional Auditory Equipment for Instruction 1 credit hour

7992 Introduction to Microcomputers for Teachers 1 credit hour

7112 Teaching of Adults 3 credit hours

7921 Vocational Education 2 credit hours

7919 Seminar: Health Occupations Education 3 credit hours

7912 Community College Teaching Internship 2 credit hours

7901 Curriculum Development: Application to Community College and Health Careers 3 credit hours

7916 Assignment in Social Foundations 2 credit hours

2501 Special Education 2 credit hours

2510 Course Work in Health Occupations Education 10 credit hours

2510 Course work in health occupations education and supporting field should be planned carefully in consultation with the advisor.

Students may take workshops or courses offered by specific health colleges or choose electives.
such as development of architectural sites or computers in education, in keeping with their educational goals.

Graduate Programs

Educational Administration

The program in educational administration prepares technical and administrative positions. Its programs lead to the M.A., E.D., and Ph.D. degrees. In all programs leading to a license/certification, Educational administration often programs jointly with other divisions in the College of Education and with other colleges in the University.

License/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 the license/certification they seek. An administrative license/certification program at a level different from that characterizing the student's prior preparation and experience must be planned with an advisor. Because of the specific requirements for each administrative license/certification, candidates are required to plan their program with their advisor's approval.

Master of Arts

The M.A. program prepares individuals for appointment in elementary or secondary school principal or superintendent positions and for leadership in staff development areas. Education agencies and state departments of education require a minimum of 32 semester hours.

Admission

Applicants must satisfy Graduate College requirements and be 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.

Course Requirements

With the aid of an advisor, the student prepares a plan of study including the following core requirements.

72-201 Foundations of School Administration 3 s.h.
72-208 Admission of Students with Special Needs 3 s.h.
72-281 The Principles of Administrative Personal 3 s.h.
72-303 Reference and Evaluation 3 s.h.
72-300 Design and Organization of Curricula 3 s.h.

For Iowa principalship license/certification, students must meet the basic education requirement of the state of Iowa. Students specialize in elementary, secondary, or central staff administration by completing one of the programs outlined below. Candidates may choose electives approved by the advisor to satisfy the following degree requirements.

Elementary Level

72-254 Contemporary Management Strategies for the Elementary Principal 3 s.h.
72-441 Field Service Project in Elementary Administration 3 s.h.
72-463 Electives selected with approval of advisor 3 s.h.

Secondary Level

72-260 Contemporary Management Strategies for the Secondary Principal 3 s.h.
72-465 Field Service Project in Secondary Administration 3 s.h.
72-463 Electives selected with approval of advisor 3 s.h.

Central Staff Administration

79-143 Introduction to Statistical Methods 3 s.h.
72-475 Financial Management of Local School Systems 3 s.h.
72-464 Field Service Project in Central Administration 3 s.h.
72-463 Electives selected with approval of advisor 3 s.h.

Comprehensive Examinations

The M.A., comprehensive examinations consist of a two-hour examination in educational administration and one-hour examination 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 plan the comprehensive examination if they plan to graduate that semester.

Specialist In Education

The S.Ed. program prepares candidates for administrative positions in area education agencies, state departments of education, and the U.S. Office of Education. It also exists school administration in upgrading their administrative data to the level of superintendent of schools. Students seeking license/certification/plus a program approved by an advisor to meet state of Iowa license/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

72-291 Administration of Educational Programs and Personnel 4 s.h.
72-294 Politics and Economics of the Government and Financing of Public Education 4 s.h.
72-297 Administrative Leadership Theory 4 s.h.
72-299 Legal Aspects of School Administration 3 s.h.
72-395 Educational Specialist Research in Educational Administration 3 s.h.

Program Summary

Students must complete the balance of their credits in the courses chosen from those above in one of the following areas of specialization: licenses/certification specifically listed in each area of specialization are the required courses.

Elementary School Administration

72-150 Introduction to Educational Measurement 3 s.h.
72-202 School Organization Patterns 3 s.h.
72-304 Senior Supervision and Administration 3 s.h.
72-222 Internship for Primary Prevention of School 3 s.h.

Secondary School Administration

79-143 Introduction to Statistical Methods 3 s.h.
72-202 Internship in Elementary Education 3 s.h.
72-205 Comprehensive Bilingual in Education 3 s.h.
72-295 Financial Management of Local School Systems 3 s.h.
72-375 Educational Administration Prerequisites 3 s.h.
72-463 Electives selected with approval of advisor 3 s.h.

Research

All candidates for the Ed.S. degree must complete a formal research paper (3 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 a three-hour examination in educational administration and one three-hour examination 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 in special education administration program 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 entrance to a graduate degree program at a major university in the fields of educational leadership or administration.

Doctor of Philosophy

The Ph.D. program prepares professionals for leadership positions at all levels of education (school administration, research, teaching at the college or university level) through individually designed programs that include coursework in related disciplines and research projects. 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 experience are required. Students are expected to achieve competency 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 areas, a Ph.D. advisor, and a Ph.D. dissertation. Commonly used specializations are education administration, secondary school administration, elementary school administration, school systems analysis and research, school finance, curriculum, legal aspects, theory, and school personnel. Students must demonstrate proficiency in two research tool-areas.

Admissions

Applicants must satisfy Graduate College requirements and are selected through a faculty review process. The division admits a maximum of ten students in the fall semester or the preceding summer session. Factors considered include recommendations from college or university professors who can evaluate the candidate’s scholarship and potential for academic success, graduate 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 administrative in educational organizations.

Complete application materials must be submitted by January 1 for fall semester admission. Admission decisions are made by the division faculty; applicants are notified by January 15.

Core Courses

Core courses are designed to provide the necessary background for further study, including research in specialized areas, and to develop competencies central to the functional areas of school administration. The four core courses incorporate planning, educational personnel, program 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 four semester hours of credit, is open only to Ph.D. and Ph.D. students, and requires the development and practice of interaction, reading, and writing skills. Session designates primarily for doctoral candidates are open to supplement other functional core areas. Scholarship is reflected in writing, reading, and research in all doctoral programs.

Corporations

Students enrolling in the administration program must complete a 3-quarter-hour course outside the College of Education with the advisor's approval.

Comparative Examinations

Doctoral students must satisfactorily complete an executive six-hour comprehensive examination in the six common areas of educational administration and a three-hour examination based on the student's area of specialization and approved by the student's advisor. The six-hour comprehensive exam must be completed prior to the final examination. Students must be registered in the Commonwealth College at the time of the exam. 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 their Ph.D. degree must request a comprehensive examination with an advisor in the Division of Planning, Policy, and Leadership Studies earlier in their sequence of study.

Any of the areas of specialization open to doctoral students in educational administration are open to other doctoral students who meet the necessary registration prerequisites for specific courses. Students should complete approximately 12 semester hours in one area of specialization before seeking a comprehensive examination. If the student decides to take a field within educational administration as a major comprehensive area, he or she should plan to complete approximately 18 semester hours of diversified course work in educational administration.

Research Dissertation

Prospectus

All students must write a formal dissertation prospectus and submit it for approval first by their advisor and then by the members of their doctoral committee. Students and advisors 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. Dissertations prospectus meetings are not held during summer sessions.

Completing and Final Examination

Students must complete 48 semester hours of dissertation research credit. The doctoral program culminates with a final oral defense of the dissertation. Students usually take the examination within a month of their anticipated time of graduation. They must be registered at the University of Illinois during the semester in which they graduate.

Residency

Each doctoral candidate must successfully complete two semesters (a minimum of 9 semester hours excluding thesis credits) on campus to fulfill the residency requirement. The following example Ph.D. program requires a minimum of 90 semester hours and assumes that students enter with a M.A. and 32 semester hours of graduate credit.

Course Requirements

70-201 Administration of Educational Programs and Personnel
4 s.h.
70-204 Politics and Economics of the Governance and Financing of Public Education
4 s.h.
70-297 Administrative Leadership
4 s.h.
70-370 Research Methodology and Quantitative Analysis
4 s.h.
Other Required Courses

Corporate courses selected with approval of advisor
9 s.h.
Research design and/or statistics
6 s.h.
Thesis
10 s.h.
Elective within your specialization; students typically include two or more depth courses and one course
12 or more semester hours in a specialization area.
Total
90 s.h.

Social Foundations of Education

Social foundations of education is an interdisciplinary program designed to enable students to undertake the study of the foundations 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 in the College Catalog. A personal interview with one or more members of the social faculty is strongly recommended and may be required. An undergraduate and/or graduate emphasis in philosophy, the humanities, or the social sciences and two years of teaching experience are strongly recommended. Students must maintain a 3.0 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 of work in social foundations, which should include at least two courses in each of the five areas of specialization. The remainder of the required 32 semester hours of course work must be in an area of concentration appropriate for their professional career and academic goals. For example, students interested in philosophy of education usually take these courses in the Department of Philosophy.

**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 15 semester hours in their major field of concentration, as well as educational administration, educational research, and higher education.

Approximately one-third to one-half (30 to 45 semester hours) of each student's program is devoted to work in depth in at least one other program at the University, such as history, philosophy, political science, or sociology. These sequences are individually planned by the student in conjunction with her or his advisor and the appropriate department or departments.

Two research courses are required. They may be selected from the following alternatives in accordance with the individual student's research interests: research design and program two: courses in a graduate level statistics sequence: philosophy of science and philosophy of social science; or international foreign language proficiency examinations.

In addition, all students are required to successfully complete 72 to 12-hour seminar courses in credit.

**Higher Education**

Predoctoral and continuing education in the United States represents an extensive and complex set of phenomena. The academic programs in the preprofessional education that comprise: Degrees are offered in all levels, with emphasis on research and practice. Preprofessional education or administration is available. The teaching, research, and service activities of the faculty and the graduate students of the several degree programs illustrate that education beyond the high school level continues in a variety of ways for all ages and in many different settings.

**Master of Arts**

The M.A. program in higher education prepares individuals for entry-level positions in public and private school, university, and community college administration, instructional management, continuing education, and community college teaching.

**Admission**

Applicants for admission must satisfy the general requirements for admission to the Graduate College. Candidates are accepted on the basis of grade point average, GRE General Test scores, and preference for professional growth. Transcript, GRE scores, three letters of recommendation, and a statement of educational goals are required for regular admission.

Complete application materials must be submitted by November 1 for spring semester admission and April 1 for summer semester admission.

**Requirements**

The M.A. program requires a minimum of 32 semester hours. Students must submit five hours of written examinations based on the major area of concentration, and mastery, 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 may, in addition, write a major field examination based on the major area of concentration, and specialization, according to the plan of study developed individually for each student.

**Specialization in Education**

The Ed.S. program provides advanced graduate preparation in the areas of specialization, academic planning and program development (including an emphasis in educational administration), community college administration, and continuing education. In addition, these students usually do not plan to continue for the Ph.D. The specialization 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 accepted on the basis of grade point average, GRE General Test scores, and preference for professional growth. Transcript, GRE scores, three letters of recommendation, and a statement of educational goals are required for regular admission.

Complete application materials must be submitted by November 1 for spring semester admission and April 1 for summer semester admission.

**Requirements**

Requirements for the Ed.S. major in higher education are as follows:

- 18 semester hours in professional education and related fields, including a structured internship arranged in consultation with the advisor; to be approved in one of the following areas: academic, administrative, and community college administration (including an emphasis on academic administration), community college administration, continuing education, and community college teaching.

- At least 25 semester hours in the area of specialization, to be determined in consultation with the advisor.

- Two semester hours of electives, as approved by the advisor.

**Research**

Research conducted under regulation in 719-26 General Specialist Research in Higher Education for 4 semester hours.

Two 3-hour comprehensive examinations: one that covers the field of higher education in general, and one that covers one of the five concentrations in higher education, perhaps reflecting an area of specialization within the concentration, followed by an oral examination.

**Related Field**

Students majoring in another field who want to complete a minor field in higher education may take 6 hours of relevant coursework in their studies. Plans of study are developed individually.

**Teaching Internship**

Program participants each half-hour for a full semester in cooperating community colleges under the supervision of an experienced faculty member in that college and with field supervisors as part of the program. Students participate as fully as possible in the academic life of the host community college, and usually gather data for their Ed.S. research project during the internship. Participants are not able to earn a minor field in the two-semester program.

**Doctor of Philosophy**

The Ph.D. program is designed for persons who are interested in serving as administrators, specialists, researchers, and teachers in contemporary institutions or in public or private agencies. The program in higher education offers areas of concentration: general administration, academic planning and program development (including an emphasis on educational administration), community college administration, continuing education, and policy studies. The program requires a minimum of 90 semester hours beyond the baccalaureate degree.
REQUIREMENTS

The degree may be taken without thesis (30 semester-hour minimum) or with thesis (minimum of 28 semester hours of course work plus 2-hour summer term of thesis credit). All students must complete a core of courses totaling approximately 25 semester hours. Included in this core are a graduate-level survey course in educational psychology, statistics, and research methods, at least two courses in educational psychology or a substitute area. Three-hour examinations assure a minimum of three courses in the area; two-hour examinations assure 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 college departments, state departments of education, 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 graduate admission requirement is the same as that for the Graduate College. If an applicant's scores on the verbal, quantitative, or analytical sections of the Graduate Record Examination (GRE) General Test are lower than 500, there is no offsetting evidence of superior ability, the applicant will be rejected. However, the faculty may adjust the GRE standards for students who do not speak English as their native language.

Students who expect to concentrate in the area of statistics should have training in college mathematics through differential and integral calculus. The absence of such training is a deficiency that can 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.

Applicants are encouraged to include a personal statement about their vocational goals. The faculty reviews applications as they are received.

REQUIREMENTS

In addition to the substantive courses in educational measurement and statistics offered by the division, all students must complete the following required courses:

- 22C:100 Introduction to Computing with FORTRAN (or equivalent) 3 s.h.
- 71:131 Educational Psychology 3 s.h.
- 71:230 Educational Research Methodology 3 s.h.
- 71:254 Appraisal in Counseling 3 s.h.

The student's advisor specifies additional course work. 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 statistics, with the intention of teaching on the college level, are required to take courses in the mathematical theory of statistics. Those who concentrate in the area of educational measurement and evaluation are advised to take courses in curriculum, counseling, and helping education. All students must develop familiarity with computer-programming techniques and statistical analysis programs.

Candidates who enter the program without completing an M.A. thesis must complete a substitute project approved by three members of the student's faculty. The project must be completed before the Ph.D. comprehensive examinations may be written. A minimum of 90 semester hours is required for the degree, including 30 or more semester hours of thesis credit.

The record of every student admitted to the program is reviewed after completion of approximately 18 semester hours of course work. The division faculty considers course grade, evidence of critical and analytical skills, development since admission to the program, and promise for continued growth. Students who show insufficient potential or deficiencies that cannot be remedied are dropped from the program.

Following completion of the major portion of their course work, candidates must write comprehensive examinations. Typically, these consist of three 3-hour written examinations over the fields of applied statistics, educational measurement, and educational psychology or an approved substitute area. A substitute area is generally 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 defense is required 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 1988.

The program's goal is to prepare doctoral-level counseling psychologists with professional 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 instructors and professional practitioners. Candidates find positions in higher education, counseling centers, clinics, private practice, and hospitals.

ADMISSION

Applications are complete when the following items have been received:

- Graduate College application form;
- official transcripts of all previous undergraduate and graduate work;
- official report of Graduate Record Examination (GRE) General Test scores; the GRE Advanced Test in Psychology is encouraged but not required; and
- personal statement outlining career goals and reasons for seeking advanced training as a counseling psychologist.

Three letters of recommendation from persons in a position to assess the applicant's potential for completing the doctoral program.

The faculty gives preference 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; and GRE General Test scores (verbal plus mathematics) above 1200; undergraduate major, minor, or substantial course work in psychology; previous research and counseling experiences. The faculty encourages applications from minority, women, and persons from a wide range of backgrounds and academic preparation. A maximum of eight students is accepted each year.

The deadline for completed applications is January 15. Admissions decisions are made by March 15. All students must begin the program in the fall semester after admission.
77-356 Processes and Outcomes in Counseling and Psychotherapy 3 s.h.
77-365 Psychopharmacology I: Cognitive and Reafferent Aspect 3 s.h.
77-460 Issues and Ethics in Professional Psychology 3 s.h.
77-462 Advanced Practicum in Counseling Psychology 3 s.h.
77-493 Advanced Practicum in Counseling Psychology (may be repeated) 3 s.h.
Total (minimum) 33 s.h.

Students must enroll in practice to reach a specific level of clinical contact, supervision, and additional experience hours. At least one practicum must be served at the University Counseling Service, unless the faculty approves a waiver. Placement outside the University Counseling Service must have the approval of the counseling psychology faculty. Students must successfully complete at least one semester of 77-493 Advanced Practicum in Counseling Psychology before enrolling in 77-493 Advanced Practicum in Counseling Psychology. Waivers of practicum requirements may be granted under special circumstances by a majority vote of the counseling psychology faculty.

Other Requirements
A minor area of specialization is planned individually in collaboration with the doctoral student's major and minor advisors. Elective courses are determined in collaboration with the major advisor.
A research project equivalent to the master's thesis must be completed prior to the comprehensive examinations. Up to 6 semester hour of credit may be applied to this project. The dissertation research study is planned in collaboration with the doctoral student's major advisor. Research credit ranges from 12 to 15 semester hour.
Students spend a calendar year at an internship site 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, and student progress in making use of the major's supervisory equivalency requirement. Comprehensive examinations are written in four areas: counseling theory, counseling psychology research, counseling psychology practice, and a minor area. It is strongly recommended that the student complete a comprehensive examination prior to the internship.
Students must show appropriate levels of educational balance and transferable skills and set within the American Psychological Association's Ethical Principles of Psychologists.

Educational Psychology

Master of Arts

This program provides an overview of educational psychology as an area of scholarly inquiry. It includes course work in human development, cognitive/learning, instruction, socialization/personality, vocational measurement, and research methods. The program does not prepare students for entry into a specific profession. Rather, it contributes to a broad understanding of the psychological principles on which education builds.

ADMISSION
Admission requirements are the same as those established by the Department of Psychology. The prerequisite of Psychology 100 is required.
ADMISSION
Admission to the program is required to begin by May 1 for fall semester, by October 1 for spring semester, and by March 1 for summer session. Admissions decisions are announced approximately one month after the application deadline.

REQUIREMENTS
Students may earn the degree with or without thesis. The M.A. without thesis requires a minimum of 32 semester hour of course work; with thesis, it requires a minimum of 36 semester hour of course work plus 2-4 semester hour of thesis credit. Both programs require 77343 Introduction to Statistical Methods or equivalent. Students who intend to apply for admission to the Ph.D. program should take the M.A. with thesis. Students also may enter the Office of the Dean with their advisor and complete the necessary paperwork. The Office of the Dean will store the student's information file and forward them to the appropriate school or department for continuing studies.

The record of every student admitted to the program is reviewed near the end of the second semester in residence. The program faculty considers course grades, evidence of critical and creative skills, and student motivation in making the review and provide for continued growth. Deficiencies identified in the review must be satisfied by the student. Students may be dropped from the program at the discretion of the faculty.

Students must complete a minimum of three hours of comprehensive examinations consisting of a 6-hour objective test and a 6-hour objective examination or project. The objective test covers fundamental concepts in educational psychology. Students who do not pass the examination or project, all of which focus on the student's area of specialization, may choose among the options to continue and meet with their advisors and M.A. committee.

Doctor of Philosophy

This doctoral program prepares graduates for a career in teaching and/or research as a basis for the application of psychological principles to educational problems. Such careers include professorship at the university and college levels and research or administrative positions in educational agencies or organizations, testing organizations, and public schools.

ADMISSION
An applicant seeking admission to the program must hold a M.A. or an M.S. degree in education or an accredited institution. Application whose M.A. or A.S. degree is directly relevant to educational psychology may be admitted conditionally. The student must complete the M.A. program before taking the Ph.D. comprehensive examinations.

The graduate grade-point average required for admission is the same as that established by the Graduate College. Applicants are expected to have a grade-point average of 3.00 or higher in both the verbal and quantitative sections of the Graduate Record Examination (GRE) General Test. Candidates may be interviewed conditionally on the basis of other evidence, such as high grade-point average, strong academic preparation, and highly supportive recommendations. Applications for fall semester admission must be received by February 1. Admission decisions are announced approximately one month after the application deadline.

The program is supported by the Department of Educational Psychology and encompasses four substantive areas—human development, cognitive/learning, motivation/socialization/personality, and individual differences. Students must complete, at least one course in each of the four areas. In addition, students must demonstrate substantial competence in at least one of these areas.

Additional requirements include 77220 Educational Research Methodology: a minimum of 6 s in comprehensive examinations taken in written and one graduate-level course in mathematics or statistics. Students are required to take the written part of these examinations. These examinations in all can be taken after the individual student's enrollment in the completed course work of a departmental committee of four members of the educational psychology faculty. Students are encouraged to take course work outside those normally taken in their area of interest. Candidates who earned an M.A. without thesis are required to take an oral examination in lieu of the thesis. This project must be approved by three members of the educational psychology faculty. The program is offered jointly with their advisors.

The record of each student admitted to the program is reviewed near the end of the second semester in residence. The program faculty considers course grades, evidence of critical and creative skills, and student motivation in making the review and provide for continued growth. Deficiencies identified in the review must be satisfied by the student. Students may be dropped from the program at the discretion of the faculty. After candidates have completed the major portion of their course work, they may take a comprehensive examination. Three options are available: preparation of a comprehensive review article, completion of an extended research article, or the completion of a nine-hour series of written examinations. Students choose among these options after consulting with their advisors and gaining the approval of their Ph.D. examining committee. The student may elect the last of these options.
these options, all of the size hours of examinations must be based on course week work in educational psychology offered by the division or on closely related course work offered by other University departments. A comprehensive examination in educational psychology program must be planned in conjunction with the adviser. The proposed examination schedule must be approved by the comprehensive examination committee.

School Psychology

Specialties in Education

The Ed.S. program provides course work and supervised field experience in the areas of education and for consultation, supervision, and research. Students are qualified for certification as school psychologists (State of Iowa Certification 40).

ADMISSION

Undergraduate preparation in psychology or education is desirable but alternative backgrounds are considered. Qualifications include an undergraduate grade-point average above 3.00, GRE General Test scores above 500 in the verbal and quantitative areas, strong scores of recommendation, and a demonstrated interest in working with children. Application and supporting materials must be submitted by February 1 for consideration for fall semester admission. Decisions are made by March 15. A limited number of students are admitted each year.

REQUIREMENTS

The program requires a minimum of 60 semester hours. Educational psychology, foundations, educational psychology, and research methods. Degree requirements include a written comprehensive examination and a research paper prepared in conjunction with course 7P:395 Educational Specialist Research (4 semester hours).

Doctor of Philosophy

The Ph.D. program in school psychology prepares students for positions in higher education, research, private and public agencies. Students are prepared for positions in schools and universities, and for consultation, supervision, and research, and administrative positions in public and private agencies.

ADMISSION

Preference is given to applicants with undergraduate majors in psychology or education, grade-point average above 3.00, and verbal and quantitative scores above 500 on the Graduate Record Examination (GRE) General Test. The faculty also encourages applications from students who have majored in other fields but have strong backgrounds in psychology, educational psychology, and related fields.

Applications must include three letters of recommendation and a personal statement of interest and goals. Complete application materials, including transcripts and test scores, must be received by February 1 for consideration for fall semester admission. Decisions are made by March 15. A maximum of ten students are admitted to the program each year.

REQUIREMENTS

The program requires a minimum of 90 semester hours. Course work is chosen from four areas: psychological foundations, psychological assessment, psychological research, and methods. The course of study is developed by the student and is monitored by the academic adviser. Students are required to write comprehensive examinations, carry on 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 7P:492 Ph.D. Thesis in Psychological and Quantitative Foundations.

Instructional Design and Technology

Master of Arts

The M.A. 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 consists of 35 semester hours of course work and may be completed with either a thesis or a project.

ADMISSION

Regular admission requires a minimum grade-point average of 3.00 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. If these requirements are not met but there is compelling evidence of superior ability, a conditional admission may be granted. Regardless of the admission status, all students are expected to attain a grade-point average of at least 3.00. Applicants are encouraged to include with the application a personal statement about their interest in the field. Applications for admission must be received by April 1 for fall semester, by October 1 for spring semester, and by March 1 for summer. Applications deadlines are announced approximately one month after the application deadlines.

REQUIREMENTS

The degree requires the following core courses (for approved programs):

7P:220 Instruction to Instructional Design and Technology
7P:105 Design and Production of Media for Instruction
7P:107 Psychological Bases of Instructional Design
7P:115 Introduction to Educational Measurement
7P:220 Advanced Instructional Design and Technology
7P:222 Instructional Strategies

Students plan the remainder of their study program in consultation with their adviser, choosing course work in one of the following emphasis areas: classroom instruction, computer applications, instructional development, training and development, media production, or school media. In addition, the student must complete 6 semester hours of course work in a cognate area outside the College of Education. Students who have not had previous experience in designing instruction or training are required to complete a practicum.

The program culminates with the completion of a final project and a six-hour set of comprehensive examinations based on courses in the cognate areas and emphasis areas. The examinations are divided into two or three parts as follows: general instructional design, 2.3 hours; area of emphasis, 2.3 hours; other, 0 or 2 hours.
Doctor of Philosophy
The Ph.D. program in instructional design and technology emphasizes the acquisition of knowledge and skills in the field of instructional design and technology. Students are encouraged to develop and refine their research interests, to engage in scholarly activities, and to contribute to the field of instructional design and technology. The program requires a minimum of 90 credit hours of coursework, including a dissertation. Students are expected to complete the program within five years. The program is structured to provide a solid foundation in the principles and practices of instructional design and technology, as well as opportunities for specialization in specific areas of interest. Students are required to complete a comprehensive examination prior to candidacy and to pass a final oral examination at the end of their program. The program also includes a focused research component, which is designed to foster the development of original research and scholarly work. The program is offered on a full-time and part-time basis, with the option of combining coursework and research experiences to meet individual needs. The program is housed in the College of Education, with faculty members from various departments offering a broad range of courses and research opportunities. The program has a strong record of success, with graduates going on to successful careers in academia, industry, and government. The program is designed to prepare students for leadership roles in the field of instructional design and technology. The program offers a variety of opportunities for professional development and networking, including conferences, workshops, and seminars. The program is accredited by the National Council for Accreditation of Teacher Education (NCATE) and the National Council for Accreditation of Teacher Education on Education Technology (NCATE-ETT). The program is committed to diversity and inclusion, and it seeks to attract and support a diverse student body. The program is committed to excellence in education and research, and it is dedicated to preparing students for successful careers in instructional design and technology.
TW-234 Interactive Video
3 s.h.

TW-235 Advanced Topics in Computer-Assisted Instruction
1-3 s.h.
Auditorium departmental research and development activities in computer-assisted instruction. Prerequisites: TW-135 and TW-137.

TW-243 Instructional Computer Simulations
3 s.h.
Thesis, design, development of educational simulations and games. Results in design: characteristics and effectiveness of instructional design. Seminar, evaluation simulation projects. Consent of instructor required. Prerequisites: TW-135.

TW-248 Cooperative Theatre and Practice
2-3 s.h.
Analysis of cooperative theory and practice. May be repeated. Consent of instructor required. Prerequisites: TW-135. May be repeated. TW-382.

TW-249 Survey of Research in Instructional Design and Technology
3 s.h.
Research topics for instructional designers, instructional technology, instructional design as report in instruction.

TW-251 Independent Study: Instructional Design for Managers
3 s.h.
Student selects area of their concern. Consent of instructor required.

TW-260 Organizational Development and Change
3 s.h.
Design development and change at your writing. Includes theory, research, applications. May be repeated. Same as TW-360.

TW-270 Procto in Instructional Design and Technology
3 s.h.
Supervised experience in applied setting.

TW-271 Internship in Instructional Design and Technology
3 s.h.
Supervised, supervised, and/or supervised experience in public schools, corporate, higher education, or industry. Consent of instructor required.

TW-281 Topical Seminar in Instructional Design and Technology
1-3 s.h.
May be repeated.

TW-291 A.L. Project in Instructional Design and Technology
3 s.h.
Projects for the A.L.

TW-301 M.A. Thesis in Instructional Design and Technology
3-6 s.h.
Consent of instructor required.

TW-311 Ph.D. Project in Instructional Design and Technology
3-6 s.h.
Consent of instructor required.

TW-313 Ph.D. Thesis in Instructional Design and Technology
3-6 s.h.
Consent of instructor required.

Working part-time at the Iowa Memorial Union's State Room
College of Engineering

Studying ship hydrodynamics at the Institute of Hydraulic Research

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Dean:
Associate dean: Paul D. Scheur
Assistant to the dean: Martin W. Boyd
Director, Center for Computer-Alided Design:
Edward J. Fink
Acting director, Institute of Biomedical Engineering: Konjo Kim
Director, Institute of Hydraulic Research:
Robert Eyring
Degrees: B.S.E., M.S., Ph.D.
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 aims of engineering is the creation of a new process, product, material, or system. This activity demands a high degree of creativity coupled with a full understanding of engineering fundamentals, good judgment, and a practical sense of economics.

The College of Engineering prepares young men and women for life or more of the real career opportunities in the engineering profession. Such opportunities include positions in design, production, development, research, management, and consulting. Engineers are employed in industrial organizations, government agencies, and private practice.

The College of Engineering has two major responsibilities. The first is to provide high-quality undergraduate engineering programs for maintaining contemporary engineering curricula and laboratories, as well as support services such as academic advising and engineering career counseling.

The second responsibility is to provide graduate programs and research facilities that lead to the Master of Science and Doctor of Philosophy degrees. Graduate education involves intensive research activities of a level and depth that result in original contributions to the literature at the Ph.D. level.

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, mechanical engineering, and mining engineering. A master's degree 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 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 as an M.B.A. degree in the College of Business Administration, 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 "Citizen and Regional Planning" in the College of Liberal Arts section of the Catalog). The combined degree programs usually may be completed in about five years. In addition, a minor in the College of Business Administration or a minor or minor 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.

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).

Undergraduate Programs

Academic Recognition

Honors Program

The College of Engineering Honors Program provides social recognition for outstanding undergraduate students who demonstrate exceptional accomplishment through research, directed independent study, teaching internships, or other approved technological enrichment experience. Honors students may participate in a college-wide honors seminar with faculty and other honors students. Juyor 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 experimental requirements leads to a B.S.E. with honors, which is recorded on the student's University academic record.

Freshman and sophomore students interested in honors are encouraged to participate in the University Honors Program, which provides access to on-campus courses offered by the Stambaugh 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 college group in the University Honors Program.

For more information or to apply, contact the Office of the Dean, College of Engineering.

Graduation with Honors

High scholastic achievement is certified in two ways: graduation with distinction based on grade point average and graduation with honors based on both grades and exceptional accomplishment. To be eligible for graduation with honors, students must meet academic requirements as determined by their major department and approved by the select honors committee and the dean of the honors program.

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 for this form of recognition, 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 (honors) program are eligible for this recognition regardless of the college in which they complete their residency requirements.

President's List

Students who earn a 4.00 grade-point average for two consecutive semesters including summer sessions on at least 12 or more semester hours of graded work, with no I or F grades standing on the current or past semester's record, are recognized by inclusion on the president's list.

Dean's List

Engineering students who achieve grade-point averages of 3.50 or above during a given semester on 12 or more semester hours of graded work, with no I or D grades standing on the current or past semester's record, are recognized by inclusion on the dean's list for that semester.

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 mathematics and general education requirements as described in the following sections. Candidates for the B.S.E. degree must be enrolled on 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 2.00 minimum cumulative grade-point average to satisfy the degree requirements as well as on all work undergraduate at The University of Iowa. In addition, candidates must have completed 224:35 Engineering Calculus I and 224:36 Engineering Calculus II, or their equivalents, with a grade of C- or better 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 semester in which the degree is to be conferred. Students who do not graduate on the date indicated in the application must file the appropriate application for a degree for the next applicable semester. Students do not need to be registered to apply for a degree.

Admission Requirements

To qualify for admission to the College of Engineering as a freshman, Iowa resident applicants must have achieved a 3.0 or better grade point average for each of the last two years of high school. Students must have completed four years of high school mathematics, which must include at least two years of algebra, one year of geometry, one-half year of trigonometry, and one-half year 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; completed the ACT standardized test with a composite standard score of 24 or above and a mathematics score of 24 or above (or equivalent SAT scores); and ranked in the upper one-half of their high school graduating class.

One-half year of a high school computer programming course is highly recommended. Additionally, transfer applicants must have completed the same high school requirements as residents and must have: completed the ACT standardized test with a composite score of 25 or above and a mathematics score of 25 or above (or equivalent SAT scores); and ranked in the upper 30 percent of their graduating class.

Transfer applicant must have: completed at least one semester of calculus or its equivalent and at least one semester of chemistry for engineering and science majors; and maintained at least a 2.25 cumulative grade point average.

Freshman and transfer applicants who do not meet the foreign language requirement may be admitted on a conditional basis for a maximum of four 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 in chemistry, must take a college course such as 22ML 018 Elementary Functions before enrolling in the first engineering course.

Courses taken at The University of Iowa to make up deficiencies do not count toward graduation. For more information about making up specific test deficiencies, consult with the academic advisor.

Pursuit of the minimum requirements for admission does not ensure admission to the College of Engineering. The college's academic advisors will not be responsible for the study and practice of engineering.

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 freshman year. They include Engineering I and II and Kinesics, which is a freshman 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 a logical manner so that students better understand the interrelationships and importance of each stem.

MATHEMATICS AND BASIC SCIENCES

The mathematics and basic science 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 determined that there must be 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 stems in order to bridge from fundamental principles to applications and to creative practice. The engineering science courses use the unifying principles learned in the mathematics and basic science courses to understand and predict the behavior of a broad range of complex systems. The courses include fluids, thermodynamics, and electrical circuits, as well as other engineering sciences relevant to each major.

ENGINEERING DESIGN

Engineering design, the third curriculum stem, is the process of deriving 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 are ethics, inclusions of realistic constraints such as economic factors, safety, reliability, aesthetics, and social impact. Because of the need to utilize a spectrum of basic and applied subject matter, which involves course work taken early in the curriculum, the design courses and activities usually begin in the junior year and end with ancapstone course or activity in the senior year.

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.

Freshman and Sophomore Years

Common to all students majoring in engineering, the first two years are devoted to the freshman and sophomore years. Most of the courses in the core engineering programs are scheduled in the freshman and sophomore years, along with a few programspecific courses. Hence, students generally may postpone making a decision about which engineering major to pursue or may change their engineering major through the freshman year with minimal loss of time or credit.

Exceptions to the common freshman year are biomedical engineering and chemical engineering, both of which require a second chemistry course during the second semester of the freshman year. By careful planning, underradied 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 the summer semester. The curriculum for each engineering program is listed in the sections devoted to each major in this section of the Catalog.

The following are freshman-year courses that are common to all engineering curricula:

First Semester

4-13 Principles of Chemistry I 3 a.h.
16-3 Accredited Freshmen 4 a.h.
22ML 018 Elementary Functions 4 a.h.
57-5 Engineering I 5 a.h.
Humanities or social science elective 3 a.h.
Total 18 a.h.

Second Semester

4-1 Principles of Chemistry II 3 a.h.
22ML 019 Elementary Lab 2 a.h.
22ML 028 Engineering Calculus II 4 a.h.
22ML 40 Matrix Algebra for Engineers 2 a.h.
22ML 17 Introduction to Physics I 4 a.h.
57-5 Engineering II 5 a.h.
Total 15 a.h.

The courses listed above are required of all students in engineering, 4-14 Principles of Chemistry II is recommended during the second semester for students who are biomedical or chemical engineering majors. Students in these majors usually pursue taking 22ML 40 Matrix Algebra for Engineers until the first semester of the sophomore year. Students pursuing a major in industrial engineering should review the sophomore requirements 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 freshmen qualify for the advanced math class,
10.3 Students who do not meet the eligibility requirements for 10.3 are required to complete the two-course sequence 10.1-10.2: Rhetoric, for a total of 8 semester hours. However, only 4 semester hours may be applied toward the degree requirement for the minor.

Credits earned for courses below the level of the beginning courses specified in each engineering curriculum appear on a student's grade report and permanent record, but generally are not used to satisfy any electives or required courses for an engineering degree. Examples of courses in this category besides 10.1-10.2 include mathematics courses 22M:1-22M:3, chemistry courses 4-5, and physics courses 20-20.

Forundertaking engineering majors who wish to postpone selecting an engineering major beyond the freshman year, a third semester of course common to all the majors could include the following.

**Third Semester**

22M:41 Differential Equations for Engineers 3 I.H.
251:18 Introductory Physics II 4 I.H.
277:18 Electricity and Magnetism 3 I.H.
277:8 Circuits 3 I.H.
277:9 Thermodynamics I 3 I.H.
Total 15 I.H.

Students pursuing three semesters of courses open in 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**

The goal of the humanities and social sciences requirements is to provide more effective preparation for professional responsibilities by integrating humanities and social sciences into the undergraduate engineering curriculum.

Students select, with their advisor’s approval, a minimum of 16 semester hours of humanities and social sciences electives with at least 5 in the humanities and at least 6 in the social sciences. In each case, the 6 semester-hour units include a junior-level course followed by an advanced-level course from the same department. Social science courses to the industrial engineering major are specified. Students considering a major in this program should consult “Industrial Engineering” in this section of the Catalog for their required social sciences courses.

Courses that are primarily mathematical or scientific in nature and those that are designed specifically to develop introductory language skills in speaking, writing, artistic, or music skills are not acceptable as social science or humanities electives even though they are offered through departments listed below.

Humanities electives may be selected from any of the following departments and schools:

- African-American World Studies
- American Studies
- Art History
- Classics
- Asian Languages and Literature
- Theater Arts
- English
- History
- Literature
- Science
- The Arts: Music
- Philosophy
- Religion
- Linguistics
- others

Approved by the curriculum committee of the College of Engineering.

Following an introductory-level course, students select a minimum of 3 semester hours of advanced (100-level) courses. Students must take sufficient depth of knowledge in an elected area of study. This advanced program work must be in the same department as the introductory coursework unless prior approval has been obtained from the curriculum committee of the College of Engineering. Language courses do not satisfy any of the humanities

Social science electives may be selected from the following departments and schools:

- Anthropology
- Urban and Regional Planning
- Economics
- Geography
- Political Science
- Psychology
- Sociology
- Journalism and Mass Communication
- Social Work, or others

Approved by the curriculum committee of the College of Engineering. To ensure an adequate depth of knowledge in a chosen area of study and following an introductory-level course, students select a minimum of 3 semester hours of advanced (100-level) course work. The advanced coursework must be in the same department as the introductory course until prior approval has been obtained from the curriculum committee of the College of Engineering.

**Combined Engineering/Liberal Arts Program**

Students may earn two University of Iowa bachelor of science degrees: a combined program in the College of Engineering and Liberal Arts. Successful candidates for this B.S. (Bachelor of Science in Engineering) by the College of Engineering and B.A. (Bachelor of Arts, B.S. (Bachelor of Science), B.A. (Bachelor of Arts), or B.M. (Bachelor of Music) by the College of Liberal Arts) program may be admitted. Students in this combined program usually are able to meet the combined 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 area of study selected in each college. Students who enter the combined degree program are assigned two advisors, 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. Interested students should schedule an appointment with the advisor to the dean of the College of Engineering. 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 Requirements and all the requirements for the major in the College of Liberal Arts. Liberal arts high school course or unit requirements for admission apply to combined degree programs.

It is crucial that students enroll in the proper engineering and engineering science units in their course of study to expedite the completion of their program. The specific engineering courses taken by students are governed by 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 156 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.

Combined College of Engineering/M.B.A. Program

An Accredited Professional Track (AP) program has been initiated by the College of Business Administration for superior engineering students who wish to begin their M.B.A. studies while finishing their undergraduate degree. Engineering students with interest and competence in the applied sciences and business administration may enhance their managerial career opportunities through the AP program.

This program allows superior undergraduate students to enroll in required M.B.A. coursework while still completing their undergraduate degree. Students may complete up to one-half of the M.B.A. curriculum as an AP student while still completing their undergraduate degree. With just one year of graduate study

To qualify for the AP program, students must have completed two years of engineering study, be in their junior year, and must be in the undergraduate program. Students must have completed two years of engineering study, be in their junior year, and must be in the undergraduate program. Students must have completed two years of engineering study, be in their junior year, and must be in the undergraduate program. Students must have completed two years of engineering study, be in their junior year, and must be in the undergraduate program. Students must have completed two years of engineering study, be in their junior year, and must be in the undergraduate program.

Admission to the AP program does not guarantee admission to the Graduate College. However, since the undergraduate admission process remains competitive, students are encouraged to apply. Students are also encouraged to apply to the graduate M.B.A. program upon application.

Students are required to work in cooperative education or summer internships but may petition to fulfill this requirement with previous work experience. This professional employment experience with private industry is considered to be an important part of the AP program and generally takes place the semester following the spring quarter of the engineering degree.

The M.B.A. curriculum is designed for upper-level students; no previous course work in business is required. The program consists of 30 semester hours of core courses, 12 semester hours of required electives, and 12 semester hours of elective credit. A total of 60 semester hours is required for the degree, of which 30 may be completed before the bachelor’s degree is awarded. Depending upon the engineering major selected, at least 9
At the heart of The University of Iowa planning program is an engineering degree that is comprehensive in its purpose to provide a rigorous foundation for the analysis of public and social issues. The core program is complemented by engineering students at the last two years of the undergraduate program. Special majors (tracks of concentration) are organized around public policy problem areas. They include transportation, housing, and community development, urban infrastructure, and economic development. Special majors (tracks of concentration) are organized around public policy problem areas. They include transportation, housing, and community development, urban infrastructure, and economic development.

Minors
While fulfilling degree requirements in engineering, undergraduate students also may require a minor in the College of Business Administration or a minor in any degree-granting department in approved programs in the College of Liberal Arts. A minor in an other college may be awarded by satisfying requirements established by the college offering the minor. A minor of the student is counted on the student’s permanent record.

Minors in Business Administration
Requirements for this minor are two economics courses (6E-101 and 6E-102), two accounting courses (6A-35 and 6A-35A), a marketing course (6M-101, a management course (6M-101), a finance course (6F-101), a computer course (6E-701), and a legal course (6E-47). In addition to these requirements, students must complete a calculus course, and a probability and statistics course.

Engineering majors may satisfy the mathematics and statistics requirements with courses 2241-35 and 2253-35. A 2.00 grade-point average is required to complete this course as required by the student is counted on the student’s permanent record.

Minors 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 senior level or above. Students must complete a 2.00 grade-point average in courses applicable to the minor. Courses to be counseled toward the minor may be taken pass/fail.
Academic Standards

Semester Load Limit
A normal academic load is about 16 semester hours of course work for a semester, 8 semester hours for a summer session. Students may register for up to 20 semester hours in one semester, or 9 semester hours in a summer session, without the permission of the advisor to the dean.

Classification of Students
Students in the College of Engineering are classified by the number of semester hours of academic credit applicable to a bachelor's degree in engineering. Freshmen—9 to 19 semester hours Sophomore—20 to 39 semester hours Junior—40 to 59 semester hours Senior—60 or more semester hours

Grading System
The college uses a letter grading system with a plus or minus to designate grades of performance between the letters. The numerical equivalents of the letter grades with the plus and minus options are as follows:

Grade (definition) | Grade points
--- | ---
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
F (failing) | 0

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. Grades of A- have a value of 4.33 in calculating grade-point averages for a student, but the averages displayed in University records will be truncated to the nearest integer.

Academic Probation and Good Standing
Students enrolled in the College of Engineering who fail to attain the following minimum semester and cumulative grade-point averages based on all work taken at The University of Iowa are placed or continued on academic probation:

Freshman—1.80 Sophomore—1.90 Junior—1.95 Senior—2.00

Students whose semester and cumulative grade-point averages equal or exceed these figures are considered to be in good standing in the college. Students are removed from probation or placed on academic probation only at the end of a semester. Students are not permitted to register without specific approval following two consecutive semesters of probation. Students who have not made satisfactory improvement in scholarship may be dismissed from the college; they may petition the assistant dean to be permitted to register for a second semester as a nonmatriculated student.

Withdrawing from Registration
Withdrawing from registration is permitted any time during the first four weeks of a regular semester, or during the final three or non-medical weeks of a twelve- or eighteen-week semester, respectively, and are not permitted to enroll for the semester immediately following without specific approval from the advisor to the dean.

Withdrawal of students who withdraw their registration at any time without good cause are considered to have been dismissed for poor scholarship. Withdrawal cards for students enrolled in the college are signed by the assistant to the dean upon recommendation by the student's advisor and department chair.

Pass/No-Pass Option
A maximum of two courses taken in the College of Liberal Arts and Business or School of Library and Information Sciences, and at least one business administration course, may be applied toward satisfaction of the humanities and social sciences requirements. Students who wish to take such courses to liberal arts or business administration pass/no-pass must meet the conditions and follow the procedures specified by those colleges. The pass/no-pass option may not be used for four courses taken to satisfy the economic requirement.

Students enrolled in courses taught in the College of Engineering may choose to be graded on a pass/no-pass basis under the following conditions:

The signatures of the advisor and instructor must be obtained on the proper form, and the form must be approved by the dean of the regular student within the time period established by University policy. The mark of P (pass) is awarded when the final course grade earned is C+ or above; the mark of F (no pass) is given for grades of D or below. Marks of P and F are not used in computing the grade-point average, and the mark of N does not count as ever having been attempted. No course work taken in the College of Engineering on a pass/no-pass option may be used to meet requirements for any engineering degree.

Second-Grade-Only Option
Students may elect to repeat a course with only the new grade being counted in their grade-point average. This option is elected only prior to completion of a course for which the student counts a grade. 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 this option on a petition basis. For example, students who transfer no more than 42 semester hours of acceptable engineering course work may use this option for a maximum of three courses, while students who transfer between 43 and 64 semester hours of credit may use this option for no more than two courses, and students who transfer 65 or more semester hours may use this option for one 6-credit course. Students who...
Credit by Examination

Students who have acquired knowledge in engineering subject matter not covered by their liberal arts course registration may be granted the opportunity to obtain credit toward graduation by examination. For example, credit for an engineering core course may be earned by achieving a satisfactory test score on a comprehensive exam similar to a final exam for that course. Conditions and limitations of these policies are established by the faculty of the College of Engineering. Students who want to apply for such an examination should contact the assistant to the dean.

Credit by Validation

Students with course credits obtained at an accredited institution may request validation of the credit up to a maximum of 12 semester hours. Validation by validation may be granted after students have completed at least 12 semester hours of course work at the University of Iowa that includes appropriate courses similar to those to be validated. Contact the assistant to the dean concerning the validation of credits.

Credit from Other Colleges

Course requirements in engineering may be satisfied by credits earned from accredited colleges. Transfer of credit is allowed from selected accredited engineering programs. All courses must be approved by the assistant to the dean prior to registration. Courses approved by the assistant to the dean must meet the following criteria:

1. The course satisfies a requirement in the engineering program of the University of Iowa.
2. The course must be approved by the assistant to the dean.
3. The course must be offered in an accredited engineering program.

Students wishing to transfer credit from another institution must contact the assistant to the dean for approval. Approval will be granted if the course is equivalent to a course in the engineering program at the University of Iowa. The course must be offered in an accredited engineering program. The course must be approved by the assistant to the dean for credit.

Auditing Courses

Students in the College of Engineering may register for a course for zero credit (with the written permission of the instructor) in order to attend the course. Courses completed with a grade of B or better will be recorded in the student’s permanent file.

Registration for a course as an auditor must be completed prior to the start of the semester. The student must submit a completed registration form to the assistant to the dean. The registration form must be completed and approved by the assistant to the dean prior to the start of the semester. The student must be a registered student at the University of Iowa with a minimum cumulative grade point average of 2.0. The student must complete all registration requirements as outlined in the University of Iowa Office of Registration and Records.

Students planning to attend a two-year or four-year institution before returning to the College of Engineering are well advised to discuss the planned transfer with officials at both institutions before evaluating a transfer program. The College of Engineering does not recommend transfer courses at junior or senior colleges and some four-year colleges. The courses listed are available by contacting the assistant to the dean. Students are informed in the College of Engineering that all course work must be taken at institutions that are accredited by the assistant to the dean. For credit to be applied toward engineering degree requirements, the policy of Iowa State Board of Regents, a student who has earned 64 semester hours of college credit from all sources may transfer no more credit from a two-year college toward meeting the 128 semester hours required for graduation. If a student has earned more than 64 semester hours of credit from a two-year college, the college and grades are used in computing the grade-point average and may be used to satisfy course requirements even though they may not be counted toward the total hours needed for graduation.
Graduate Programs

The general rules and regulations for the graduate programs are established by the Graduate College. However, the specific stipulation 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 90,000 books and 10,000 periodicals. It is equipped with CD-ROM stations and videocassette players and TV-monitored study spaces for 100 library users.

Iowa Computer-Aided Engineering Network (ICAEN)

This facility provides primary support for instructional computing in the College of Engineering. ICAEN consists of approximately 100 Hewlett-Packard computer workstations. Each of these is a powerful computer linked with a high-resolution video display for graphics applications. These workstations are set together by a high-speed network, allowing all stations to share common data, programs, and peripherals.

The workstations are augmented by a large number of Apple Macintosh computers that can be used for instruction in the workstation network or in the computer Center facilities, or to be used across national computer networks. A variety of printers, plotters, and other specialized devices are available through the ICAEN system.

Software supported by ICAEN includes several programming languages, graphics and word processing facilities, and electronic mail. Also available are a number of contemporary software packages for computer-aided engineering, including two- and three-dimensional drafting, and design, data analysis, mathematics, evaluation, surface and solid modeling, finite element modeling and analysis, computer-aided manufacturing, system simulation, control system analysis, and other design.

Graduate Programs

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Iowa Institute of Hydraulic Research

The Iowa Institute of Hydraulic Research (IIHR) has been widely acknowledged for many years to be an international leader in numerous areas of hydraulic engineering and fluid mechanics. Its research activities began in 1919 and in 1951, it was organized formally to coordinate capabilities, facilities, and resources available at the University for solving practical problems in engineering hydraulics and hydrology. It has broadened its scope of activities to solve fluid mechanics problems.

Active programs of basic and applied engineering research are conducted at IIHR in five modern, well-equipped laboratories with total floor space exceeding 72,000 square feet. Programs currently being pursued include:

- Advanced transport mechanisms; river engineering; deposition processes;
- Ice/icecutter engineering; hydraulic structures;
- Water resources; processed; computational hydraulics and fluid mechanics; ship dynamics; boundary layers (with emphasis on bedload and three-dimensional boundary layers); turbulence and turbulent shear flows; and water-quality dynamics.

High-level involvement of graduate students is a hallmark of most IIHR projects. Because it is a unit of the College of Engineering, and because it is heavily involved in fluid engineering for industry and in fundamental research programs, IIHR provides unique opportunities for graduate research and engineering experience to advanced-degree students and postdoctoral research as part of their educational programs.

Center for Computer-Aided Design

The Center for Computer-Aided Design was founded in 1982 to enhance research and development of computer-aided design methods using modern computer technology and simulation-based tools. In 1987, the Industry/University Cooperative Research Center for Simulation and Design Optimization of Mechanical Systems sponsored by the National Science Foundation, was formed within the center. It is currently supported by some 20 industrial members. To advance research in virtual engineering environments, the center established the Iowa Driving Simulator in 1990. As a result of the center's groundbreaking research and commitment to state-of-the-art simulation technology, the U.S. Department of Transportation in 1992 selected the center to be the host site for the National Advanced Driving Simulator (NADS).

The center's research program focuses on mechanical system dynamic analysis and design, control system analysis, structural optimization, dynamic systems degradation, and operation in the loop simulators. A research facility, including an Altair FX/8 supercomputer, an Altair FX/8 minicomputer, a heterogeneous network of workstations ranging from desktop systems to high-performance multi-processor workstations, and other related computer equipment, supports the faculty, staff, and students associated with the center. Center researchers also have access to the Iowa Driving Simulator. The most advanced facility of its kind in the United States, the simulator is composed of an Evans and Sutherland PS/60 Image Generator and could accommodate a Harris Nightview 4604 color television computer, and four cameras. The center's Altair FX/8 computer. The center also makes the simulator available to researchers from other Department of Transportation and non-DOT researchers.

Faculty, staff, and students participating in the center lead the nation in research on operator-in-the-loop simulation and mechanical systems design and analysis. The center distributes the technology and software developed by its research to government and industrial practitioners for use in a broad range of mechanical and structural design activities.

Iowa Institute of Biomedical Engineering

The Iowa Institute of Biomedical Engineering was founded primarily to maximize the economic benefits that Iowa can realize from the University's recognized strengths in the interdisciplinary areas of biomedical engineering and science. The center consolidates the development of innovative biomedical and health care products from research and development, scientists pursuing for new products and services, and transfers these innovations to Iowa industries.

The institute also supports Iowa industries improve productivity through effective utilization of new biomedical engineering technologies. It has established the Institute of Cooperative Research and has provided research information on the development of specialized vehicles for persons with disabilities and materials developed to eliminate the severity of industrial injuries caused by traumatic wounds. Graduates and undergraduate students participate in interdisciplinary research and development and are encouraged and supported by the faculty to identify exciting opportunities to create and design new products and services for industry, government, and other universities.

Course Numbering System

The title of each course offered by the College of Engineering is preceded by a two-digit prefix and a three-digit suffix separated by a colon. The first digit of the prefix is 4, which identifies the course as one offered by the College of Engineering. The second digit of the prefix identifies the branch of engineering within which the course is offered, as follows:

1. Biomedical engineering
2. Chemical and bio-chemical engineering
3. Civil and environmental engineering
4. Electrical and computer engineering
5. Industrial engineering
6. Engineering core
7. Mechanical engineering
The two- or three-digit suffix of a course number identifies the level and type of course.

Generally the suffix number below 100 designates courses primarily for undergraduates, numbers 100 in 199 designates courses for undergraduates and graduates, and numbers 200 and above designates courses primarily for graduates. The table below provides more detailed listing of course numbers and the information they convey about level and type of course.

1-6: Freshman core courses
7-19: Sophomore core courses
20-29: Junior core courses
30-49: Required courses in undergraduate programs
50-99: Undergraduate professional program seminars
60-97: Contemporary topics courses for undergraduates
98-: Individual investigation courses for undergraduates
100-109: Courses for which little or no engineering, science, or mathematics background is required
110-169: Undergraduate elective or lower level graduate course
170-199: Electives courses for nonmajors
200-204: Seminars for undergraduates and graduates
195-207: Contemporary topics courses for undergraduates and graduates
198-: Individual investigation for graduates
199-: M.S. thesis research
210-289: Upper level graduate courses
291-294: Seminars for graduates
295-297: Contemporary topics courses for graduates
299-: Ph.D. thesis research.

The courses offered by each department are listed in the department's section by discipline area, starting with the lower level courses 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 all universities. 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. Undergraduate nonmajors 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 considered necessary to satisfactorily undertake the course work.

**Engineering 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 titled "Undergraduate Curriculum." Course descriptions follow for those courses that make up 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 nonmajors unless special permission is obtained from the assistant to the dean.

790-770 Cooperative Education Engineering Assignments 6-8 h.

For selected and underemployed engineering majors, participating in the Cooperative Education Program, may register in the course during week-long appointment. Additional to Cooperative Education Program and approval of dean.

751 Engineering Seminar 6-8 h.

May be repeated. Admission to the College of Engineering. Graduates program and approval of dean.

732.2 Preventing Internship Engineering 6-8 h.

Students work with a professor teaching a course already recognized for the student: students learn how to design and grade art projects, people for art and fine crafts, find off campus housing, learn how to read and respond to art and fine crafts, find off campus housing, learn how to read and respond to art and fine crafts, find off campus housing, learn how to read and respond to art and fine crafts, find off campus housing.

73-1 Engineering 3 h., 5 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-2 Engineering 2 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-3 Engineering 3 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-4 Engineering 2 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-5 Engineering 3 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-6 Engineering 2 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-7 Engineering 3 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-8 Engineering 2 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-9 Engineering 3 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-10 Engineering 2 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-11 Engineering 3 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-12 Engineering 2 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-13 Engineering 3 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-14 Engineering 2 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-15 Engineering 3 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-16 Engineering 2 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-17 Engineering 3 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-18 Engineering 2 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-19 Engineering 3 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.

73-20 Engineering 2 h.

Engineering courses covering general and specialized subjects. Some courses may be approved for credit as electives. Credit will be awarded through departmental examination. Course numbers: 200-297.
Students who complete this program may pursue career opportunities in industry (the design and development of biomedical instrumentation, diagnostic jobs, life-support systems, prosthetic and orthotic devices, and medical software systems), in government (Veteran's Affairs, National Institutes of Health, Environmental Protection Agency, Food and Drug Administration), or they may elect to continue their formal education in the engineering, medical, or legal professions. Several engineering college faculty members have joint appointments in the College of Medicine. Both biomedical engineering undergraduates and graduate 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 carefully designed 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 selected to satisfy the humanities and social science requirements of the College of Engineering.

FRESHMAN YEAR

First Semester

41:15 Principles of Chemistry I 4 s.h.
101:5 Accelerated Introductory Biology 4 s.h.
54:03 Biometrics I (or) 54:10 Principles of Electronic Instrumentation 4 s.h.
57:5 Engineering I 3 s.h.
51:90 BM&E Freshman/Sophomore Forum 0 s.h.
* Humanities or social science elective 3 s.h.
Total 17 s.h.

Second Semester

4:14 Principles of Chemistry II 3 s.h.
4:16 Principles of Chemistry Lab I 2 s.h.
22:49 Introduction to Biophysics I 5 s.h.
29:17 Introduction to Biophysics I 4 s.h.
57:6 Engineering I 3 s.h.
51:90 BM&E Freshman/Sophomore Forum 0 s.h.
Total 16 s.h.

SOHOPMORE YEAR

First Semester

22:44-44 Linear Algebra for Engineers 2 s.h.
22:44 Differential Equations for Engineers 4 s.h.
29:18 Introductory Physics II 4 s.h.
21:3 Principles of Animal Biology 3 s.h.
57:7 Statistics 2 s.h.
51:90 BM&E Freshman/Sophomore Forum 0 s.h.
Total 16 s.h.

Second Semester

22:44-44 Vector Calculus for Engineers 3 s.h.
57:9 Chemical and Physical Engineering 2 s.h.
51:90 BM&E Freshman/Sophomore Forum 0 s.h.
Total 16 s.h.

JUNIOR YEAR

First Semester

57:17 Computers in Engineering 3 s.h.
57:18 Principles of Electronic Instrumentation 3 s.h.
51:40 Biological Systems Analysis I 3 s.h.
Engineering science core elective (see below) 3 s.h.
"Engineering Science Core Electives," below 3 s.h.
* Humanities or social science elective 3 s.h.
51:91 Professional Seminar: Biomedical Engineering 0 s.h.
Total 16 s.h.

Second Semester

22:55-55 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
Engineering science elective (see below) 3 s.h.
57:21 Principles of Design I 3 s.h.
51:70 Biomechanics I 4 s.h.
51:80 Biomedical Measurements I 3 s.h.
51:91 Professional Seminar: Biomedical Engineering 0 s.h.
Total 16 s.h.

SOPHOMORE YEAR

First Semester

51:90 BM&E Freshman/Sophomore Forum 0 s.h.
Total 0 s.h.

Engineering Science Core Electives

One of these:

57:12 Linear Systems Analysis 3 s.h.
51:90 Microelectronic Devices 3 s.h.
51:90 Mechanisms of Deformable Bodies 3 s.h.
51:80 Mechanics of Fluids and Transfer Processes 4 s.h.

Engineering Science Electives

One of these:

52:80 Engineering Biological Science 3 s.h.
57:12 Linear Systems Analysis 3 s.h.
57:15 Materials Science 3 s.h.
51:80 Mechanics of Deformable Bodies 3 s.h.
51:80 Mechanics of Fluids and Transfer Processes 4 s.h.
A 100-level, 519-level course or another engineering science course approved by the advisor

Biomedical Engineering Electives

A 100-level 14-week course must be chosen with at least one course (3 semester hours) from the biomedical engineering design electives and one 519-level course (3 semester hours) from the biomedical engineering science electives. The lists are as follows:

BIOMEDICAL ENGINEERING DESIGN ELECTIVES

55:35 Introduction to Digital Design (or equivalent) 3 s.h.
59:88 Principles of Electrical Engineering Design 3 s.h.
57:32 Principles of Design II (or equivalent) 3 s.h.

BIOMEDICAL ENGINEERING SCIENCE ELECTIVES

51:140 Biological Systems Analysis I 3 s.h.
51:145 Biomedical Computer Systems 3 s.h.
51:150 Biomechanics 3 s.h.
51:153 Biomechanics of Orthopaedic Devices 3 s.h.
51:154 Biomechanics of Aging 3 s.h.
51:155 Cardiovascular Biomechanics 3 s.h.
51:160 Bioinstrumental Processes 3 s.h.
51:171 Intermediate Biostatistics 3 s.h.
51:172 Methods of Determinants 3 s.h.
51:173 Matrices as Biomaterials 3 s.h.
51:174 Ceramics and Glasses as Biomaterials 3 s.h.
51:176 Computer Materials 3 s.h.
51:180 Biomedical Measurements II 3 s.h.
51:185 Physics and Analysis of Biomedical Images I 3 s.h.

OTHER ACCEPTABLE BIOMEDICAL ENGINEERING ELECTIVES

51:15 Intermediate Mechanics of Deformable Bodies 3 s.h.
52:33 Biocomputer Techniques in Engineering 3 s.h.
55:55 Introduction to Software Design 3 s.h.
53:42 Image Systems 3 s.h.
51:140 Image Processing 3 s.h.
51:156 Computer-Based Control Systems 3 s.h.
51:40 Thermodynamics II 3 s.h.
51:45 Heat Transfer 3 s.h.
51:46 Intermediate Heat Transfer 3 s.h.
Graduate Programs

The goal of graduate study at both the M.S. 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 path 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 sounds academic practice. Department faculty members have teaching and research expertise in areas related to biomechanics, cardiovascular and fluid biomechanics, biometrics, biomaterials, bioinstrumentation, bioimaging, 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 systems. M.S. students who want a more general program may combine emphases, while those who want some specialization in a particular field may accommodate these preferences through the contribution of nonelective courses and appropriate electives from other departments of the College of Engineering and the University. Ph.D. programs may center on any of the previously described areas through the choice of appropriate course work and research topics.

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 non-thesis program; the latter must include at least 20 semester hours of 600-level courses. Students who choose the thesis program may count between 6 and 9 semester hours of credit for thesis research and write toward satisfying the 30-hour minimum. Either program may be pursued on a part-time or full-time basis.

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 in 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.
Doctor of Philosophy

The doctoral program, including acceptable master's credit, requires a minimum of 72 semester hours of graduate work. Of these 72 hours, 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. Students entering with an M.S. at least 30 semester hours of formal course work must be completed prior to the M.S., and at least 12 semester hours must be research seminar credits. Based on research progress, examination results, or other measures, the student's graduate committee may require additional formal course work in order to strengthen areas of perceived weakness.

Admissions to the Ph.D. program is conditional until student successfully completes 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 3.25 minimum grade-point average or all graduate work done at The University of Iowa. Upon completion of the course work specified in the plan of study, with the grade-point average stipulated above, and upon the student's recommendation, students are admitted to the comprehensive examination by their committees. Satisfactory completion of these examinations, students usually have only to complete and defend their dissertation in the final examination. Requirements for the Ph.D. generally can be completed in about three years beyond the master's degree.

Admissions and Financial Assistance

Students who have earned a baccalaureate or postgraduate degree in an engineering curriculum or a curriculum in the mathematical or physical sciences, with a 3.00 minimum grade-point average, 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 the program in biomedical engineering. Students may, under exceptional circumstances, be considered for conditional admission with a lower grade-point average and a General Test score. Students on conditional status must achieve regular status within 8 semester hours of initial registration by achieving a 3.00 minimum grade-point average at The University of Iowa. They may be considered for admission by the following limitations. Students who do not meet these requirements are subject to dismissal.

Refer to the Graduate Catalog for financial assistance opportunities. Previous graduate study grade-point average, and other factors also may be considered in making admission decisions. 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: Biomechanics I and Biomedical Materials I. The Biomechanics Laboratory is equipped to test mechanical and thermal properties of biomedical and tissue scaffolds of bone tissue and for the analysis of porosity and permeability. This laboratory also is used for the following classes: Biomechanics, 21:173; Medical 21:174; and 21:174Ceramics and Glasses as Biomaterials.

The Biomedical Materials Laboratory is equipped for measuring thermal and optical properties of biomedical and tissue scaffolds of bone tissue and for the analysis of porosity and permeability. This laboratory also is used for the following classes: Biomechanics, 21:173; Medical 21:174; and 21:174Ceramics and Glasses as Biomaterials.

Research Facilities and Laboratories

APPLIED MECHANICS LABORATORY

The Applied Mechanics Laboratory is equipped to study the biomechanics of small bone scaffolds under complex dynamic loading conditions.

BIOMECHANICAL LABORATORY

The Biomechanics Laboratory is equipped to test the mechanical properties of biomaterials and with sections of tissue and bone for in vivo and in vitro testing.

BIOMATERIALS LABORATORY

The Biomechanics Laboratory is equipped to test the mechanical properties of biomaterials, with sections of tissue and bone for in vivo and in vitro testing.

HOMOGENEOUS LABORATORY

The Biomechanics Laboratory is equipped to test the mechanical properties of bone tissue and for the analysis of porosity and permeability. This laboratory also is used for the following classes: Biomechanics, 21:173; Medical 21:174; and 21:174Ceramics and Glasses as Biomaterials.

IMAGING LABORATORY

The Biometric Laboratory is equipped with a real-time imaging system for the analysis of porosity and permeability. This laboratory also is used for the following classes: Biomechanics, 21:173; Medical 21:174; and 21:174Ceramics and Glasses as Biomaterials.

IMAGING LABORATORY I and II

The Biometric Laboratory is equipped to test the biomechanics of bone and soft tissue scaffolds, lymph node scaffolds, and the effect of vibration on the spine.

BIOMEDICAL IMAGE PROCESSING AND COMPUTING LABORATORY

This laboratory has an imaging-processing system used to digitize and analyze anatomical slides, photographs, X-rays, and CT scan images.

BIOENGINEERING LABORATORY

The Biomedical Engineering Laboratory is equipped to conduct physiological experiments on the cardiovascular and respiratory systems.

Courses

Special

51:000 Graduate Education Training Assignment: Biomedical Engineering

51:100 (3) Biomedical Engineering (PhD)

51:200 (3) Biomedical Engineering (PhD)

51:300 (3) Biomedical Engineering (PhD)

51:400 (3) Biomedical Engineering (PhD)

51:500 (3) Biomedical Engineering (PhD)

51:600 (3) Biomedical Engineering (PhD)

51:700 (3) Biomedical Engineering (PhD)

51:800 (3) Biomedical Engineering (PhD)

51:900 (3) Biomedical Engineering (PhD)

51:1000 (3) Biomedical Engineering (PhD)

51:2000 (3) Biomedical Engineering (PhD)

51:3000 (3) Biomedical Engineering (PhD)

51:4000 (3) Biomedical Engineering (PhD)

51:5000 (3) Biomedical Engineering (PhD)

51:6000 (3) Biomedical Engineering (PhD)

51:7000 (3) Biomedical Engineering (PhD)

51:8000 (3) Biomedical Engineering (PhD)

51:9000 (3) Biomedical Engineering (PhD)

51:10000 (3) Biomedical Engineering (PhD)

51:20000 (3) Biomedical Engineering (PhD)

51:30000 (3) Biomedical Engineering (PhD)

51:40000 (3) Biomedical Engineering (PhD)

51:50000 (3) Biomedical Engineering (PhD)

51:60000 (3) Biomedical Engineering (PhD)

51:70000 (3) Biomedical Engineering (PhD)

51:80000 (3) Biomedical Engineering (PhD)

51:90000 (3) Biomedical Engineering (PhD)

51:100000 (3) Biomedical Engineering (PhD)

51:200000 (3) Biomedical Engineering (PhD)

51:300000 (3) Biomedical Engineering (PhD)

51:400000 (3) Biomedical Engineering (PhD)

51:500000 (3) Biomedical Engineering (PhD)

51:600000 (3) Biomedical Engineering (PhD)

51:700000 (3) Biomedical Engineering (PhD)

51:800000 (3) Biomedical Engineering (PhD)

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51:10000000 (3) Biomedical Engineering (PhD)
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 transport phenomena, reactor design, transfer operations, thermodynamics, fluid mechanics, and chemical reaction engineering. The curriculum is designed to provide a strong foundation in chemical engineering. Courses in these disciplines, together with the common engineering core courses, provide a strong foundation.

**Curriculum**

*The humanities and social science electives must be selected to satisfy the humanities and social science requirements of the College of Engineering.*

**RED JUNE**

**First Semester**
- 16:13 Acoustical Engineering 4 s.h.
- 14:15 Principles of Chemistry I 3 s.h.
- 23:30-35 Engineering Calculus I 4 s.h.
- 57:3 Physics I 3 s.h.
- *Humanities or social science elective* 3 s.h.

**Total** 17 s.h.

**Second Semester**
- 29:15 Inorganic Chemistry I 4 s.h.
- 41:14 Principles of Chemistry II 3 s.h.
- 41:15 Principles of Chemistry Lab I 2 s.h.
- 52:15 Engineering Calculus II 4 s.h.
- 57:3 Physics II 3 s.h.

**Total** 16 s.h.

**Sophomore Year**

**First Semester**
- 41:13 Organic Chemistry I 3 s.h.
- 23:32-34 Manufacturing Processes I 2 s.h.
- 23:41-44 Differential Equations I 3 s.h.
- 29:18 Introductory Physics II 4 s.h.
- 57:7 Matlab 2 s.h.
- *Humanities or social science elective* 3 s.h.

**Total** 17 s.h.

**Second Semester**
- 41:12 Organic Chemistry II or science elective 3 s.h.
- 41:12 Organic Chemistry Laboratory 2 s.h.
- 22:42/72 Elements of Numerical Analysis 3 s.h.
- 52:4 Process Calculations 3 s.h.
- 57:8 Electrical Circuits 3 s.h.

**Total** 15 s.h.

**Junior Year**

**First Semester**
- 41:13 Physical Chemistry I 3 s.h.
- 52:42 Momentum Transport 3 s.h.
- 52:43 Chemical Engineering Thermodynamics 3 s.h.
- 57:15 Materials Science 3 s.h.
- 52:80 Engineering Biological Sciences 3 s.h.
- 52:91 Professional Seminar: Chemical Engineering 0 s.h.

**Total** 15 s.h.

**Second Semester**
- 41:12 Physical Chemistry II or science elective 3 s.h.
- 41:15 Physical Chemistry Laboratory 2 s.h.
- 52:44 Mass Transfer Operations 3 s.h.
- 52:46 Heat Transfer 3 s.h.
- 52:91 Professional Seminar: Chemical Engineering 0 s.h.
- 57:21 Principles of Design I 3 s.h.

**Total** 16 s.h.

**Senior Year**

**First Semester**
- 52:41-45 Chemical Reaction Kinetics 3 s.h.
- 52:42 Process Dynamics and Control in Design 3 s.h.
- 52:47 Unit Operations Laboratory I 2 s.h.
- 57:14 Engineering Economy 3 s.h.
- *Humanities or social science elective* 3 s.h.
- *Technical elective* 3 s.h.
- 52:91 Professional Seminar: Chemical Engineering 0 s.h.

**Total** 17 s.h.

**Second Semester**
- 52:48 Unit Operations Laboratory II 2 s.h.
- 52:48 Chemical Engineering Process Design 3 s.h.
- *Humanities and social science elective* 3 s.h.
- *Technical elective* 3 s.h.
- 52:91 Professional Seminar: Chemical Engineering 0 s.h.

**Total** 16 s.h.

**Graduate Programs**

The Department of Chemical and Biomedical 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 thus 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. A thesis is required for each degree.

All candidates in advanced degree programs are required to attend faculty meetings in teaching and research as part of their graduate training.

**Research**

Current research strengths of the Department of Chemical and Biomedical Engineering include the following: catalysis, reactor design, global and regional environmental research, separation and bioprocessing processes, biochemical engineering and applied biocatalysis, and particular nuclear processing sciences.

**Catalyst and Reactor Design**

In the chemical and biological area, current research centers on the study of catalytic, heterogentic, and homogeneic reactions. Heterogenics, gas-solid reactions, modeling and analysis of heterogeneous reactions, and design of novel reactor-separators are under development for fuels and chemicals from renewable resources.

**Global and Regional Environmental Research**

Interactions of the environment in which we live and work is a major problem facing today's engineers. The Department of Chemical and Biomedical Engineering has an active research program on the environmental areas of atmospheric air pollution, indoor air pollution, and hazardous waste. Particular emphasis is placed on the chemistry of gases and water, local, regional, and global air pollution problems. Research in this area includes transport, reaction, and deactivation studies. Analysis is an interdisciplinary area of chemical engineering and environment research at the Center for Global and Regional Environmental Research.

**Separation and Bioprocessing**

Research at the University of Denver is focused on better understanding and development of new techniques in the area of separation and bioprocessing processes. In particular, membranes technology, a new technique in ultratapology, the microfiltration technology is being used in the separation of water for membrane bioreactors. In addition, molecule chromatographic separation of water is being used in the separation of water for membrane bioreactors. A new device is being investigated for preparative chromatographic separations. Electrophoretic, electrophoretic nucleic acids for gene separation, and enzymatic or rector separations are also being investigated.

**Biomedical Engineering and Applied Biotechnology**

Biomedical engineering involves the biological and medical disciplines that are related to the application of engineering principles to solve problems in medicine, biology, and other life sciences. The department is active in fundamental research in biotechnological processes, including enzymes in organic synthesis, enzymes in biotechnology, and biotechnology-based membrane separations. The department also is engaged in the study of up-
insect cell cultures for the production of recombinant proteins. The application of genomics with traditional biotechnology engineering has led to an interdisciplinary area bringing together engineering disciplines.

The Departments of Chemistry, Biological Sciences, and Microbiology and the College of Pharmacy.

Particle Material Processing Sciences

Theoretical and experimental studies in morphological analysis of particulate materials are being conducted. Morphological analysis is concerned with the measurement of particle size, shape, textures, chemical properties, and physical properties. These methods are applied to particulate formation processes and studies of particle and bulk behavior. Examples include wear debris analysis, crystallization, and precipitation (homogeneous process), and dust electrostatics and containment of particulate gaseous behavior.

Master of Science

A thesis and a minimum of 30 semester hours of graduate credit are required, including at least 24 semester hours completed in residence at The University of Iowa. Work completed in the Summer and Evening Class Program as residence credit may not exceed 6 semester hours, but 6 semester hours may be completed in residence at another recognized graduate college or through the Guided Correspondence Study Program at The University of Iowa.

The minimum course work requirement is 24 semester hour lecture courses. The remainder of the 30 semester hours is devoted to the master's thesis. The M.S. students are expected to maintain a 3.00 minimum grade-point average. M.S. candidates must defend their thesis at a final oral examination. Although it is possible to obtain an M.S. in the year, many students complete the requirements in three or four semesters.

Doctor of Philosophy

The Ph.D. is granted primarily on the basis of dissertation research and results, in addition to the number of semester hours of credit. However, candidates - usually by July 1 of the following academic years of residence, at 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 transportation processes, a course in reaction engineering, and a thermodynamics course or two related courses (e.g., 218 Biochemical Engineering), and at least two additional courses. All candidates must complete a minimum of 42 semester hours of credit.

Financial Aid

A number of fellowships, assistantships, and scholarships are available to graduate students who qualify. These awards are on a competitive basis.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core

MATERIALS SCIENCE LABORATORY

This laboratory is equipped with optical microscopes and facilities for materials characterization in a focused environment. Mechanical testing instruments and hardness testing machines are available. Heat treatment and annealing furnaces are available in a nearby laboratory. Teaching labs include metalurgy specimen kits, collection in LIF kits, and crystallography packages.

Required Course Laboratories

UNIT OPERATIONS LABORATORY

This is primarily an instructional laboratory for senior undergraduate students. It involves experiments in transport phenomena, heat transfer, fluid flow, chemical engineering unit operations, and reaction kinetics and catalysis. The laboratory includes safety equipment, such as a demonstration column filled with a microprocessor, pipet filling equipment, steel and tube heat exchanger, jacked kettles, pocket cylinders for gas absorption, plate and tube filter press, and agitated reactors. Other equipment includes stirred tank reactors, packed bed reactors, gas chromatograph, and a variety of instrumentation for measuring flow, pressure, temperature, and weight. Equipment in emerging areas of chemical engineering has recently been added, including a fully instrumented microfluidic flow, membrane separation, and polymer extrusion. A small shop is also 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 unique to the senior process control course. The laboratory consists of a computer-controlled shell and tube heat exchanger, a stirred tank reactor, and a three-tank flow process. Additional laboratories include instruction in the use of on-line controllers.

The computer control laboratory is set up to provide an environment of learning experience with the same equipment, so that analogs and better insight into the control process can be obtained. The laboratory consists of a computer monitor, a computer keyboard, a computer mouse, a computer display, and a computer printer. The computer control laboratory is designed to be used in a terminal environment. The computer control laboratory is designed to be used in a terminal environment. The computer control laboratory is designed to be used in a terminal environment. The computer control laboratory is designed to be used in a terminal environment. The computer control laboratory is designed to be used in a terminal environment.

Experiential arrangements in the laboratory are experimental in design and likely to be challenging, yet complicated enough to give students an appreciation for the engineering aspects inherent to industrial processes (e.g., large time lags, error in parameter estimation).

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.

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Courses

Special
5300 Cooperative Education Training (1-5)
Assignment: Chemical Engineering

Chemical engineering students participating in the Cooperative Education Program acquire professional experience in industry. Students receives a tuition waiver in recognition of the valuable professional experience gained. Available in Chemical Engineering/Program and in consultation with the Department of Chemical Engineering.

3 5203 Process Calculations (3)
Involves the determination of steady state and dynamic flowsheet of industrial processes. Chemical, petroleum, and environmental engineering, nuclear science, and operations research. Applications to power generation, process control, and reactor design. Credit/no credit option.

3 5313 Chemical Engineering Thermodynamics (3)
Principles of thermodynamics and phase equilibrium, chemical engineering applications, nuclear science, and environmental engineering. Credit/no credit option.

4 5413 Chemical Engineering Thermodynamics (4)
Advanced study of the principles of chemical and physical processes, application of thermodynamic principles to nuclear, chemical, and process engineering. Credit/no credit option.

5 5701 Professional Seminar (1-5)
Seminar in chemical engineering for seniors and graduate students. May be repeated for credit.

5 5725 Cells in Chemical Engineering Laboratory I (5)
Principles of microbial and enzyme processes, chemical engineering concepts, molecular biology concepts and techniques, enzyme engineering, systems biology, fermentation, and other advanced topics in chemical engineering.

5 5726 Cells in Chemical Engineering Laboratory II (5)
Involves the preparation and characterization of microorganisms, microbial processes, and other advanced topics in chemical engineering.

5 5715 Engineering Project Management (3)
Principles and practices of engineering project management for undergraduate and graduate students.

5 5717 Advanced Thermodynamics (3)
Principles and applications of thermodynamics, including separation processes, chemical engineering, and nuclear engineering.

5 5718 Advanced Mathematical Methods for Chemical Engineering (3)
Advanced mathematical methods for chemical and nuclear engineering, with emphasis on the use of mathematical models and solutions of partial differential equations.

6 5720 Biochemical Engineering I (4)
Principles and practices of biochemical engineering, including enzyme engineering, metabolic engineering, and metabolic engineering.

6 5721 Biochemical Engineering II (4)
Principles and practices of biochemical engineering, including enzyme engineering, metabolic engineering, and metabolic engineering.

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Undergraduate Program

Civil engineering courses build on the College of Engineering core curriculum and are designed to give students the broad educational background essential to modern civil engineering practice. Electives in the senior year permit greater breadth or additional concentration in areas of specialization, such as structural and foundation engineering, environmental engineering, hydraulics, and transportation engineering.

Curriculum

* The humanities and social science electives must be selected to satisfy the humanities and social sciences requirements of the College of Engineering.

FRESHMAN YEAR

First Semester

4.13 Principles of Chemistry I 3 s.h.
22M.35 Engineering Calculus I 4 s.h.
57-5 Engineering I 3 s.h.
*Humanities or social science elective 3 s.h.
103-3 Accelerated Rhetoric 4 s.h.
Total 17 s.h.

Second Semester

4.15 Principles of Chemistry Lab I 2 s.h.
22M.36 Engineering Calculus II 4 s.h.
22M.40 Matrix Algebra for Engineers 2 s.h.
29.17 Introduction to Physics I 4 s.h.
57-6 Engineering II 3 s.h.
Total 15 s.h.

SOPHOMORE YEAR

First Semester

22M.42 Vector Calculus for Engineers 3 s.h.
29-18 Introduction to Physics II 4 s.h.
57-7 Statics 3 s.h.
57-9 Thermodynamics I 4 s.h.
*Humanities or social science elective 4 s.h.
Total 16 s.h.

Second Semester

22M.41 Differential Equations for Engineers 3 s.h.
57-10 Dynamics 3 s.h.
57-13 Materials Science 3 s.h.
57-15 Mechanics of Deformable Bodies 3 s.h.
*Humanities or social science elective 4 s.h.
Total 15 s.h.

JUNIOR YEAR

First Semester

57-23 Mechanics of Fluids and Transfer Processes 4 s.h.
57-21 Principles of Design I 3 s.h.
225-35 Probability and Statistics for Engineering and Physical Sciences 3 s.h.
53.31 Statistical Mechanics 3 s.h.
53.32 Modified Structural Analysis 3 s.h.
53-91 Professional Seminar: Civil Engineering 0 s.h.
Total 16 s.h.

Second Semester

57-8 Structural Analysis 3 s.h.
57-22 Principles of Design II 3 s.h.
53-25 Design of Steel Structures 3 s.h.
53-71 Principles of Hydraulics 2 s.h.
53-76 Principles of Geotechnics 2 s.h.
53-91 Professional Seminar: Civil Engineering 0 s.h.
*Humanities or social science elective 3 s.h.
Total 16 s.h.

GRADUATE PROGRAMS

The graduate program in civil and environmental engineering at both the M.S. and Ph.D. levels prepares students for professional positions in government, academia, environmental management, and consulting firms. Course work includes study of contemporary environmental management principles, planning and policy analysis, and the use of engineering and scientific tools to address environmental challenges. Students are encouraged to develop skills in communication, teamwork, and the ability to think critically and solve problems creatively.

Research

Environmental Engineering and Science

This curriculum provides a comprehensive base of course work and research in the areas of air and water quality management, environmental chemistry and microbiology, natural resource modeling, and processes for water supply, pollution control, and design of waste management systems. Interdisciplinary specializations and research are guided by the needs of industry and governmental agencies, and the field of environmental engineering continues to expand in response to emerging environmental concerns.

Civil Engineering

This curriculum provides a strong foundation in the principles of structural, mechanical, and electrical engineering, as well as an understanding of the physical and mathematical principles underlying these fields. The curriculum includes courses in materials science, mechanics of materials, and the design of structures, machines, and systems. Students are encouraged to develop skills in communication, teamwork, and the ability to think critically and solve problems creatively.

Environmental Engineering

This curriculum provides a comprehensive base of course work and research in the areas of air and water quality management, environmental chemistry and microbiology, natural resource modeling, and processes for water supply, pollution control, and design of waste management systems. Interdisciplinary specializations and research are guided by the needs of industry and governmental agencies, and the field of environmental engineering continues to expand in response to emerging environmental concerns.

The Center for Environmental Quality, the Center for Environmental Management, and the Center for Environmental Education provide a strong foundation in the principles of structural, mechanical, and electrical engineering, as well as an understanding of the physical and mathematical principles underlying these fields. The curriculum includes courses in materials science, mechanics of materials, and the design of structures, machines, and systems. Students are encouraged to develop skills in communication, teamwork, and the ability to think critically and solve problems creatively.

Groundwater contamination, bioremediation,
global climate change, and hazardous -

Hydraulics, Hydrology, and Water Resources

The hydraulics, hydrology, and water resources curricula are associated with the Iowa Institute of Hydraulic Research, a research organization that is world renowned. Senior staff and members of the institute are prominent in the programs, and devote much 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. Considerable attention is given to the use of digital computers in mathematical modeling and in the acquisition and processing of data. The Computation Laboratory for Hydroinformatics 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 Materials

The structure, mechanics, and materials curricula are directed primarily toward computer-aided structural design, optimization, and mechanics of materials. Special strengths exist in the areas of structural optimization, computational methods, concrete and prestressed concrete structures, behavior, ice engineering, and constitutive equations for metals and geotechnical materials. Course work and research in structural design and optimization, dynamics of structures, finite element techniques, mechanics and materials, concrete structures, and continuum mechanics, and plasticity are available.

Transportation

The transportation curriculum includes work in planning, design, construction, the operation of transportation systems and facilities, cooperative relationships with the graduate programs in urban and regional planning and transportation studies. Cooperative research is conducted at Public Transport, the Center for Simulation and Design Optimization, the DOT Midwest Transportation Center, the Iowan Driving Simulator, and the National Aviation Research Simulator, the "Urban and Regional Planning" and "Transportation Studies" in the College of Liberal Arts/Science of the Catalog.

Master of Science

The Master of Science program in civil and environmental engineering is designed to permit further concentration in the area or area of the student's choice. Graduates are placed in advanced technical positions in industry, government, and consulting engineering, or they may continue their graduate study. Current and presented 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 as much as 6 semester hours allowed for the thesis. An additional 3 semester hours are required in the northeast environmental engineering and science curriculum.

Students, with the approval of their adviser, develop a plan of study that meets the special requirements of their chosen curriculum. All degree candidates are expected to have a 3.50 minimum grade-point average. 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 bachelor's degree, one year of which is devoted to the preparation of a dissertation. In some 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 bachelor's 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 most of the student's coursework has been completed. The program culminates in a final examination, in which candidates must satisfactorily defend their dissertation.

Each candidate is expected to have a 3.20 minimum grade-point average throughout the doctoral program.

Financial Aid

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 academic achievement and research interest.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core

The engineering core course 57:5 Engineering I introduces an introduction to the Iowa Computer-Aided Engineering Network (IACEN), which is described under "College Facilities" in the section of the Catalog. Students in the course learn practical approaches to manufacturing micromanipulators and elementary structural analysis using Hewlett-Packard workstations. Upper students in the course Principles of Design I-C will become familiar with computer hardware and software available through IACEN.

For information about laboratories affiliated with core courses coordinated by other engineering departments, see the subsection for each of the departments.

Required and Elective Course Laboratories

53.56 Solid Mechanics (3 hours): equipped for determining the classification, stress-strain properties, and strengths of materials.

53.65 Experiment in Civil and Environmental Engineering (3 hours): consists of experimentation in the biotreatment, environmental, and structures areas offered at the Hydraulics Laboratory, the Environmental Engineering Laboratory, and the undergraduate structures-geotechnical/materials Laboratory as a survey course with hands-on experimentation.

53.150 Principles of Environmental Engineering (3 hours): 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 toxicology.

53.155 Environmental Chemistry Laboratory (3 hours): covers water and wastewater quality tests conducted at the Environmental Engineering Laboratory, and bench unit processes are opened and analyzed.

53.155 Limnology Laboratory (3 hours): typical aquatic organisms are studied in the Environmental Engineering Laboratory and several field sites, including the Des Moines lakes, wetlands, and
Graduate Facilities and Laboratories

ENVIRONMENTAL ENGINEERING AND SCIENCE LABORATORIES
Research in environmental engineering is conducted in the department's Philip F. Morgan Environmental Research Laboratory in the Iowa City North Municipal Wastewater Treatment Plant, at the Environmental Engineering Laboratory of the University Water Treatment Plant, and in the Hazardous Substances Research Laboratory at the Argonne National Laboratory.

The Morgan laboratory is devoted to research in the wastewater treatment area. It includes a walk-in incubator for temperature-controlled test studies, a modern wet chemistry laboratory, a 10,000 gallon aeration tank, and space for bench and pilot studies of wastewater treatment.

The Environmental Engineering Laboratory is equipped for both wet and air-pollutant chemical and biological analyses of water and provides space for both bench and pilot scale studies. The entire 9,000 gallon/day University Water Treatment Plant is especially designed to enable in situ study of treatment operations and processes.

The Argonne Substances Research Laboratory is a 2,500-square-foot facility designed specifically for research into the properties and reactivity of chemical components in 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 "on-line," which means that air is not recirculated, thus eliminating the possibility of cross-contamination. Air in the laboratory is continuously passed through high efficiency filters before being returned to the atmosphere, which maintains intense and tracible presence.

Recent advancement of the laboratory includes USPS Environmental Sciences Series II gas chromatographs with flame ionization and phosphorus/fluorine detectors and with thermal conductivity and electron capture detectors; HP5880 Series I gas chromatographs with flame ionization and electron capture detector (TCD); Perkins Elmer atomic absorption spectrophotometer with graphite tubes; ultraviolet-visible spectrophotometer; and a Miles/Ray Spectrophotometer. Three of the rooms in the laboratory are environmentally controlled to maintain temperatures from 0 to 60 degree-centigrade to provide conditions for chemical and biochemical reactions. The laboratory has a 50-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 site includes a 250-seat lecture hall and an auditorium for educational and social activities.

The laboratory is affiliated with the U.S. EPA Region 7 and 8 Water Research Superfund Research Center, the Center for Health Effects of Environmental Exposure, a cooperative unit of the College of Engineering and Medicine, and the NIH Environmental Research Core Center.

HYDRAULICS, HYDROLOGY, AND WATER RESOURCES LABORATORIES
The teaching and research functions of the department will closely be connected to the research and industrial affiliation of the Iowa Institute of Hydraulic Research, which also includes a Cooperative Laboratory for Hydrology and Water Resources.

The institute houses some of the most modern research facilities in the world, including a 200-foot towing tank, several hydraulic flumes and wet tunnels, a dispersion furnace, a wave tank, three 200-foot low-temperature flow facilities for simulation of ice phenomena, an environmental hydraulic flume for modeling of atmospheric flows, a refrigerated wind tunnel, a computer-controlled data handling system, a 2- and 3-D laser Doppler anemometer for instantaneous velocity measurements, and extensive computational facilities.

The Computational Laboratory for Hydrodynamics and Water Resources utilizes a Cray X-MP/100 computer, a Honeywell-Packard high-speed computer, and a graphics terminal and peripherals. It is equipped with advanced graphics software, communication software, language programming and application software, and a Geospac Information System (GIS).

STRUCTURES, MECHANICS, AND MATERIALS LABORATORIES
Laboratories for optimal design, plasticity, structures, soils, structural testing, and testing for research and teaching. The optimal design laboratory has a state-of-the-art network of Honeywell-Packard workstations and other peripherals. It is used to conduct research on modern computer-aided methods for design optimization of complex structural systems. The structural properties, soils, and plasticity laboratory are equipped for the determination of physical and mechanical properties of metals, concrete, soils, and plastic. Special equipment includes a computer-controlled MTS universal-testing system, universal testing machine, and a creep machine.

The ice engineering research lab has a unique test facility with a complete ice-structure data acquisition system. There is a 2,000-ton Cold testing equipment, a tank, a milling boat, and a cold room for preparation of ice samples, and a variety of other equipment to allow testing of the mechanical properties of ice and ice/structure interaction processes.

Courses

CIVIL ENGINEERING

CIVIL ENGINEERING 141
1200 Cooperative Education "Tying" Assignment: Civil Engineering Introduction. Register in class during week and sign-up for a cooperative education assignment prior to the start of the semester. Admissions are limited on a Cooperative Education Program basis and interest of host industry required.


332 Surveying and Geomatics 131 Geomatics Engineering measurements, methods, computer-driven. Prerequisites: 331.

334 Project Design and Management in Civil Engineering 131 Design of civil engineering projects, site evaluation and design projects, center for sustainable development, computerized design and planning, computer-assisted design, computer systems, geotechnical engineering, environmental engineering. Prerequisites: 331.

381 Environmental Engineering 131 Partial coverage of environmental engineering with emphasis on environmental quality, chemical treatment, Prerequisites: 331 and 511.

533 Professional Seminar Civil Engineering 151 Professional aspects of civil engineering profession. Development of student career assessment and planning, development and marketing, civil engineering, engineering design, project, and failure analysis of an engineering office, corporate software development, human factors, ethics in civil engineering professional. Prerequisites: 331.

534 Structural Mechanics 151 Development of computer-aided analyses of structural behavior and computer-aided design. Introduction to structural mechanics, structural analysis, structural design, and computer-aided design. Emphasis on computer-aided design. Prerequisites: 331.

535 Structural Mechanics II 151 Numerical methods in structural mechanics, computer analysis of statics and dynamics, computer methods and software, application of computer software to structural analysis. Prerequisites: 331.

536 Structural Mechanics 151 Computer methods and software in structural mechanics, computer analysis of statics and dynamics, computer methods and software, application of computer software to structural analysis. Prerequisites: 331.


541 Advanced Inductance in Mechanical Systems 151 Functional behavior analysis in mechanics of machines, equilibrium of forces and virtual work, mechanical vibrations, dynamic and static systems, numerical methods for structural analysis, and performance of machines and systems. Prerequisites: 331.

551 Structural Mechanics II 151 Structural analysis in mechanics of machines, equilibrium of forces and virtual work, mechanical vibrations, dynamic and static systems, numerical methods for structural analysis, and performance of machines and systems. Prerequisites: 331.

561 Fluid Mechanics 151 Fluid mechanics and aerodynamics, solid mechanics, fluid mechanics, aerodynamics, solid mechanics, and aero mechanics. Prerequisites: 331.


581 Advanced Inductance in Mechanical Systems 151 Functional behavior analysis in mechanics of machines, equilibrium of forces and virtual work, mechanical vibrations, dynamic and static systems, numerical methods for structural analysis, and performance of machines and systems. Prerequisites: 331.
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, control, communication, electronics, 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.

FRESHMAN YEAR

First Semester
4:13 Principles of Chemistry I 3 s.h.
10:3 Accelerated Algebra 4 s.h.
22M:35 Engineering Calculus I 4 s.h.
57:5 Engineering I 3 s.h.
*Humanities or social science electives 3 s.h.
Total 17 s.h.

Second Semester
4:15 Principles of Chemistry Lab I 1 s.h.
22M:36 Engineering Calculus II 4 s.h.
22M:40 Atlanta Analysts for Engineers I 2 s.h.
261:17 Introductory Physics I 4 s.h.
57:6 Engineering II 3 s.h.
Total 15 s.h.

Sophomore Year

First Semester
22M:41 Differential Equations for Engineers 3 s.h.
26:19 Introductory Physics II 4 s.h.
57:7 Statics 2 s.h.
57:8 Electrical Circuits 3 s.h.
57:9 Thermodynamics I 3 s.h.
Total 15 s.h.

Second Semester
22M:42 Vector Calculus for Engineers 3 s.h.
57:12 Linear Systems Analysis 3 s.h.
57:13 Computers in Engineering 3 s.h.
57:18 Principles of Electronic Instrumentation 3 s.h.
*Humanities or social science electives 3 s.h.
Total 16 s.h.

Junior Year

First Semester
22:50 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
55:22 Introduction to Digital Design 3 s.h.
55:41 Thermostatic Controls 4 s.h.
55:42 Signals and Systems 3 s.h.
55:49 Professional Seminar: Electrical Engineering 0 s.h.
*Humanities or social science electives 3 s.h.
Total 16 s.h.

Second Semester
55:33 Introduction to Software Design 3 s.h.
55:50 Communication Systems 3 s.h.
55:60 Control Systems 3 s.h.
55:79 Electromagnetic Theory 3 s.h.
29:83 Modern Physics 3 s.h.
Total 15 s.h.

Senior Year

First Semester
55:72 Electrical Engineering Materials and Devices 3 s.h.
55:88 Principles of Electronic Engineering Design 3 s.h.
55:91 Professional Seminar: Electrical Engineering 3 s.h.
Technical electives (see "Technical Electives" below) 0 s.h.
*Humanities or social science electives 3 s.h.
Total 18 s.h.

Second Semester
55:49 Senior Electrical Engineering Design 3 s.h.
Technical electives (see "Technical Electives" below) 0 s.h.
*Humanities or social science electives 4 s.h.
Total 16 s.h.

Technical Electives

Students must choose at least two courses from the following list. Technical electives must have an engineering orientation and cannot be drawn from the social sciences, the humanities, or skills courses. Students should consult the Undergraduate Manual for details.

55:35 Computer Architecture and Organization 3 s.h.
55:40 Power Systems Analysis 3 s.h.
55:120 Switching Theory 3 s.h.
55:131 Introduction to VLSI Design 3 s.h.
55:138 Testing Digital Logic Circuits 3 s.h.
55:139 Design Automation of Digital Systems 3 s.h.
55:141 Power Electronics 3 s.h.
55:142 Linear Integrated Circuits 3 s.h.
55:144 Digital Integrated Circuits 3 s.h.
55:146 Digital Signal Processing 3 s.h.
55:148 Digital Image Processing 3 s.h.
55:150 Communication Theory 3 s.h.
55:152 Introduction to Information and Coding Theories 3 s.h.
55:160 Controls Theory 3 s.h.
55:164 Computer-Based Control Systems 3 s.h.
55:165 Introduction to Robotics 3 s.h.
55:172 Solid State Physics and Electronics 3 s.h.
55:178 Optical Signal Processing 3 s.h.
57:11 Principles of Design I 3 s.h.
57:16 Principles of Design II 3 s.h.

Graduate Programs

Electrical and computer engineering offer curricula leading to the Master of Science and Doctor of Philosophy degrees. Thesis and non-thesis M.S. programs are available; either may precede Ph.D. studies. A special M.S. emphasis in software engineering is also available. Excellence in scholarship and research is augmented by close contact with the faculty throughout the period of graduate study and through programs tailored to fit individual student needs.

Students select an advisor and, with the consent of the advisor, plan an individual program either tied by a few broad guidelines established by the Graduate Division and by the program. Close interdisciplinary ties with other departments exist both within and outside the college, particularly the Departments of Internal Medicine, Radiology, Physics, Computer Science, Mechanical Engineering, and Biomedical Engineering. The principal areas of concentration are waves and materials, computer systems and image processing, and control systems and robotics. Each is briefly described below.

Research

Waves and Materials

Plasma physics, electron-optics, nonlinear optics, optical signal processing, and acoustic-optics investigations utilize specialized laboratories in both the Engineering Building and Van Allen Hall. Collaborative research with the physics department is directed toward topics in non-linear plasma physics of a theoretical as well as experimental nature. These topics include plasma confinement and stability and nonlinear wave phenomena, such as solitons and shocks. A plasma physics laboratory is available to support this activity. An electronic-optics and a quantum optics laboratory are used to conduct graduate research in the areas of linear and non-linear optics. This research is concerned with fundamental optical-acoustic optics, new forms of holography, and nonlinear properties and application of materials.

In the area of optical signal processing, projects involve the use of optical fibers and various light modulations to build special-purpose analog and digital processors for parallel computation and signal manipulation. A small associative optical computer is being developed in the optical processing laboratory.

Computer Systems and Software Engineering

Research emphasis in computer systems is directed toward design of highly reliable computer systems, design and testing of very-large-scale integrated circuits, distributed computing, and parallel processing. Areas of interest include fault-tolerant computer-architectures, setting of digital logic circuits, power architecture, parallel and distributed algorithms, operating systems, VLSI layout, and optical computing. Research in software engineering is oriented toward software reliability analysis and tools for parallel software development and analysis.

The work is supported by departmental facilities including a network of SUN workstations as well as through a network connecting students to colleges, University, and national facilities, including NASA, the Undersea Research Center, national supercomputer centers, federal laboratories, and facilities at other universities.

Current projects include design of easily testable, very-large-scale integrated circuits;
CAD algorithms for VLSI applications of distributed parallel processing, for modeling dynamic systems; evaluation of performance parameters of parallel systems; developing parallel and distributed programs.

Signal and Image Processing
Image processing and basic and applied signal processing are areas of emphasis. A digital signal processing laboratory and an image analysis laboratory are available to support this research. The Cardiovascular Image Processing Laboratory, located in the Cardiovascular Center at The University of Texas Health Center, is also available. Collaborative research with faculty in the Departments of Electrical, Computer, and Biomedical Engineering is directed at quantitative analysis of medical images.

In the area of signal processing, current projects include signal processing associated with speech and hearing, audio coding and transmission of speech, speech processing aids for the hearing-impaired, analysis and design of efficient adaptive algorithms for signal processing, robust equalization of uncertain channels, and application of neural networks to communications systems.

In the area of image processing, current projects include automatic detection of visual features in images using artificial intelligence techniques, detection and tracking of cardiac motion from magnetic resonance images, analysis of cardiac motion patterns, and automatic approaches to segmentation of three-dimensional brain images for computer vision algorithms, and three-dimensional segmentation techniques for medical image data using fractals. Additional work is directed at developing imaging techniques that can incorporate models of the human visual system.

Control Systems and Robotics
Current research emphasizes optimal, adaptive, digital, and stochastic control; multiarm robot manipulation; and control of nonlinear dynamical systems. Recent work has concerned the design, identification, and robust control of linear and nonlinear dynamical systems; the contribution of cooperation amongst teams, the control applications of neural networks, and the use of control theory to analyze distributed computing, communications, and manufacturing systems.

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 work, with at least 16 semester hours from an approved list of courses in electrical and computer engineering. M.S. students may accept some advanced standing credits. Six semester hours of credit must be earned in 5100 Research in Electrical and Computer Engineering, M.S. Thesis by students in the thesis option. Without thesis, a total of no more than 3 semester hours of independent study credit may be included in the required 36-semester-hour total.

Conditions 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 these candidates must consist of an oral defense of the thesis. The time of graduation, conditions for the master's degree, and the required minimum 3.00 cumulative grade-point average in graduate course work.

M.S. Subtrack in Software Engineering
The department offers M.S. subtrack in software engineering, 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.

55-180 Fundamentals of Software Engineering 3.s.h.
55-182 Software Engineering Project I 3.s.h.
55-180 Software Engineering Project II 3.s.h.

In addition, both options require completion of at least three courses chosen from the following:

55-131 Introduction to VLSI Design
55-132 High Performance Computer Architecture
55-235 Graph Algorithms and Combinatorial Optimization
55-234 Computer Communications
55-232 Parallel Computing and Advanced Architecture
55-236 Distributed Computing
55-115 Advanced Operating Systems and Concurrent Programming

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 credits for additional course work must be from the M.S. final examination are the same as for the general M.S. program.

Doctor of Philosophy
The requirements are

- at least 72 semester hours of credit in a coherent program acceptable to the advisor and approved by the graduate committee; with at least 45 semester hours of credit earned in formal courses (thesis or other independent study), including 30 semester hours from an approved list of courses in electrical and computer engineering;

- successful completion of the Ph.D. qualifying examination

- successful completion of the Ph.D. comprehensive examination;

- successful completion of a research program that includes a minimum of 18 semester hours of Ph.D. research; and

- successful completion of a final oral defense of the thesis and a 3.55 cumulative grade-point average in graduate course work.

Admission
The minimum requirement for admission to the graduate program is a 3.70 grade-point average for M.S. students and a 3.25 for Ph.D. students on all courses in electrical and computer engineering, mathematics, and physics. M.S. students with a grade-point average less than 2.70 but better than 2.50 in courses in electrical and computer engineering, mathematics, and physics may be admitted provisionally. Students with baccalaureate degrees in related areas (e.g., physics, mathematics, and computer science) may be admitted. Internationals may be additional course work without graduate credit may be required.

Each applicant is reviewed on an individual basis. Extensive circumstances may permit deviations from the usual standards.

Financial Aid
A number of fellowships, residencies, scholarships, and industrial grants are available to graduate students who qualify. These are awarded on a competitive basis.

CPR algorithms for VLSI applications of distributed parallel processing, for modeling dynamic systems; evaluation of performance parameters of parallel systems; developing parallel and distributed programs.

Signal and Image Processing
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Conditions 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 these candidates must consist of an oral defense of the thesis. The time of graduation, conditions for the master's degree, and the required minimum 3.00 cumulative grade-point average in graduate course work.

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Doctor of Philosophy
The requirements are

- at least 72 semester hours of credit in a coherent program acceptable to the advisor and approved by the graduate committee; with at least 45 semester hours of credit earned in formal courses (thesis or other independent study), including 30 semester hours from an approved list of courses in electrical and computer engineering;

- successful completion of the Ph.D. qualifying examination

- successful completion of the Ph.D. comprehensive examination;

- successful completion of a research program that includes a minimum of 18 semester hours of Ph.D. research; and

- successful completion of a final oral defense of the thesis and a 3.55 cumulative grade-point average in graduate course work.

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Each applicant is reviewed on an individual basis. Extensive circumstances may permit deviations from the usual standards.

Financial Aid
A number of fellowships, residencies, 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

Electric and computer engineering provides core instruction to the colleges in electronics, electrical circuits, and electronics. A key part of this core is teaching responsibility lies in providing the students of the college with their first experience with engineering laboratory instrumentation.

Undergraduate Laboratories

The undergraduate laboratories consist of the following disciplines: electronics laboratories plus special-purpose laboratories for microcomputers, CAD for VLSI circuits, control systems, communication systems, signals and systems, optics, and image processing.

Graduate Faculties and Laboratories

The department has laboratories interested primarily for graduate research in the areas of parallel processing, image processing, CAD for VLSI circuits, software engineering, optoelectronics, plasma physics, control systems, and optical image processing. A network of ECE, ECE, and AEE workshops and service nodes provides supplemental computing support.

This network is tied to the College of Engineering's CASL facility, which consists of more than 100-Heisenberg workstations. Connections are provided to several University facilities, including networks. Through computer-oriented, advanced computing facilities or national supercomputing centers, federal laboratories, and other universities are available for graduate research.

Courses

55:000 Cooperative Education (Internship) - Student Internship- 0 E.C.H.

55:060 Introduction to Electrical Engineering - Introduction to Electrical Engineering- 3 E.C.H.

55:070 Circuit Analysis (Morning Session)- 3 E.C.H.

55:080 Circuit Analysis (Afternoon Session)- 3 E.C.H.

55:090 Senior Electrical Engineering Design - Senior Electrical Engineering Design- 3 E.C.H.

55:100 Professional Student - Electrical Engineering- 3 E.C.H.


55:130C Introduction to Digital Design - Introduction to Digital Design- 3 E.C.H.


55:150C Biomedical Engineering - Biomedical Engineering- 3 E.C.H.

55:160C Instrumentation Design - Instrumentation Design- 3 E.C.H.


55:190C Introduction to Embedded Systems - Introduction to Embedded Systems- 3 E.C.H.

55:200C Introduction to Engineering Research - Introduction to Engineering Research- 3 E.C.H.

55:210C Introduction to Engineering Ethics - Introduction to Engineering Ethics- 3 E.C.H.


55:230C Introduction to Digital Logic Design - Introduction to Digital Logic Design- 3 E.C.H.

55:240C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:250C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:260C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:270C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:280C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:290C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:300C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:310C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:320C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:330C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:340C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:350C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:360C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:370C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:380C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:390C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:400C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:410C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:420C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:430C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:440C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:450C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:460C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:470C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:480C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:490C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:500C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:510C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:520C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:530C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:540C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:550C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:560C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:570C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:580C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.

55:590C Introduction to VLSI Design - Introduction to VLSI Design- 3 E.C.H.
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. In industrial engineering, engineers hold positions as advisors to management or as part-time consultants in management services decisions. Representative job titles include industrial engineer, manufacturing engineer, systems analyst, quality specialist, operations research analyst, internal consultant, human factors specialist, superintend, and manager. While most industrial engineers are employed by manufacturing firms, others work in government agencies or service organizations such as airlines, banks, and hospitals.

**Undergraduate Program**

The undergraduate curriculum in industrial engineering requires a strong foundation of courses in engineering science, mathematics, design, manufacturing, social sciences, and humanities. Admitted courses include geometry courses in manufacturing operations and robotics, social science courses, management, economics and information systems, concentration engineering, production, quality control, and operations research.

**Industrial Engineering Curriculum**

**FRESHMAN YEAR**

**First Semester**
- 41:13 Principles of Chemistry 1 3 s.h.
- 101:10 Introduction to 3 s.h.
- 130:15 Engineering Calculus 4 s.h.
- 175:12 Engineering Analysis 3 s.h.
- Humanities elective (see below) 3 s.h.
- Total 17 s.h.

**Second Semester**
- 41:16 Principles of Chemistry Laboratory 2 s.h.
- 130:36 Engineering Calculus II 4 s.h.
- 130:40 Matrix Algebra for Engineers 3 s.h.
- 29:17 Introduction to Physics I 4 s.h.
- 37:16 Engineering II 3 s.h.
- Total 15 s.h.

**Sophomore Year**

**First Semester**
- 23:41 Differential Equations for Engineers 3 s.h.
- 29:18 Introduction to Physics II 4 s.h.
- 17:10 General Chemistry I 3 s.h.
- 37:14 Engineering Economy 3 s.h.
- Total 15 s.h.

**Second Semester**
- 23:39 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
- 31:13 General Psychology (social science elective) 3 s.h.

**Junior Year**

**First Semester**
- 57:12 Manufacturing Processes 3 s.h.
- 57:14 Human Factors Engineering 3 s.h.
- 57:17 Computer in Engineering 3 s.h.
- 57:21 Principles of Design I 3 s.h.
- Mathematics-elective (see below) 3 s.h.
- Total 18 s.h.

**Second Semester**
- 57:91 Professional Seminar: Industrial Engineering 0 s.h.
- 57:21 Manufacturing Systems 3 s.h.
- 57:40 Ergonomic Design 3 s.h.
- 57:22 Principles of Design II 3 s.h.
- Technical electives (see below) 6 s.h.
- Total 15 s.h.

**Senior Year**

**First Semester**
- 57:216 Psychology in Management (social science elective) 3 s.h.
- 57:99 Professional Seminar: Industrial Engineering 1 s.h.
- 57:244 Concurrent Engineering 3 s.h.
- 21:171 Operations Research 3 s.h.
- Humanities-elective (100 level) 3 s.h.
- Technical elective (see below) 3 s.h.
- Total 16 s.h.

**Second Semester**
- 57:91 Professional Seminar: Industrial Engineering 0 s.h.
- 57:180 Operations Systems Design 4 s.h.
- 57:40 Quality Control 3 s.h.
- 57:160 Production Systems 3 s.h.
- Technical electives (see below) 6 s.h.
- Total 16 s.h.

**Economics Electives**

Students may select from the following list.
- 68:103 Microeconomics 3 s.h.
- 68:119 Economics of the Government Sector 3 s.h.
- 68:125 International Economics 3 s.h.
- 68:129 Ecoadvanced Concepts 3 s.h.
- 68:132 Environmental and Natural Resource Economics 3 s.h.
- 68:135 Regional and Urban Economics 3 s.h.
- 68:141 Economics of American Industries 3 s.h.

**Mathematics and Statistics Electives**

Students may select from the following list.
- 22:42 Vector Calculus for Engineers 3 s.h.
- 22:46 Elementary Numerical Analysis 3 s.h.
- 22:47 Statistical Analysis course with advisor's approval 3 s.h.

**Engineering Science Electives**

Students may select one of the following courses.
- 57:10 Dynamics 3 s.h.
- 57:12 Linear Systems Analysis 3 s.h.
- 57:18 Principles of Electronic Communication 4 s.h.
- 57:17 Mechanics of Deformable Bodies 3 s.h.
- 57:20 Mechanics of Fluids and Transfer Processes 4 s.h.

**Potential Electives**

Students may select 12 semester hours from the list below, plus 3 semester hours with consent of advisor; or 9 semester hours from the list below, plus 3 semester hours from the engineering science electives and 3 semester hours with consent of advisor.
- 56:96 Individual Investigation: Industrial Engineering 3 s.h.
- 56:132 Introduction to Industrial Robotics 3 s.h.
- 56:130 Artificial Intelligence in Design, Manufacturing 3 s.h.
- 56:145 Advanced Engineering/Human Factors 3 s.h.
- 56:146 Advanced Management 3 s.h.
- 56:150 Computer Systems Design 3 s.h.
- 56:151 Microcomputer Applications 3 s.h.
- 56:155 Engineering Management I 3 s.h.
- 56:156 Quantitative Investment Analysis 3 s.h.
- 56:150 Engineering Economic Decision Analysis 3 s.h.
- 56:163 Quality Engineering I 3 s.h.
- 56:165 Quality Management and Practice 3 s.h.
- 56:176 Regression Analysis 3 s.h.
- 56:178 Digital Systems Simulation 3 s.h.
- 56:179 Contemporary Topics in Industrial Engineering 3 s.h.

**Specialization in Quality Engineering**

Quality engineering is a specialization in the engineering profession, but is concerned with the design, manufacture, delivery, maintenance, and use of products and services throughout their life cycles. Due to the importance of these products to society and to the customer needs, engineers must identify and improve quality throughout all phases of the product's or service's creation and use. Quality has an economic dimension in that costs occur after as well as during the design, development, and manufacture of products and services.

The breadth of requirements of quality engineering is similar to those of industrial engineering. Consequently, a specialization in quality engineering can be obtained through the
Graduate Programs

Graduate programs in industrial engineering are tailored to meet the needs of the individual.

Each student's program of study is based on his or her background, career objectives, and sound academic practice. The curriculum is flexible.

Graduate students are encouraged to:

1. Enroll in the Industrial Engineering (M.S.) program.
2. Complete a minimum of 30 semester hours in courses numbered 500 or above.
3. Maintain a minimum grade point average of 3.0.
4. Complete at least two courses at the 600-level.
5. Complete a thesis or equivalent project.

The program requires a minimum of 30 semester hours of coursework, including:

- At least 12 semester hours in core courses.
- At least 12 semester hours in elective courses.
- At least 6 semester hours in research courses.

Admission

Students with an M.S. objective may be admitted to the M.S. in industrial engineering degree program. Applicants should have a bachelor's degree in engineering or a related field.

Admission requirements include:

- A grade point average of at least 3.0 on a 4.0 scale.
- Completion of a minimum of 30 semester hours of coursework.
- A minimum score of 500 on the Graduate Record Examination (GRE) General Test.
- Completion of prerequisite courses in mathematics and statistics.

Students interested in transferring from other universities should contact the Graduate Program Director for assistance.

Master of Science

Two M.S. programs are available: technology and management.

Technology: Focuses on the application of scientific principles and engineering methods to solve problems in manufacturing and service systems.

Management: Focuses on the application of management principles and techniques to improve the efficiency and effectiveness of organizations.

Students are required to complete a minimum of 30 semester hours of coursework, including:

- At least 12 semester hours in core courses.
- At least 12 semester hours in elective courses.
- At least 6 semester hours in research courses.

The program requires a thesis or equivalent project.

Doctor of Philosophy

The Ph.D. program in industrial engineering is designed to provide advanced training in the following areas:

- Manufacturing systems
- Operations research
- Quality control
- Reliability theory
- Systems engineering

Admission to the Ph.D. program requires a minimum of 30 semester hours of coursework, including:

- At least 12 semester hours in core courses.
- At least 12 semester hours in elective courses.
- At least 6 semester hours in research courses.

The program requires a thesis or equivalent project.

Financial Aid

Graduate students are eligible for funding through teaching assistantships, research assistantships, and fellowships.

Students are encouraged to contact the Graduate Program Director for information on available funding opportunities.

For more information, please contact the Graduate Program Director at the address provided in the document.
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, automobiles, trucks, home appliances, packaging machinery, and aircraft. Mechanical engineers find employment opportunities in a wide variety of jobs, including these: industry, government, and education. Mechanical engineers form an integral part of most industries, including aeronautics, firms, energy-generation utilities, automobile manufacturers, food and metal processing industries, petroleum refineries, electronics, and computer manufacturers. Heavy construction, 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 group projects in a senior-level capstone design course, 58:80 Mechanical Engineering 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 science; 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 mathematical and basic sciences are the engineering sciences: statics, dynamics, thermodynamics, mechanics of deformable solids, mechanics of fluids and transfer processes, and the design of mechanical systems. 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 modern society that involve environmental, economic, managerial, and political decisions. Making, Therefore, mechanical engineers must possess appreciation of social and humanistic issues related to government, business, religion, industry, expert, language, 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.

INDIANA YEAR

First Semester
6:15 Principles of Chemistry I 3 s.h.
10:3 Accelerated Electric 4 s.h.
228:35 Engineering Calculus I 4 s.h.
57:5 Engineering I 3 s.h.
"Social science elective" 3 s.h.
Total 17 s.h.

Second Semester
4:16 Principles of Chemistry Lab I 2 s.h.
228:36 Engineering Calculus II 4 s.h.
228:40 Matrix Algebra for Engineers 3 s.h.
29:17 Introductory Physics I 4 s.h.
57:6 Engineering II 3 s.h.
Total 15 s.h.

SOMERSET YEAR

First Semester
228:42 Vector Calculus for Engineers 3 s.h.
29:18 Introductory Physics II 4 s.h.
57:7 Statics 3 s.h.
57:8 Thermodynamics I 3 s.h.
57:15 Materials Science 3 s.h.
Total 15 s.h.

Second Semester
228:41 Differential Equations for Engineers 3 s.h.
57:8 Electric Circuits 3 s.h.
57:5 Dynamics 3 s.h.
57:19 Mechanics of Deformable Bodies 3 s.h.
"Humanities or social science elective" 4 s.h.
Total 16 s.h.

JUNIOR YEAR

First Semester
225:39 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
57:12 Linear Algebra and Applications 3 s.h.
57:20 Mechanics of Fluids and Transfer Processes 4 s.h.
57:21 Principles of Design I 3 s.h.
57:18 Principles of Electronic Instrumentation 4 s.h.
58:51 Professional Seminar: Mechanical Engineering 0 s.h.
Total 17 s.h.

Second Semester
29:83 Modern Physics 3 s.h.
58:40 Thermodynamics II 3 s.h.
58:45 Heat Transfer 3 s.h.
58:52 Mechanical Systems 3 s.h.
58:51 Professional Seminar: Mechanical Engineering 0 s.h.
"Humanities elective" 3 s.h.
Total 15 s.h.

JUNIOR YEAR

First Semester
58:46 Thermal-Fluid Systems Design 4 s.h.
58:55 Mechanical Systems Design 4 s.h.
58:91 Professional Seminar: Mechanical Engineering 3 s.h.
Technical electives 6 s.h.
"Social science elective (100 level)" 3 s.h.
Total 17 s.h.

Second Semester
58:80 Experimental Engineering 4 s.h.
58:86 Mechanical Engineering Project 3 s.h.
Technical electives 6 s.h.
"Humanities elective (100 level)" 3 s.h.
Total 16 s.h.

TECHNICAL ELECTIVES

These permit students to develop a broader background and a deeper understanding of 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 advisor before selecting elective courses.

Guidelines for selecting technical electives are:

• a minimum of two electives 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 that those required in the curriculum, may be taken at technical electives;
• one course may be chosen from mechanical engineering required in another engineering curriculum;
• one course from the College of Business Administration may be elected, with the exception of accounting or economics courses numbered below 100; economic courses may be taken as social science electives; and
• a maximum of 3 semester hours of independent study may be taken as a technical elective. Independent 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 course:

Control Systems Engineering
58:131 Feedback Control Systems 3 s.h.
58:132 Control System Design 3 s.h.
58:135 Control Theory 3 s.h.
58:136 Computer-Based Control Systems 3 s.h.

Mechanical Systems Engineering
58:110 Computer-Aided Engineering 3 s.h.
58:110 Low-Frequency Mechanics of Deformable Bodies 3 s.h.
58:31 Fluid Mechanics and Dynamics of Machines 3 s.h.
58:133 Fundamentals of Vibrations 3 s.h.
Research

Fluid Mechanics

The graduate program in fluid mechanics provides the student with a rigorous and broad education in theoretical, numerical, and experimental aspects of the subject. This is especially suitable for those seeking careers in teaching and/or research in academic and industrial organizations. Emphasis is placed on understanding the fundamentals and the ability to apply the principles of fluid dynamics to the solution of problems in fluid flow. The program emphasizes the fundamentals of fluid mechanics, the mathematical formulation of theories and the solution of problems in fluid mechanics.

Thermal-Fluid Engineering

Sc.52:661 Intermediate Mechanics of Fluids 3 s.h.
Sc.52:662 Experimental Methods in Fluid Flow 3 s.h.
Sc.52:663 Electromagnetics of Fluid Flow 3 s.h.
Sc.52:667 Applied Thermodynamics 3 s.h.

General

Sc.59:089 Industrial Investigation: Mechanical Engineering 6 s.h.
Sc.59:111 Numerical Calculations in Engineering 3 s.h.
Sc.59:113 Mathematical Methods in Engineering 3 s.h.
Sc.59:115 Finite Element Techniques in Engineering I 3 s.h.
Sc.59:149 Engineering Optics 3 s.h.
Sc.59:155 Conceptual Topics in Mechanical Engineering 3 s.h.

For more information on the undergraduate program in mechanical engineering, see the Undergraduate Student Handbook, available in the department office.

Graduate Programs

The goal of the graduate program in the Department of Mechanical Engineering is to educate students in the disciplines of mechanical engineering in engineering design, development, teaching, and research. Students must develop their research skills in their areas of interest and make significant contributions to the field. The program emphasizes the fundamentals of fluid mechanics, the mathematical formulation of theories and the solution of problems in fluid mechanics.

Thermal Sciences

The graduate program in thermal sciences and systems provides students with a rigorous and broad education in the thermal sciences and systems. The program emphasizes the fundamentals of the various fields of thermal sciences and systems. The program emphasizes the fundamentals of fluid mechanics, the mathematical formulation of theories and the solution of problems in fluid mechanics.

Mechanical Engineering

The graduate program in mechanical engineering provides students with a rigorous and broad education in the discipline of mechanical engineering. The program emphasizes the fundamentals of fluid mechanics, the mathematical formulation of theories and the solution of problems in fluid mechanics.

Master of Science

The M.S. program requires a minimum of 30 semester hours of acceptable work and research. Students may choose either a thesis or a non-thesis program. The student must complete at least 24 hours of acceptable work and research. The student must complete at least 18 hours of acceptable work and research. The student must complete at least 12 hours of acceptable work and research. The student must complete at least 8 hours of acceptable work and research. The student must complete at least 6 hours of acceptable work and research. The student must complete at least 4 hours of acceptable work and research. The student must complete at least 2 hours of acceptable work and research. The student must complete at least 1 hour of acceptable work and research.
The requirements for the M.S. may be completed within one calendar year. However, students with unusually strong or other constraints may take up to two calendar years to complete the degree.

Doctor of Philosophy

Typically, Ph.D. programs in mechanical engineering require approximately 90 semester hours of credit including research for the dissertation - beyond the M.S. degree. Students must pass the qualifying examination administered in the department by examiners admitted to the doctoral program. 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 shall 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 advisor. The exam is administered by the student's committee. Admission to Ph.D. candidacy is recognized upon successful completion of the comprehensive examination.

Having satisfactorily completed the exam, 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 minimum grade point average on all previous college level work and minimum Graduate Record Examination (GRE) General Test scores of 550 verbal and 700 quantitative. For students whose native language is not English, a minimum Test of English as a Foreign Language (TOEFL) score of 550 may be substituted for the GRE verbal requirement. Students may, under exceptional circumstances, be considered for conditional admission with a lower General GRE score and/or TOEFL test score. The student with conditional status must achieve regular status within one semester (90-day) summer session after admission. To satisfy this requirement, the conditionally admitted student must attain a 3.0 minimum grade point average on an initial registration of 9 semester hours at The University of Iowa. Students who have not submitted their GRE and/or TOEFL scores by the end of the first regular semester after admission will have their registration for the subsequent semester canceled by the Graduate College.

Financial Aid

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 Computer-Aided Design, and the Iowa Institute of Hydraulic Research. These awards may be made on a semester, academic year, or calendar year basis. Awards and stipend levels are competitive and are based on the student's academic performance and the committee's potential contribution to the teaching and research goals of the department. Students who fulfill their scholastic responsibilities and continue to make satisfactory progress toward their degree objective receive preference in renewal of their assistantships. Advanced doctoral students also 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 4 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 these minimums, graduate students must register for a minimum of 3 semester hours each semester. Students with appointments must register during summer sessions. All registrations should accurately reflect the amount and type of work undertaken. Use of University facilities, and amount of coursework and the facility. One semester of full M.S. or post-Ph.D. comprehensive examination is permitted for students who have completed their requirements but have not yet received their degrees.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core

The laboratories for fluid flows and transport processes consist of a wind tunnel, a water flume, a water basin, and an electrically-heated or TOEFL test score. The student with conditional status must achieve regular status within one semester (90-day) summer session after admission. To satisfy this requirement, the conditionally admitted student must attain a 3.0 minimum grade point average on an initial registration of 9 semester hours at The University of Iowa. Students who have not submitted their GRE and/or TOEFL scores by the end of the first regular semester after admission will have their registration for the subsequent semester canceled by the Graduate College.

The mechanical engineering laboratory for experimental engineering provides undergraduate students with exposure to contemporary sensors, signal conditioners, and computers-and-digital data acquisition systems. The laboratory for mechanical engineering provides opportunities for either group or individual project activities in mechanical engineering design, construction of mechanisms, and testing. The thermal and fluid test laboratory is equipped with data acquisition systems to perform a wide range of tests. Fluid flow and temperature measurements are made in this laboratory.

Graduate Faculties and Laboratories

FLUID MECHANICS

The progress in fluid mechanics is conducted in close collaboration with the Iowa Institute of Hydraulic Research, which houses some of the most modern research facilities in the world. The equipment available to graduate students includes several wind tunnels and hydraulic facilities, an environmental flow facility, a 300-knot towing tank, two special low-speed flow facilities for investigation of ice phenomena, pulsed-flow apparatus, uncertainty flow water tunnel, hot-wire and laser-anemometry systems, and computer-based data acquisition systems.

In the department, the facilities available are a free visualization and boiling system with CFD camera, a low-speed wind tunnel, a water basin and a rotary machine, and the computer and engineering workshop provides the necessary support.

EXPERIMENTAL

Facilities for research in the thermal sciences and systems consist of a spectral radiometric optical infrared data-acquisition system, a low-pressure combustion diagnostics system, a large-scale directed-injection diesel engine, and a high-speed digital video system for engine instrumentation. Small-scale measurements in the laboratory include a scan of fluid flow, hot transfer, and coal combustion.

Several laboratories are served by computer-based data-acquisition systems. Workstations connected to a gateway on the Computing Center are available for data reduction and analysis.

RADIATION AND FR Actures

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, a stress-analysis laboratory, a high-resolution fatigue test equipment, and equipment for characterization of material properties. Normal stress-strain and fatigue test equipment is available.
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 enrollments is in the Graduate College. The 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 assistance funds, the college encourages research and the development of departments. In cooperation with the Office of the Vice President for Research, it offers assistance to individual faculty members in funding the resources necessary for research projects, and it works with the other colleges and departments of the University to formulate policies concerning selection, appointments, and support of graduate students.

The faculty of the Graduate College is made up of all University faculty members in the arts of assistant professor, associate professor, and professor. A 12-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 in charge of the Dean of the Graduate College.

Degree Programs

The Graduate College confers the Master of Arts (M.A.), Master of Science (M.S.), Master of Business Administration (M.B.A.), Master of Science in Teaching (M.S.T.), Master of Fine Arts (M.F.A.), Master of Physical Therapy (M.P.T.), Educational Specialist (Ed.S.), Master of Social Work (M.S.W.), Doctor of Philosophy (Ph.D.), and Doctor of Musical Arts (D.M.A.), degree.

The college currently confers degrees in the following major fields:

- Accounting—M.A.
- Accounting—M.B.A.
- American Studies—M.A., Ph.D.
- Anatomy—M.A.
- Anthropology—M.A., Ph.D.
- Applied Mathematics—Ph.D.
- Art—M.A., M.F.A.
- Art History—M.A., Ph.D.
- Asian Civilizations—M.A.
- Astronomy—M.S.
- Biochemistry—M.S., Ph.D.
- Biology—M.S., Ph.D.
- Biomedical Engineering—M.S., Ph.D.
- Botany—M.S., Ph.D.
- Business Administration—M.B.A., M.B.A./M.S., Ph.D.
- Chemical and Biophysical Engineering—M.S., Ph.D.
- Chemistry—M.S., Ph.D.
- Chemistry—M.S., Ph.D.
- Communication Studies—M.A., Ph.D.
- Comparative Literature—M.A., M.F.A., Ph.D.
- Computer Science—M.S., Ph.D.
- Criminal Justice and Corrections—M.A.*
- Dance—M.F.A.
- Dental Hygiene—M.S.
- Dental Public Health—M.S.
- Economics—M.A., Ph.D.
- Education—M.A., M.A.T., Ed.S., Ph.D.
- Electrical and Computer Engineering—M.S., Ph.D.
- Endodontics—M.S.
- English—M.A., M.F.A., Ph.D.
- Electronic Science—M.A., Ph.D.
- Forestry—M.S., Ph.D.
- Genetics—M.A., Ph.D.
- Geography—M.A., Ph.D.
- German—M.A., Ph.D.
- Greek—M.A., Ph.D.
- History—M.A., Ph.D.
- Hospital and Health Administration—M.A., Ph.D.
- Human Nutrition—Ph.D.**
- Industrial Engineering—M.S., Ph.D.
- Journalism—M.A.
- Latin—M.A.*
- Leisure Studies—M.A.
- Library and Information Science—M.A.
- Linguistics—M.A., Ph.D.
- Mass Communications—Ph.D.
- Mathematics—M.S., Ph.D.
- Mechanical Engineering—M.S., Ph.D.
- Microbiology—M.S., Ph.D.
- Molecular Biology—Ph.D.
- Neurosciences—Ph.D.
- Nursing—M.A., Ph.D.
- Operative Dentistry—M.S.
- Oral and Maxillofacial Surgery—M.S.
- Orthodontics—M.S.
- Pathology—M.S.
- Pedodontic Dentistry—M.S.
- Periodontology—M.S.
- Pharmacology—M.S., Ph.D.
- Pharmacy—M.S., Ph.D.
- Philosophy—M.A., Ph.D.
- Political Science—M.S., Ph.D.
- Physical Therapy—M.A., M.F.T.
- Physics—M.S., Ph.D.
- Physiology and Biophysics—M.S., Ph.D.
- Political Science—M.A., Ph.D.
- Preventive Medicine and Environmental Health—M.S., Ph.D.
- Psychodontology—M.S.
- Psychology—M.A., Ph.D.
- Public Affairs—M.A.,**
- Quality Management and Productivity—M.S.
- Radiation Biology—M.S., Ph.D.
- Religion—M.A., Ph.D.
- Radiation—M.A.
- Science Education—M.S., Ph.D.
- Social Studies—M.A., M.S.
- Social Work—M.S.W.
- Sociology—M.A., Ph.D.
- Spanish—M.A., Ph.D.
- Speech Pathology and Audiology—M.A., Ph.D.
- Statistics—M.S., Ph.D.
- Stomatology—M.S.
- Theatre Arts—M.F.A.
- Urban and Regional Planning—M.A., M.S.*

*Degree offered with or without thesis
**Degree offered without thesis
***Degree offered upon suspension

Ad Hoc Interdisciplinary Ph.D. Programs

In addition to the degree programs listed above, the graduate faculty has authorized the awarding of ad hoc interdisciplinary Ph.D. degrees. There are no provisions for ad hoc interdisciplinary programs at the master's level. Students seeking approval for ad hoc interdisciplinary Ph.D. programs must previously have been admitted to and enrolled in a departmental program in the Graduate College. For details, see Section XIX in "Rules and Regulations of the Graduate College" in this section of the Catalog.

Aging Studies Program

The Aging Studies Program is a multidisciplinary undergraduate program administered by the College of Liberal Arts in cooperation with other colleges of The University of Iowa. The 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 further details, see "Aging Studies Program" in the College of Liberal Arts section of the Catalog.

Applied Mathematical Sciences

The Applied Mathematical Sciences Program is a broad-based interdisciplinary program leading to the Ph.D. Students combine study of theoretical and applied aspects of a mathematical discipline with training in applied mathematics, or computer science with study in a science (biological, biomedical, physical, or social). See "Applied Mathematical Sciences" in the College of Liberal Arts section of the Catalog for a list of faculty and a further description of the program.

Genetics

The Ph.D. program in genetics is an interdisciplinary program involving members of the Departments of Biochemistry, Biological Sciences, and Microbiology as well as a number of faculty members in clinical departments. See "Genetics" in the College of Liberal Arts section of the Catalog for a list of participating faculty, degree requirements, and courses offered.

Human Nutrition

The Human Nutrition Program provides interdisciplinary training for doctoral candidates who desire careers in research or teaching in a medical setting. See "Human Nutrition" in the College of Medicine 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), plan sponsor for this Studies Program and a Contemporary Critiques and Culture Program focuses on recent developments in French political thought and social institutions, linguistics, media studies, and literary history. It offers on recent theoretical concepts in the fields of language, psychoanalysis, anthropology, sociology, and philosophy to analyze verbal and visual representational practices in literature, painting, photography, film, and television. The interdisciplinary nature of this program makes it possible for students from many major areas to study with students of other disciplines and cultures. It is of particular value to those who wish to explore the contemporary French theatre in a diversity of disciplines. A recent addition to the program is a special feature designed to encourage students to participate in extracurricular research. The program is the only program of its kind in the United States. Students may concentrate on one of the programs or develop an individual program customized from both study center components. Participating students are registered in the University of Paris III—Cité and are eligible to take selected courses within the University of Paris as well as those directly sponsored 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.

Joint Law and Graduate Degree Programs

Joint programs under which students can simultaneously pursue degrees in the College of Law and the Graduate College have been developed with the law college and a number of departments in the College of Liberal Arts. See the College of Law section of this catalog.

Joint Programs within the Graduate College

Various joint programs have been developed whereby students simultaneously work toward two graduate degrees. Consult the appropriate sections of this Catalog for further information. Established joint programs include Business Administration/Library and Information Science; Economics/Urban and Regional Planning; History and Philosophy of Science; and Tourism.

Medical Science Training Program

The Medical Science Training Program (MSTP) is an interdisciplinary M.S.-Ph.D. program offered jointly by the College of Medicine and the Graduate College. See "Medical Science Training Program" in the College of Medicine section of this Catalog.

Molecular Biology

The Ph.D. program in molecular biology is interdisciplinary in nature, involving members of the Departments of Biological Sciences, Biochemistry, Medicine, Microbiology, Pathology, and Physiology and Biophysics. See "Molecular Biology" in the College of Medicine section of this Catalog.

Neuroscience Program

The Neuroscience Program is designed to provide interdisciplinary and departmental approach to graduate education and research in the study of the central nervous system. This program is under the general direction of the Neuroscience Program in the College of Medicine section of the Catalog.

Graduate/Physician Assistant Joint Programs

Students who already have a baccalauriate degree may pursue either a Master of Science with a major in preventive medicine and environmental health, or a Master of Arts with a major in exercise science in the Graduate College and a Bachelor of Science in the Physician Assistant Program in the College of Medicine. See "Physician Assistant Program" and "Preventive Medicine and Environmental Health" in the College of Medicine sections and "Exercise Science" in the College of Liberal Arts section of the Catalog.

Quality Management and Productivity

The interdepartmental Program in Quality Management and Productivity offers a Bachelor of Science in Quality Management and Productivity. The program itself is the Department of Statistics and Actuarial Science, Industrial Engineering, and Management Sciences, and the program seeks to train students who are interested in the totality of quality management of products and services, an area of increasing importance to business and industry. Details are provided in the College of Liberal Arts section of the Catalog.

Transportation Studies

The Program in Transportation Studies is an interdisciplinary, nondegree-granting 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 in compliance with 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 further details, see "Transportation Studies" in the College of Liberal Arts section of the Catalog.

Urban and Regional Planning

The graduate program in urban and regional planning is a professional master's program that prepares students for potential positions in government agencies, private consulting firms, and strong policy orientation that enables it to draw on the experiences of the institution, reflecting a particular urban or regional problem and to develop workable solutions. Students are encouraged to specialize in transportation and urban development, or energy planning, or housing and economic development. A number of joint degrees are offered. For further details, see "Urban and Regional Planning" in the College of Liberal Arts section of the Catalog.

Research Resources

The major and diverse research activities of the University are centrally administered by the Office of the Vice President for Research, which has a comprehensive program of Graduate College. For further information, see "Research Activities" in the Special Features section of the Catalog.

Financial Assistance

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 VIII, Graduate Approaches" in "Rules and Regulations of the Graduate College" in this section of the Catalog. The following are the primary sources of assistance.
TRAINING AND RESEARCH ASSISTANTSHIPS: Available in most departments, students typically receive a minimum stipend of $5,000 to $10,000 for full-time research assistants. Positions also are eligible for tuition scholarships. Assistants (five-quarter time or more) are classified as residents for fee purposes.

IOWA ARTS FELLOWSHIPS: For five-year University of Iowa graduate students entering M.F.A. programs, stipends are $10,000 for the academic year, with full tuition paid, for as many as two years; subsequent years on demonstrating exceptional progress toward completion of the M.F.A.; 12-month stipend for all subsequent years.

IOWA INCOMING FELLOWSHIPS: One-year awards for doctoral students new to graduate study at the University of Iowa, 12 month stipend of $12,000, with all tuition paid; no departmental service obligations.

GRADUATE OPPORTUNITY FELLOWSHIPS: For five-year graduate students from underrepresented ethnic minority groups; one-year stipend of $9,000 for the academic year.

THE UNIVERSITY OF IOWA FELLOWSHIP PROGRAM: For five-year graduate students entering doctoral programs, stipends are $15,000 per year for a maximum term of five years, with full tuition paid; for as many as four years; departmental participants assume that the recipient will be involved in the University-wide (departmental) fellowship in two years out of four in all such years, recipients may pursue studies, research, or writing full time.

SCHOLARSHIPS: Scholarships provide up to full tuition and fees.

GRADUATE FELLOWSHIPS: Graduate fellowships provide $9,000 for the academic year.

OTHER SOURCES: University and National Direct student loans are available through the University's Office of Student Financial Aid.

Many departments offer additional support through fellowships, 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 resources that are available 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's graduate student body representative organization. Representatives are elected from each graduate 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 their 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 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 a formal admission statement from the director of admissions. Applicants may obtain the proper forms from the Office of Admissions.

In addition to these forms, official transcripts from each undergraduate and graduate institution attended must be submitted to the director of admissions for 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 must take the General (Graduate) Record Examination (GRE) or, for applicants to graduate programs in business administration, the Graduate Management Admission Test (GMAT). Applicants for whom examination data are complete, with the exception of scores on the GRE or GMAT, may be admitted when departmental policy, as defined by the department, permits for graduate studies. The test is given several times a year at test centers established under the direction of Educational Testing Service, Princeton, New Jersey. The judgment of acceptable levels of performance on the test and his weight in the decision will vary from department to department. A student is left to the departments. The graduate departments may require the Graduate Record Examination (GRE) or Graduate Management Examination (GMAT) as a condition of admission. (Advanced Tests are available for candidates in addition to the General Aptitude Test. Inquiries should be directed to the Graduate Record Examination Service, Educational Testing Service, for information on examination availability for the student's advance test. The student should be advised in the department to which the request is addressed.)

C. ENGLISH FOR FOREIGN STUDENTS: Prior to consideration for admission, foreign student applicants whose native language is either Japanese or Chinese, may not have taken the Graduate Record Examination (GRE), Exam for the International Students (TOEFL), Test of English as a Foreign Language (TOEFL), unless they have taken the Graduate Record Examination (GRE), Exam for the International Students (TOEFL), Test of English as a Foreign Language (TOEFL), unless they have had the equivalent of a degree from an accredited college or university in the United States, the United Kingdom, Canada (Ontario, Quebec, and New Brunswick), 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.

Foreign students transferring from unaffiliated degree programs of other universities in the United States who have not taken the GRE or the GMAT, may be admitted when departmental policy, as defined by the department, permits for graduate studies. The candidates must secure a passing grade prior to consideration for admission.

The Graduate College will advise the departments of those students entering the GRE or the GMAT, who, in the judgment of the department, meet the requirements of the college. The student's file will be forwarded with the approval of the department to which the candidate is admitted.

D. EARLY ADMISSION: A student who is a senior in the last semester of a current academic year may be admitted to the Graduate College of The University of Iowa without the usual requirements for admission to the graduate department or major or degree study.

E. CANDIDACY: Only students who have met the minimum requirements for admission and who have been accepted by a department, or who have met the minimum requirements for admission to graduate study, may be admitted to candidacy. The student must be recommended by the department to the Graduate College of The University of Iowa.

F. DECLARATION OF MAJOR AND MASTERS DEGREE: Every student who is admitted to candidacy must file an indication on the application form the department or program of his major and area of specialization. The student must file an indication on his major and minor degree at the time of his candidacy. A change in the major or degree study must be made in the student's candidacy, or in his major and minor degree at the time of his candidacy. The change in the major or minor degree must be made in the student's candidacy, or in his major and minor degree.
average of at least 2.50 (3.00 for doctoral study) and acceptance by the major department, or be dismissed. 3. Special—Students with a valid bachelor's degree from another institution may be admitted as special students. Registration as a special student is allowed for one semester of study in graduate school. Specific regulations for any subsequent session, including another summer session, a special student must fill in an application and be admitted by the department or program to regular or conditional status. A student registering as a special student can take no more than two courses during a semester or eight semester hours during the eight-week summer session.

II. MINIMUM REQUIREMENTS FOR ADMISSION Graduates of any college or university accredited by regional accrediting associations may be admitted to the Graduate College if their academic records meet the minimum standards. For nonresident students, a minimum grade-point average of 3.00 is required for admission to conditional status. A minimum of 2.50 is required for admission to regular status. The grade-point average is computed only on graduate work if the student has completed at least 12 graduate hours. If the student has not completed 12 graduate semester hours, the grade-point average is computed upon the undergraduate and graduate work completed. In cases in which a student applying for admission has a grade-point average below the minimum requirement, admission is not granted. Exception: Above a point to be announced by the Graduate College dean, his or her papers shall be forwarded to the department in question and a decision made. Students applying for admission to a doctoral program with 12 or more semester hours of graduate work must meet a minimum grade-point average of 3.00 on the graduate work. For students with less than 12 semester hours of graduate work, a minimum of 2.70 is required in the graduate work completed.

Departments, or committees in charge of undergraduate degree programs, may, and often do, establish admission requirements that are set forth above for the Graduate College as a whole. Information concerning departmental or program requirements may be obtained directly from the executive of the department concerned.

For State Board of Regents' formal admission requirements, see the Iowa Laws Anaual Code: Board of Regents section of the Catalog.

I. ADMISSION OF FACULTY MEMBERS TO GRADUATE SCHOOL Persons who hold faculty rank of assistant professor (including clinical assistant professor) or above at the University of Northern 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 to request permission to register in a graduate course or courses in the university departmental program to work leading to an advanced degree in that department or courses in the professional or graduate improvement except in the department of his or her appointment or of closely related department. Such petitions must have prior approval of the department of appointment, dean of the college and the department to which study is to be pursued, and the Graduate Council.

II. REGISTRATION

A. ACADEMIC REGISTRATION

Students registered in the Graduate College may register for no more than 15 semester hours of credit in graduate courses. In addition to the minimum 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 completion 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, or nine semester hours if two or more semester hours of undergraduate work are included. The maximum semester-hour registration for students advanced to candidacy for the doctorate and for four-week summer sessions of the 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. Fellowships 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 appointments are permitted to register for the maximum 15 semester hours per semester and the maximum 12 semester hours during the eight-week summer sessions.

B. COURSES NOT INCLUDED IN TOTAL REGISTRATION In addition to a full schedule, a graduate student may register for courses listed 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 advisor and the approval of the dean of the Graduate College.

D. DEDUCED SCHEDULES FOR TEACHING AND RESEARCH ASSISTANTS AND OTHER APPROPRIATES

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 8 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 ten semester hours during a semester or four semester hours during the eight-week summer session.

5. Full-time appointees, including full-time instructors, may register for not more than the 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 trial 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 semester session is permitted only in courses involving special projects, research, individual study, thesis, or research, with the signed approval of the instructor concerned and the Graduate College dean.

G. EXTRAORDINARY REGISTRATION After admission to a departmental program in the Graduate College, registration for work done off campus may be accepted for resilience credit under the following circumstances:

1. TravelingScholar Program of the Committee in Institutional Cooperation (see "Section III")

2. Research at approved locations under the direction of members of the graduate faculty at The University of Iowa

3. Fieldwork as part of a regularly scheduled course or research program

4. Course taught off campus by members of the graduate faculty (see "Section XI.D" and "Section XII.C" for minimum semester hours required on campus for the master's and doctoral degrees)

5. Resilience graduate credit from another Iowa Regents' university (see "Section VIII")

6. As many as nine semester hours of graduate work taken at the State College Graduate Center from faculty other than faculty of the Iowa Regents' system, provided the work is acceptable to the student's major department for the approved degree.

Extraordinary registration does not count toward degree requirements in the following circumstances:

1. Course work transferred from another institution

2. Correspondence courses
H. EXTRAMURAL FEES AND PRIVILEGES

Extramural courses may be counted as residency credit if the student has been admitted to a departmental program in the Graduate College (see "Section C.7.D.) and has established a base. See "Section K.8.E."

I. CORRESPONDENCE COURSES

Graduate correspondence courses do not count as residence credit. 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 entered the Graduate College. In some instances, graduate-level correspondence study credit earned after a student has received a bachelor's degree but before entering the Graduate College may be counted toward an advanced degree with approval of the Graduate College dean upon recommendation of the registrar department. A graduate student may not register for correspondence courses without the approval of the dean or major department and of the Graduate College dean.

J. SYSTEM OF COURSE NUMBERS

Courses primarily for graduate students are numbered 300 and above in each department. Courses up to and including 399 are numbered from 100 to 199. Courses below 100 are not accepted for graduate credit. Graduate credit may be counted for teaching courses such as reading seminars, special study courses, and internships. Only independent study bearing course number of 100 or above.

K. AUDITING OF COURSES

Upon the recommendation of the instructor and the dean, the dean of the Graduate College may permit 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 semester and published by the registrar shall receive the grade of "W" unless the entire registration is withdrawn. These regulations may be waived by the Graduate College dean upon recommendation of the Student Health Director or the Counseling Service. A student withdraws registration after the deadline date, the student must obtain permission from the dean of the Graduate College before being permitted to reenroll.

Section III. Travelling Scholar Program

A. PURPOSE

The program, under the auspices of the Committee on Scholarship and Fellowship, represents 11 universities in the Midwest, that is, allows 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 librarians, and literary collections.

G. PROCEDURE

1. A CIC Traveling Scholar first must be recommended by his or her own graduate advisor, who will nominate a maximum of four students in each department. The dean of each department will approve or disapprove of this nomination. The dean of each department will approve or disapprove of this nomination. The dean of each department will approve or disapprove of this nomination. The dean of each department will approve or disapprove of this nomination. The dean of each department will approve or disapprove of this nomination.

2. After approval by the student's advisor and the faculty member at the host institution, the dean of each department will be notified by the advisor and must approve or disapprove the recommendation. The dean of each department will approve or disapprove the recommendation. The dean of each department will approve or disapprove the recommendation. The dean of each department will approve or disapprove the recommendation.

3. A CIC Traveling Scholar will be registered at the host university, and fees will be collected and kept by the host institution.

4. Check for the travel take will be received at the host 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. NONDOCTORAL STUDENTS

A student, except one on conditional status, shall be placed on probation if, after completing eight semester hours of graduate work, he or she has a cumulative grade-point average of 2.50 or less. The student, except one on conditional status, shall be placed on probation if, after completing eight semester hours of graduate work, he or she has a cumulative grade-point average of 2.50 or less. The student, except one on conditional status, shall be placed on probation if, after completing eight semester hours of graduate work, he or she has a cumulative grade-point average of 2.50 or less. The student, except one on conditional status, shall be placed on probation if, after completing eight semester hours of graduate work, he or she has a cumulative grade-point average of 2.50 or less.

B. DOCTORAL STUDENTS

A doctoral student on regular status shall be placed on probation if, after completing eight semester hours of graduate work, the student's cumulative grade-point average on graduate work done at this University falls below 3.00. If, after completing eight semester hours of graduate work at this University, the student's cumulative grade-point average remains below the required level, the student shall be dropped from the program and denied permission to register unless he or she applies and is accepted for a nondoctoral degree or certificate program. If, after completing the second eight semester hours, the cumulative grade-point average is 3.00, the student is restored to good standing.

C. 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.

D. DEPARTMENTAL REGULATIONS AND DISCIPLINARY PROBATION

In addition to the above, the departmental regulations, requirements, and standards established by the department or program shall be observed. The Dean shall be the final authority on all matters of discipline.

E. ACADEMIC PROGRESS, DEPARTMENTAL PROBATION, AND DISMISSAL

A student who does not meet the minimum academic standards, the department shall warn the student that his or her academic performance does not meet the required standard. The student shall be provided with a reasonable amount of time to meet the standards prior to dismissal.

F. DISMISSAL

If a student does not meet the minimum academic standards, the department shall warn the student that his or her academic performance does not meet the required standard. The student shall be provided with a reasonable amount of time to meet the standards prior to dismissal.

G. 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.

H. DEPARTMENTAL REGULATIONS AND DISCIPLINARY PROBATION

In addition to the above, the departmental regulations, requirements, and standards established by the department or program shall be observed. The Dean shall be the final authority on all matters of discipline.

I. ACADEMIC PROGRESS, DEPARTMENTAL PROBATION, AND DISMISSAL

A student who does not meet the minimum academic standards, the department shall warn the student that his or her academic performance does not meet the required standard. The student shall be provided with a reasonable amount of time to meet the standards prior to dismissal.

J. 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.
dean’s departmental regulations described above. (See “Section N.1-D.”)

F. GRADES

5. GRADE REPORTING FOR DEPARTMENTAL DISMISSAL

Questions involving judgment of performance will not be reviewed beyond the departmental level. If, however, the student feels there has been substance in any procedural irregularity concerning dismissal, the student may request a review by the Graduate College. This review may be conducted by the Graduate College alone, or at the dean’s or a Graduate College committee, consisting of both student and faculty members, to conduct the review and recommend the dean to positive courses of action. The review by the Graduate College is final.

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 courses toward an advanced degree at Iowa must have the approval of the major department and the dean of the Graduate College.

B. RESIDENCE TRANSFER CREDIT

After admission to a departmental program in the Graduate College, residence graduate credit from another Iowa Regent’s university may be counted as residence credit at this student’s university with the approval of the major department and the Office of the Dean of the Graduate College, provided each work is acceptable to the student’s major department on the basis of the department’s acceptable in the applicant’s course. See “Section V.6.”

C. INCLUSION IN CREDIT

For courses or seminars in independent study, thesis, and research, an instructor may report as credit 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 prescribed by the national educational agencies and under such regulations of sanctioning rules as the Graduate Council may authorize from time to time. The extent and duration of the study is subject to the satisfactory performance for a degree to 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 during 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 fall and spring semesters indicate the instructor reports grade only at satisfactory or unsatisfactory. (b) Credit is to be assigned on the basis of total registration number grade and seminar. (c) Courses are to be counted toward specific degree requirements only after the student’s final 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 for specific courses.

7. In both instances, the instructor reports the student’s credit, grade, and date of withdrawal. No credit is assigned unless the student is satisfactory at the time of leaving.

8. The amount of credit in thesis and research registration is to be reported in the registrar to individual instructors on the above basis except that no or no credit may be assigned.

Section VI. Marking System

A. MARKS CARRYING GRADUATE CREDIT


B. MARKS CARRYING NO GRADUATE CREDIT

There are D+, D-, D, F, I, and I- marks.

C. A UDIT

It is assigned when a student registered for at least a credit attempts to audit a course, including any course in which he or she fails to meet the instructor’s requirements for course attendance.

D. INCOMPLETE

The grade of I is to be used only when a student’s work during a course is incomplete. If, in the judgment of the instructor, the student is meeting the requirements for course attendance, a grade of I is assigned.

E. TOTAL, RESEARCH, RESEARCH, INDEPENDENT STUDY, AND SPECIAL PROJECTS

Grades of A and S and U may be used for in thesis, research, independent study, and special projects. A—unsatisfactory means that he or she receives no credit. Credit is to be assigned on the basis of total registration number grade and seminar. Courses are to be counted toward specific degree requirements only after the student’s final and then only with the department’s approval.

F. GRADUATE STUDIES

5. Credit must 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 advisor approve the registration. Amortization for satisfactory/unsatisfactory grading in these courses is accomplished by an option with the department. No changes from letter grades to satisfactory/unsatisfactory grades will be allowed after these changes.

6. Upon graduation the student must have a minimum of 3.50 in the cumulative grade point average (CGPA) or 3.50 in the CGPA for the entering semester. A grade of A has a value of 4.0; a grade of B has a value of 3.0; and so forth. The cumulative grade point average for the student must be at least 3.0.

Section VII. Graduate Appointments

A. SCHOLARSHIPS

1. Eligibility for graduate scholarships and fellowships include: (a) regular in the Graduate College; (b) continuous graduate-student status; (c) a minimum grade point average of 3.0; (d) a 3.0 grade point average the cumulative grade average has been maintained as to not exceed 4.00.
3. Recommendations for graduate scholarships may be made to the Graduate College by the appropriate departmental executive, director, or dean. A graduate scholarship may be awarded to a student who, in the opinion of the department, has demonstrated academic ability. 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. Fellowships must be registered in full-time students. The primary purpose of the awards is to permit an advanced student to complete her or his dissertation or creative project and take the degree. Other terms of the award will be established by the Graduate College, 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 apprenticeship 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 paid in proportion, and a limited academic schedule is permitted ("Section II:3"). Appointments are made for the academic year, and appointments may be made for the remainder of time by special arrangement. Stipends vary with the qualifications of the appointee and the amount of service rendered. Faculty research assistantships are available to the Graduate College in the form of fellowships, part-time employment on research projects, or part-time teaching. Inquiries should be addressed directly to the major department.

J. RESEARCH SCHOLARSHIPS AND POSTDOCTORAL FELLOWSHIPS

These provide for independent research. Appointments are made through the Office of the Vice President for Academic Affairs.

Section VIII. ADVANCED PROGRAMS OFFERED IN THE GRADUATE COLLEGE

The main axis in which the Graduate College offers degree programs is based on the "Graduate 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 ten weeks after the end of the semester or quarter after the part of the summer session in which the degree will be conferred. The student must have the application signed by his or her advisor. Failure to do so may result in the application being denied. A student must file the application by the deadline will result in postponement of graduation in 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 who are not enrolled in that semester must register in the University campus during that session. Students may register for this requirement by registering for independent study, research, or other courses in the various departments. Doctoral candidates who have completed all work except the final examination may register for the comprehensive examination described in "Section XIII. E." If such registration is appropriate, Master's candidates who have completed all work except the final examination may register for S.C. Master's Final Registration as a low equivalent for the "postcomprehensive examination" if such registration is appropriate. Registration in the corresponding course will not satisfy this requirement.

Students completing all requirements (including the final examination and thesis deposit) in a graduate degree will be enrolled in the degree while enrolled in the thesis deposit. Students completing all requirements (including the final examination and thesis deposit) in graduate degrees in the following semester without additional registration.

Section X. MASTER'S DEGREES

A. KINDS OF DEGREES

Master's programs requiring a minimum of 30 semester hours include the Master of Arts degree, Master of Science degree, Master of Business Administration degree, Master of Divinity, Master of Journalism, and Master of Social Work degree. Each master's degree is approved by the graduate faculty. The plan shall be the requirements for the degree approved by the graduate faculty. See also "Section IV.C. Departmental Regulations and Procedures of the Master's Degree."
degree at The University of Iowa. The work accepted from the student's major field of study in the Graduate College and 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 nondegree students in the Graduate College only when the student is registered in an appropriate joint degree program.

G. TWO MASTER'S DEGREES

The granting of 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 this 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 characterizations not later than four weeks before the graduation date on which the degree is to be conferred. (See the Graduate College Thesis Guide.) After approval by the Graduate College and by the thesis committee, the thesis must be deposited with the Graduate College not later than five days before graduation.

The thesis committee shall consist of at least three members of the graduate faculty and may or may not include the final examination committee. (See "H. Examining Committee.")

I. MASTER'S DEGREE WITHOUT THESIS

A master's degree without a thesis consisting of at least 30 semester hours of graduate study, 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 all master's degrees include a final examination which, at the discretion of the major department, may be written or oral. 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 examination is oral, 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.

Upon recommendation of a department, the comprehensive examination for a doctoral degree may be substituted for the master's examination.

II. 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 or more of the committee members 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 XII. Two-Year Degrees

A. MASTER OF FINE ARTS DEGREE

This degree is awarded for creative work in the visual arts, dramatic or music, dance, or literature. It is designed for students preparing themselves professionally in such fields as painting, design, music, decoration, writing, performing arts, producing, stage design, theatrical performance, composition, experimentation, choreography, poetry, fiction, and translation. Central to the program, the thesis may consist of a novel, a painting, a play, a musical composition, a dance performance, or any other approved artistic accomplishment.

The program for the Master of Fine Arts degree requires at least two years of residence credit in a graduate college. This requires a minimum of 48 semester hours of graduate credit or 36, of which must qualify for residence credit at this university. A Master of Arts degree may be earned while the student is working toward the Master of Fine Arts degree, but the student must meet all requirements for each degree separately, with a minimum combined total of 60 semester hours of graduate credit.

For other requirements, see "Section XII, B. Plan of Study;" "C. Major and Related Fields;" "E. Reduction of Credit;" "H. Master's Degree with Thesis;" "F. Final Examination;" and "E. Examining Committee.

B. SPECIALISTS IN EDUCATION DEGREE

This degree is granted upon completion of a prescribed two-year, postbaccalaureate program designed for students preparing themselves professionally in such fields as teaching, administration, and supervision, and special service.

Of the minimum of 60 semester hours required for the degree, at least 34 semester hours must be completed in residence at the university, of which 14 semester hours must be earned while the student is on campus within the first 16-month period or during two summer sessions.

Twelve-eight of the 60 semester hours are prescribed in the area of specialization. The others are in cognate fields, supervised experience, and other 12 of the 60 semester hours of research culminate in a written paper.

Courses successfully completed ten or more years prior to the final examination will be evaluated by the major department in order to determine the quality of credit that shall be allowed for such work. Limitation of such old work will be reviewed by the student's college or department at the graduate college or departmental executive at the time of submission of the plan of study.

Other requirements and regulations applicable to the educational specialist degree are the same as prescribed for the one-year master's degree in "Section X. B. Plan of Study;" "C. Major and Related Fields;" "F. Final Examination;" and "E. Examining Committee.

A master's degree may be earned while in residence for the educational specialist degree provided the student meets all the requirements for the master's degree in addition.

C. MASTER OF SOCIAL WORK DEGREE

The M.S.W. degree is conferred by the University upon those students who give evidence of knowledge and competence in the field of practice by meeting the following requirements:

1. A minimum of 24 semester hours in residence at The University of Iowa.

2. A minimum of 60 semester hours in graduate social work, including a research requirement;

3. A final comprehensive examination, written or oral or both, covering all work for the degree.

The requirement of 60 semester hours must be interpreted to mean that a student who can satisfactorily complete 24 semester hours of part or parts of the graduate curriculum in social work may be permitted, upon recommendation of the faculty of the school, to qualify for the M.S.W. degree on less than 60 semester hours. Students with 48 semester hours or less may apply for the degree on less than 60 semester hours of graduate social work study.

The curriculum is organized into four general areas: social work practice, human growth and behavior, the social services, and research. During the two-year graduate program, class work is combined with field practice in various settings. Once class work and field practice are arranged sequentially, students can enter the School of Social Work only in August.

For other requirements, see "Section XIII, B. Plan of Study;" "C. Major and Related Fields;" "F. Limit on Professional Courses;" "H. Master's Degree with Thesis;" and "E. Examining Committee.

Section XIII. 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 completion in the discipline. The Doctor of Musical Arts degree indicates marked excellence in performance and pedagogy.
8. REQUIRED COURSES

The candidate must pass a comprehensive examination covering written or oral parts or both at the discretion of the major department. Admittance 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 assure the adequate preparation of the candidate's major and related fields of study, including the kinds of research in which he or she has been engaged.

9. LINT 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 or a professional degree in the field of study. Work accepted from the professional colleges must be directly related to the student's major field of study in the Graduate College, and the year 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 academic year in which it must be spent in residence as a doctoral student on the campus of this university.

10. JURY PROGRAM FOR BACCALAUREATE 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 degree. The master's examination may be conducted with the comprehensive examination for the doctorate for those candidates. The examining committee will report its action 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 which leads directly to the doctoral degree without earning the master's degree as an intervening part.

11. REQUIREMENT IN FOREIGN LANGUAGES

There is no general Graduate College requirement in foreign languages. There are departments that do require competence in one or more foreign languages established as standards in the written and oral level of competence, as well as methods of testing. Specific requirements will be determined by the department in the Graduate College. The student attending classes is responsible for reporting completion of requirements to the registrar or student advisor.

12. SPECIFICATIONS OF DEPARTMENTAL REQUIREMENTS

Specifications of departmental requirements in foreign languages are filed in the Graduate College office and may be changed upon the initiative of the department.

13. COMPREHENSIVE EXAMINATION

The candidate must pass a comprehensive examination consisting of written or oral parts or both at the discretion of the major department. Admittance 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 assure the adequate preparation of the candidate's major and related fields of study, including the kinds of research in which he or she has been engaged.

The comprehensive examination is not a doctoral qualifying examination. It is intended to ensure 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 in the doctoral degree.

The comprehensive examination will be evaluated by a committee consisting of the committee that requested as satisfactory the satisfactory with recommendation, or unsatisfactory to the Graduate College office within 14 days after the examination. Two "unsatisfactory" votes will fail the committee report unsatisfactory.

In the event of a report with two of these three votes of "unsatisfactory with reservations," the other two votes of the committee should be recorded with the report form. The statement must specify the first allowed for satisfying the objections and must be specific in defining the area of further examination in a particular area is required, or in defining any additional courses or other procedures that are required. The candidate will not be admitted to the final oral examination until such requirements have been satisfied. The executive of the major department shall promptly send a written report to the Graduate College giving the date of removal of "reservation."

A vote of a report of unsatisfactory or a comprehensive examination that is unsatisfactory with reservations shall be reported to the student by the major department; the student may appeal the grade to the Graduate College office within four months after the final exam. The examining committee may be repeated only once at the option of the department.

14. POSTCOMPARISON REINSTATEMENT

The student will be required to register each semester after passing the comprehensive examination until the degree is awarded. A student that is reinstated to candidacy for the student who has not completed the degree for more than four months after the first examination. The examination may be repeated only once at the option of the department.

15. POSTCOMMENPARISON REGISTRATION

The student will be required to register each semester after passing the comprehensive examination until the degree is awarded. A student that is reinstated to candidacy for the student who has not completed the degree for more than four months after the first examination. The examination may be repeated only once at the option of the department.

16. POSTCOMMENPARISON REGISTRATION

The student will be required to register each semester after passing the comprehensive examination until the degree is awarded. A student that is reinstated to candidacy for the student who has not completed the degree for more than four months after the first examination. The examination may be repeated only once at the option of the department.
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 ten days prior to the graduation date. The final deposit can be no later than the end of the semester (summer excluded) following the session in which the final examination is passed. Failure to meet this deadline will require reexamination of the student.

Regulations regarding preparation of the dissertation must be guided 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 advisor. The abstract is published by 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 respect from (e.g., printing, style, performance in music) the Graduate Library will help the student and faculty advisor with appropriate methods of preparing the work, if such help is needed.

Written dissertations shall be made available to all members of the qualifying committee not later than two weeks before the date of the examination.

Final Examination

The work for the degree culminates in a final 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 content of the investigation.

The final examination may not be held until the next session after the student passes the comprehensive examination. No credit is accepted for first degree of the Graduate College. However, a student must pass the final examination no later than four 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 "III. 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 and the grade are sent to the Graduation Office of 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 withdraw the student from the dissertation. A grade of unsatisfactory on the final examination, the candidate may not present himself to the dissertation. In the event of a report of unsatisfactory the candidate may not present himself to the dissertation. In the event of a report of unsatisfactory the candidate may not present himself for reexamination until the next session. The examination may be repeated only once, if the option of the major department.

Examination Committees

The comprehensive and final examinations are conducted by committees of no fewer than five members of the graduate faculty appointed by the Dean. Each department is upon recommendation of the major department, except that departments may require the Dean to reappoint one of the five members of the graduate faculty by a qualified scholar of the major department. 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 Dean of the College may appoint additional qualified persons not necessary members of the graduate faculty to serve as voting members of the examining committee. A voting member may be added at the discretion of the Dean of the College.

Section XIII. Exceptions

Petitions to waive these regulations may be made for appropriate justifiable reasons on behalf of any graduate student through the departmental executive to the Dean and the Graduate Council.

Courses

000-082 Ph.D., Nanocomposites: 0 s.h.

081-111 Psychology in Education: 0 s.h.

081-113 Sociology in Education: 0 s.h.

081-114 English Language and Literature: 0 s.h.

081-115 History of Science and Technology: 0 s.h.

081-116 Philosophy of Science and Technology: 0 s.h.

081-117 Computer Science: 0 s.h.

081-118 Mathematics: 0 s.h.

081-119 Physics: 0 s.h.

081-120 Chemistry: 0 s.h.

081-121 Biology: 0 s.h.

081-122 Environmental Science: 0 s.h.

081-123 Social Science: 0 s.h.

081-124 Economics: 0 s.h.

081-125 Business Administration: 0 s.h.

081-126 Law: 0 s.h.

081-127 Journalism: 0 s.h.

081-128 Mass Communication: 0 s.h.

081-129 Political Science: 0 s.h.

081-131 Public Administration: 0 s.h.

081-132 International Relations: 0 s.h.

081-133 International Law: 0 s.h.
In makeup for a University Theatre production.
The objective of formal legal education is to establish a solid foundation for a lifetime of professional growth. The educational elements necessary to build that foundation are varied. For example, through familiarity with the influences of legal principles and the operation of legal institutions is an important component.

The University of Iowa plans equal emphasis on developing knowledge, law student's skills, and an appreciation of the role of law and lawyers in society. These objectives are best achieved through an educational program that encourages active student participation in the learning process and creates regular opportunities for individuals and small groups to confront challenging questions which are genuinely interesting in each student's professional development.

The University of Iowa College of Law confines upon its graduates the degree of Juris Doctor (J.D.). Students may elect a joint degree program, simultaneously earning both a law degree and a master's degree in the Graduate College. Persons who hold a J.D. may pursue the LL.M. in International and Comparative Law.

A law degree from Iowa is a highly respected credential in the job market; Iowa graduates hold prominent positions on the bench, in the bar, in government, in business, and in education throughout the country.

Full-Time Policy

The faculty believes that students receive a better legal education when they devote full time to their studies and their legal responsibilities. For this reason, students are expected to pursue their law career full time. This policy is consistent with the accreditation standards of the American Bar Association and the American Bar Association.

In extraordinary circumstances, it may be possible for students to enroll for fewer than 10 semester hours per semester. Students who believe they may need or wish to work at a reduced full-time schedule should contact the dean's office before registering for classes.

Entrance Dates

The college offers two starting dates in order to meet the needs of the students that start the program in the fall of the following year. Students are encouraged to enroll in the fall of their junior year of study; these students also may attend summer school at any point during their academic careers.

The May entering class may number up to 45. Students enrolling in summer school should be aware of the fall semester dates.

First-Year Curriculum

Development of professional skills begins in the first year with emphasis on careful reading, general writing skills, legal research, and argumentation. Students concentrate on developing analytical skills for example, reading and understanding judicial opinions and gaining a sense of the role of legal institutions in society.

First-year courses are as follows:

Full Semester

- 91:102 Introduction to Legal Reasoning . 1.5 hour
- 91:120 Contracts and Sales . 3.5 hour
- 91:124 Criminal Law . 3.5 hour

Spring Semester

- 91:104 Civil Procedure . 2.5 hour
- 91:165 Constitutional Law . 3.5 hour
- 91:227 Contracts and Sales . 3.5 hour
- 91:302 Property . 3.5 hour

Legal Bibliography

Students who enter law school in May take all of the above over the summer session and two regular academic semesters, plus 91:210 Appellate Advocacy 1 and 2 to 12 semester hours of electives.

First-year students are expected to take all first-year courses and may not register for different courses or fewer hours without permission of the associate dean.

First-year students may switch to the regular three-year sequence of study.

Both the accelerated and regular programs consist of 90 semester hours of 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 dean or the dean's representative.

No student may take more than 18 semester hours per semester or 12 semester hours in the summer session without permission of the dean or the dean's representative.

Summer Session

The summer session contains a period of two weekends each week during which approximately 25 to 35 hours are required to meet the requirements of the three-week session. No students may register for 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 registration with the court no more than 60 days after beginning law school. Details are available from the dean's office or from the clerk of the Iowa Supreme Court.

Program of Study

To be eligible for a law degree, a student must receive course credit for 90 semester hours; take and complete all required courses; satisfy the writing requirements; satisfy the residence requirements; and achieve a cumulative grade-point average of at least 60 (C).

The minimum academic term is 12 weeks. The academic term is one of the factors in the Iowa Bar Exam. Each term may be completed on a full-time basis.

First-Year Courses

- 91:102 Introduction to Legal Reasoning . 1.5 hour
- 91:120 Contracts and Sales . 3.5 hour
- 91:124 Criminal Law . 3.5 hour

Law 373
Law

Writing Requirement
All students must earn free writing credits in order to graduate. They earn one of the credits with satisfactory completion of 912-100 Applicable Law I. The remaining two may be earned through any combination of courses and activities that carry writing credit, including seminar papers, small section writing courses, independent research projects, 913-408-409 Legal Clinics, 914-412 Client Counseling Board, 915-402 Moot Court Board, sponsored appellate advocacy activities, and judicials, including the Iowa Law Review, Journal of Corporation Law, 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 23-25 semester hours of course work: 917-242-243 Corporations I and II; 21-25 semester hours, 919-116 Business Planning (14 semester hours), 911-117 Corporate Finance (13 semester hours), 914-188 Securities Regulation (3 semester hours), 913-243 Federal Income tax (3 semester hours), 912-253 Employment Discrimination: The Law of (3 semester hours), and 915-254 Employees Discrimination: Proof of (12 semester hours).

Independent Research and Seminars
Students may register for 1-3 semester hours of independent research, writing the term between semester hours of credit. In selecting topics for independent research or seminars, students should keep in mind that papers they write may be eligible for entry in one or several competitions.

More writing may be taken for up to 5 semester hours including writing credits. The usual format is 3-5 semester hours of credit for the class portion (usually taken in the fall), and up to 4 semester hours for the preparation of the seminar (usually done in the spring).

Legal Clinic, Internships, Clerkships
Students who have completed one-half of the work toward their J.D. degrees 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 Legal Clinic Program.

Students in the program are placed in law offices in Iowa City or the surrounding area, where they act as staff attorneys, assuming all phases of the legal process. Typical placements include Student Legal Services, the Iowa City Attorney Service Corporation, Iowa City Civil and Criminal Bar Association, and uh. local law firms. Students are paid on an hourly basis for their work. The clinic offers clients a valuable service while providing students with practical experience in legal practice.

Joint Law and Graduate Degree Program
The college has developed programs with a number of 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 hours for the J.D. degree. 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 courses to be completed for the J.D. that may be counted toward the graduate degree.

Joint graduate degree programs have been initiated with the Departments of Accounting, American Studies, Business Administration, Computer Science, Counseling Psychology, Library, Learning, and Law Studies, English, Finance, Journalism and Mass Communications, History, Geography, and Health Administration, International Relations and Human Resources, Law, and Information Science. Music, Philosophy, Political Science, Psychology, Sociology, Social Work, Spanish, and Urban and Regional Planning.

Many departments have joint program advisors. For more information, contact the administrative 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 college's four units of international, comparative, and foreign law.

It does so essentially for three reasons. First, virtually every lawyer in this era of accelerating global interdependence may be confronted by clients that require knowledge and understanding of international law and foreign legal systems. Second, lawyers are often called upon to advise, directly or indirectly, the legal and political leaders of U.S. foreign policy. And third, in offering unique insights into the law of both law and legal process, the study of international and comparative law helps establish intellectual foundations vital to superior lawyering skills.

American and foreign students with a J.D. are eligible to work toward the Master of Law (LL.M.) in International and Comparative Law. Candidates from the United States must have earned a baccalaureate degree from an approved college or university 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 that maintains equivalent standards. Foreign applicants who hold degrees from institutions other than English-language universities must score at least 570 on the Test of English as a Foreign Language (TOEFL)

LL.M. candidates are encouraged to use the college's programs in international and comparative program of study. Each student works with a faculty advisor or coordinator course selection.

University of Iowa law students who took the LL.M. must complete 114 semester hours over the four years of law school for the J.D. degree; 24 of the 114 must be in international and comparative law courses. Students must have taken or passed all the courses that are a requirement for the preliminary J.D. degree.

Cocurricular Programs
Client Counseling
In the client counseling program, students are given the opportunity to work with Iowa City and regional law firms. They gain experience in researching and writing legal memos, and actual legal problems arising in the course of their activities.

Client Counseling (911-401), offered to 36 second-year law students in 2015, allows students to work individually or in small teams with attorneys. The course provides hands-on experience in conducting legal research, analyzing legal problems, and preparing legal documents. The program also provides an opportunity for students to work with attorneys who are active in the practice of law.

Applicants to the Client Counseling are chosen by the Client Counseling I and II participants in the Client Counseling II. This program is similar to Clinic Counseling I but more intense. The clinic client counseling program is held in the
Financial Aid

The College of Law administers an extensive financial aid program designed to help student meet their educational expenses while attending law school. Most aid is from federal, state, and private sources.

Two different loan programs are awarded directly by the college through its admissions office: federally subsidized Perkins Loans and Iowa Law Foundation Loans, which are awarded to students matriculating at the College of Law. Both loans are awarded on the basis of eligibility determined on the Federal Student Aid (FSF) application, processed by the American College Testing Service (ACT), and the University’s Office of Student Financial Aid.

All students who wish to receive any type of aid from the college must submit the FSF to ACT by January 15 for the following academic year. For more information, contact the College of Law Financial Aid office.

The college also has a limited amount of scholarship money, awarded on need and merit. For entering students, scholarships are awarded on SAT score and academic record, with need assessment through the FSF.

A limited number of Merit Scholarships are awarded without regard to need; funded through private gifts, they are offered to students who present the strongest credentials. Recipients are identified by the admissions committee and are informed of their status as Merit Scholars when they are admitted to the College of Law.

Selected Scholarships

Adams-Coburn Law Scholarship Fund: for second or third-year law students, preferably from the metropolitan area of Des Moines.

P. Arnold Duus: awarded on the basis of merit and need.

D.J. Lutgert: for students who display a strong academic record, personal achievement, and the potential to contribute significantly to the legal profession.

J.P. Lutgert: awarded to Iowa residents with financial need who plan to practice in Iowa.

E.A. McDermeit International: for third-year students specializing in international law.

O.K. Paton Memorial: for students who have been in the Bar Muster Bailey and dx.

Victor Pomerantz: for students from the Midwestern states who have shown high academic achievement.

Lucille and Walter Stewart Fund: for students and deserving students who plan to practice in Iowa.

Jack R. Vollmer Fund: for students who were born in or who completed grades 1 to 12 in Iowa and who have earned a bachelor’s degree from the University of Iowa or who earned an Iowa high school diploma, with priority granted to persons in the seventh (seventh) class.

Assistships

Most faculty members at the college hire research assistants at a modest hourly salary. Out-of-town students receive in-state tuition rates, and up to 10 hours per week of student work.

Employment

Law students may obtain part-time positions at the law school to a number of different programs. Law professors frequently supervise research assistants. The law school employs students as research assistants, and students may obtain positions as clerks in private firms, as clerks for state and federal courts, or as clerks at the law school's legal clinic.

Admission

Applicants for admission must have earned a baccalaureate degree from an approved college or university prior to commencing work in the University of Iowa College of Law. The services that College of Law graduates may be called upon to perform are in demand, and the possible fields of endeavor are broad and diverse, and the college presumes to uniform undergraduate programs 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 talents and interests.

In strong agreement with the three basic objectives recommended by a committee of the Association of American Law Schools, 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 the student should attend an institution of higher learning for the 'full life through liberal education.' It is for this reason that the cornell is considered by many to be the broadest perspective for detailed specialization.

Application Procedures and Materials

All application materials must be received by the University of Iowa Director of Admissions by March 1 of the preceding summer. All materials should be submitted by the deadline to be considered. Additional information about the application process is available from the Director of Admissions at the University of Iowa College of Law.

Assistships

Most faculty members at the college hire research assistants at a modest hourly salary.
Academic Policies

Residence Requirements
To satisfy the academic residence requirements, students must complete 60 weeks of class during which they are enrolled for a minimum of ten class hours per week. Part-time credit is earned pro rata when fewer than ten hours are taken.

Full residential credit is awarded only when a student enrolls for ten or more class hours during the term and earns credit for at least 30 semester hours. During the summer term, full residential credit is earned only when a student earns a minimum of 4 semester hours for each summer session attended.

Transfer Credit
No more than two semesters of residency (30 weeks of full-time residence) and no more than 30 semester hours may be transferred from another law school. No credit is transferable for any course in which a grade lower than C is earned. Grades received at another law school are not counted in calculating the weighted cumulative grade point average.

Courses Taken Prior to Admission to the College of Law
Except for transfer students from other law schools, students must 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 graded courses before being admitted to 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 the college or at an affiliated law school while they were graduate students of the Graduate College (maximum of 12 hours) and before they were admitted to the College of Law. In deciding whether to award credit for each course, the dean and the admissions committee consider the nature of the course, the grade received (minimum of C), how much time has passed 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 dean. In special permission of the "instructor" is indicated in the course catalog, the student also must secure the instructor's signature.

Students not enrolled in a joint degree program may apply toward the J.D. a maximum of 6 semester hours earned in courses outside the College of Law. Such courses are approved only if they contribute to the professional competence of an attorney or broaden the student's understanding of law, the legal process, or any particular legal subject. More information about limitations on accreditation of non-College of Law courses is available from the registrar's office.

Externships
Students may be able to arrange externships for academic credit with certain nonprofit organizations and government agencies. Most externships are available for the summer, for a maximum of 6 semester hours of credit. Externships for 6 to 15 semester hours 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 clinical credit.

Recent externships have been arranged with the U.S. Department of Justice, a U.S. district court judge in Elkhart, a bankruptcy judge in Los Angeles, 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 90, the lowest 55. No academic grade is given for grades below 60.0 or for grades of "F." No numerical grade may be translated into letter grades as follows.

<table>
<thead>
<tr>
<th>Numerical Grade</th>
<th>Letter Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>90-85</td>
<td>A</td>
</tr>
<tr>
<td>84-79</td>
<td>B+</td>
</tr>
<tr>
<td>78-73</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>

Students may receive credit for courses or "pass" grades for nonparalegal academic conduct, for example, participation. Such reasons are subject to appropriate due process.

With the Dean's permission, a student may receive a course in which he or she has received a failing grade. The second grade is recorded either as "pass" in grade of 65 or higher or "fail" and is not used to compute the student's cumulative grade point average. Rather, the failing grade received for the course remains on the transcript and is used in computing the grade point average.

If the course being repeated is a terminal year course, the dean designates the section in which the student will be assigned.

The course does not apply to 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
For students taking courses pass/fail, the "instructor supervisor" or instructor is required to assign a numerical grade (i.e., between 50 and 55) or failing academic performance. Individual faculty
members may allow students to withdraw rather than receive a failing grade.

Miscellaneous Grading Marks
Many other than "pass," "fail," and numerical grades are as follows:

Warsaw withdrawn. It carries no course or residency credit and is not used in computing the cumulative grade-point average. A grade of 1.0 may be reported only in exceptional cases and only if the unshaded part of the work is small and it is understood for reasons acceptable to the instructor, and if the student's standing in the course is satisfactory. Students are responsible for completing the unshaded work during their next term of residence.

Class Ranking
Students in the top percent in each class may be informed of their exact rank; grade-point averages at the 6.5 percentile and 62.5 percentile are noted.

Students are ranked following the fall semester, spring semester, and summer sessions each year. Final class standing is based on the September ranking and includes students who completed all graduation requirements in August, May, and the previous December. For purposes of placing undergraduate students, the same system is used, based on the expected graduation date.

Release of Transcripts
A student's grades are not given to persons outside the College of Law, including prospective employers, without written permission of the student.

Class Attendance and Preparation
Students must be regular and punctual in attending classes and must be prepared to participate in class discussions. Students may be dropped from class at the discretion of the instructor, for excessive absence or poor academic performance. Students also are expected to attend special class meetings and be punctual in submitting course assignments, memos, and papers.

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 name corresponding to the student's number 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 retain 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 schedule one only with permission of the instructor.

Students usually reschedule exams on the Saturday morning immediately following regularly scheduled exams. Whenever possible, the dean sets aside four days as an appointment study period between the end of regular classes and the final regularly scheduled upperclass exams.

Exam Policy for Students Who Need Extra Time
Students at a substantial disadvantage in taking timed exams should receive additional time to complete the exam, commensurate with the extent of their disadvantage. Disabilities include not having English as a primary language at the time of the exam, or having a physical or other recognized medical disability. Judgments concerning eligibility and the amount of additional time to be provided are made by the instructor of the course in which the exam is to be taken. Students seeking additional time must make a request to the registrar's office at least two weeks before the end of classes.

Drop/Add Policy
Students may add or drop a regularly scheduled course or seminar during the first two weeks of classes. After the first two weeks, students must have consent of the instructor to add or drop a course.

Students may not drop a course once the final examination in the course has been distributed. Individual instructors may set a policy of not permitting drops past a certain time limit, involved in hardship cases, they are encouraged to distribute written notices of their policies during the first week of classes.

A student who, after two weeks, elects a course for reasons not related to hardship may not rescind in the course in a later semester without the instructor's permission.

Students who wish to drop an Apparel Advocacy or, if not meeting course or seminars required during the first week of classes may be dropped from the course and not receive a grade.

Withdrawal
First-year and second-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 complete with other students for the year in which they wish to return. The reasons for the withdrawal and the quality of work done prior to withdrawal or allow to re-enroll is 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 who fail to enroll for fewer than 27 semester hours of credit at the date of withdrawal or failure to enroll.

The assistant dean may grant a second or third withdrawal if they have not been granted a leave of absence for up to one year, if the dean finds 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 pre-registration 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.

Academic Advising
Associate Dean for Academic Affairs: The associate dean for academic affairs and admissions works on academic programs and problems of the law school and coordinates the activities of the admissions office.

Adjunct Dean for Student Affairs: The assistant dean for student affairs helps students plan their academic careers and scheduling that the registrar cannot oversee.

Assistant dean also counsels and makes referrals concerning personal, family, and professional problems that interfere with students' law school careers.

Advisor: Each faculty member advises no more than 40 students.

Advisees: Faculty members advise on course selection and academic success.

Small Section Instructors: Small section instructors advise students in their small sections, during student's first year of study.

Ombudsperson: Each year one or two tenured faculty members are selected by the faculty. The Student Law Association can also refer students who have a problem or grievance should visit 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 reported to the registrar for information about course enrollment, transferring, residence requirements, joint program status, student certification for various loan agencies and state bar applications, and progress toward graduation.
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Interim dean: James H. Clifton
Associate dean, academic affairs: Joe Montgomery
Associate dean, continuing medical education: Richard P. Wolfe
Associate dean, medical student affairs and
curriculum: Paul D. Parsons
Associate dean, Veterans Affairs: John E. Kind
Assistant dean, administration and finance:
William L. Linkhege
Consultant to the dean: Woodrow W. Monty, Paul
M. Selchik
Assistant to the dean: Richard E. Scheele
Degrees: B.S., M.A., M.D., M.P.T., M.S., Ph.D.
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 College of Medicine, Dentistry, Nursing, and Pharmacy but also in the life sciences areas of the College of Liberal Arts and the health-related programs of other colleges. Additionally, it serves health professionals from throughout the Midwest who take part in a year-round program of continuing medical education. As leaders in the trial and tracking of physician's update their knowledge and skills through colloquiums, short courses, clinics, and conferences each year. It also expands and maintains educational opportunities to outreach health centers of the state, and it provides a statewide educational health care resource.

Beyond its academic responsibilities as the only college to laws that often work toward 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 staff and serve on state and regional health planning councils, health boards, and various health agencies; some faculty also take part in the University's Center for Health Services Research.

The College of Medicine is responsible for the university medical science programs of education for physicians assistants, medical technology, and medical and medical science technologies.

Medical and associate medical science students have several opportunities to gain experience physicians' offices and community hospitals in both rural and urban settings. The college offers seven practical affiliated residency programs in its cities throughout the state. The college promotes and sponsors experimental programs that offer opportunities for students to participate in medical care, research, and 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 College of Medicine meets the requirements of all state and national boards. The college supports a college of the University of Chicago and all other programs and administration by the College of Medicine are accredited by their respective professional boards.

Faculty

Nearly all College of Medicine faculty members are full-time in work and research being part of our teaching, research, and service faculty, have earned national and international honors.

Graduate Programs

The college offers programs leading to graduate degrees through the College of Medicine in anatomy, physiology, microbiology, medicine, and health administration. It offers preventive medicine and environmental health, and radiation biology. In addition, graduate degree programs leading to a master's degree are offered in pathology and physical therapy.

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 preparatory training in medical, medical sciences, and allied sciences with emphasis on research and teaching. With support from the National Institute of Health, the program integrates the requirements for doctoral training in sciences basic to medicine with the full clinical requirements of the medical curriculum. The program commits to seven years of study. Further details are given in the program description.

Combined M.D.-Master's Degree Programs

Students who wish to pursue the M.D. degree in combination with a master's degree program must first admission to both the College of Medicine and the Graduate College and must make formal arrangements with the graduate department chair and the associate dean for medical students affairs of the College of Medicine.

Interdisciplinary Programs and Centers

Interdisciplinary programs and centers have been developed that draw strength from the faculty of the college and the facilities available to them, without regard to their departmental units or the organization of graduate and postgraduate training. Notable among these is the Program in Graduate Education in Independence, in which degree is not offered; students determine emphasis through appropriate selection of a study program. Further information is available from the associate dean for graduate studies.

The following centers are subdivisions of the College of Medicine.

Center for Health Services Research

The Center for Health Services Research (CHSR) has been the research division of the Graduate Program in Hospital and Health Administration since 1961. It is the first in the country to be a broad-based program of health services research.

With the coordination and support of the CHSR, faculty and staff from colleges and departments throughout the University investigate the organization, delivery, efficacy, and financing of health care services.

CHSR interests embrace a broad spectrum of perspectives and disciplines, including economics, geography, organizational behavior, psychology, operations research, sociology, preventive medicine and environmental health, and community medicine, nursing, and clinical medicine. Through research activities, the center promotes links among health organizations throughout the Midwest.

CHSR also hosts frequent exchanges with professional and provides association, policy and planning groups, insurance organizations, health delivery institutions, and other members of the health services research community.

Clinical Research Center

The Clinical Research Center provides the setting for patient-oriented research of disease processes. Studies of normal human physiology and biochemistry are also conducted. The center is a secure unit with its own beds, nurses, and training staff, and it is financed by federal funds. Evolving laboratory members to conduct carefully supervised studies that could not be accomplished with equal precision by drawing upon the resources of existing beds at the affiliated hospitals.

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 neurology. The seven research units of the MHCRC conduct the necessary integrative and interdisciplinary research to advance the knowledge of the disease.

Cardiovascular Research Center

The Cardiovascular Research Center coordinates research and teaching programs related to cardiovascular diseases and encompasses the following research units: the Medical Research Board-funded programs. Project Grant on the Regulation of the Circulation in Pathological States, the Specialized Center of Research (SCR) in Arteriosclerosis, SDB in Coronary and Vascular Diseases, SCOR in Congenital and Cardiovascular Diseases, and SDB in Congenital and Cardiovascular Diseases, SCOR in Congenital and Cardiovascular Diseases.
Cancer Center
A Cancer Center was established in 1980 to coordinate the efforts 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 viewpoints of neuroanatomy, neurochemistry, neuropsychology, and neurophysiology. The center's goals are to improve the diagnosis and treatment of these conditions, to disseminate information on new research in the public, and to contribute to a better understanding of the neural basis of cognition.

Educational and Patient Care Facilities
First and second-year classes are taught in the Bowman Science Building and the Medical Laboratories.

The Hardin Library for the Health Sciences is a vital resource centrally located on the medical campus.

Students acquire clinical experience in the 8th and University of Iowa Hospitals and Clinics complex, in the adjacent 805-bed Veterans Affairs Medical Center, and in a score of affiliated hospitals and ambulatory care centers in the area.

Faculty members of the Colleges of Medicine and Dentistry make up the 500-member clinical staff at the University of Iowa Hospitals and Clinics, whose 16 clinical services are directed by the boards of the corresponding academic departments in those colleges. These faculty members also provide instruction for the 4,840 resident physicians and dentists who make up the house staff of the hospitals and clinics, whose facilities are provided for teaching all medical specialties, for research in all such specialties, and for fellowships in a number of specialties.

The University of Iowa Hospitals and Clinics serves as a tertiary care center for the state of Iowa and portions of neighboring states, with most patients being referred for care and treatment not readily available in their local communities. For details about The University of Iowa Hospitals and Clinics, Veterans Affairs Medical Center, and related academic and health services, see "The University of Iowa Health Care System" in the Special Resources at Iowa section of the Catalog.

Research Facilities
The Eskeland Medical Research Building, opened for occupancy in early 1986, was designed to provide flexible research space that rapidly adapts to the changing needs of interdisciplinary basic research. The building 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 researchers. In order to accommodate 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.

Research facilities for the College of Medicine have been extended by approximately thirty thousand square feet of space, including new space at the University Research Park.

A number of facilities that support the research and teaching endeavors of College of Medicine faculty are administrated through the dean's office. University of Iowa research facilities housed to the College of Medicine include the Electronic Microscopy Facility and a Computer-Assisted Image Analysis Facility. The animal care unit, which arranges for the purchase, housing, and veterinary care of a wide variety of animals, also is responsible for investigator training in the use of research animals and for compliance with all laws relating to animal research. (See "Research Activities" in the Special Resources at Iowa section of the Catalog).

The bioengineering facility provides specialized electronic design, construction, and repair services. The medical instrument facility designs and fabricates scientific equipment and provides precision machine services and custom signag.

The medical graphic, photographer, and motion services are consultation, design, and production services in these various art forms. The spectrum of composition is greatly expanded by Compugraph, a computer-generated graphics system.

The F3 facility meets federal guidelines for reconstructivable DNA. Facilities include a Genomic Center, a Radiology Center, and an Inventory Center. The Radiation Safety Center is housed in the Research Lab. Radiologic sources available include X-ray equipment, mammography machines, and a 12,000 Curie cobalt-137 gamma ray source.

The electron spin resonance facility provides investigators to directly detect free radicals as well as to study paramagnetic resonance metal complexes.

The Protein Structure Facility provides services such as amino acid analysis, protein sequencer, peptide synthesis, and HPLC separations. In addition, instrumentation for the spectral characterization of macromolecules, the purification of proteins and peptides, and the measurement of kinetic parameters is made available to investigators for their research.

The FACS (fluorescence-activated cell sorter) is available for flow cytometry studies. The facility serves the needs of the stem-cell research group, as well as to study normal and malignant cells.

The High Field Nuclear Magnetic Resonance Facility provides NMR spectroscopic services through a high-frequency spectrometer.

A facility for mass spectrometry provides service for the qualitative and quantitative identification of important biological molecules.

The Tissue Culture Hybridoma Facility provides tissue culture media for tissue culture. It prepares cell lines to form hybridomas from which monoclonal antibodies are isolated. The Flow Cytometry Facility provides facilities, technical personnel, and consultation services to investigators studying diverse problems in cell biology, immunology, endocrinology, hematology, and cell kinetics.

The flow cytometer will measure any optically detectable cellular property.

The Iowa University Affiliated Faculty, a unit of the Division of Developmental Disabilities Department of Pediatrics, provides interdisciplinary training, exemplary services, technical assistance, and information dissemination and participates in research to enhance the quality of life for persons with developmental disabilities. Professionals from several disciplines e.g., psychology, dentistry, education, family practice, pediatrics, nursing, nutrition, occupational therapy, physical therapy, psychology, leisure studies, social work, speech language pathology, and rehabilitation engineering work together as teams to provide short-term and long-term services to persons with developmental disabilities.

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. The office provides educational consultation, interacts and cooperates in educational research endeavors, and conducts faculty development activities.

Doctor of Medicine
The University of Iowa College of Medicine accepts 175 freshmen students each year onto its four-year curriculum leading to the Doctor of Medicine (M.D.) degree.

The curriculum in medicine at the University is based on a strong tradition of excellence. It is continually being revised to meet the changing needs of the new physician and society.

Basic Medical Sciences (First Three Semesters)
The first three semesters present a core of material common to the study of medicine.

First Semester
A 40-103 Gross Human Anatomy for Medical Students includes clinically relevant areas of anatomical and surface anatomy with emphasis on the clinical application of the basic body systems, and the relationship to the living system is stressed.
60:104 Medical Embryology often lectures on human embryology, with emphasis on the clinical aspect of development. Registration is limited to medical students; graduate students are admitted to 60:217. The course is offered fall semester.

60:105 General Pathology for Medical Students provides a course of study for the core information concerning cellular and tissue structure and function needed for the work to be accomplished in physiology and pathology.

1-15:102 Human Dimensions in Medicine is designed to introduce medical students to the importance of communication in the practice of medicine and to increase awareness of personal and social values. The course provides students with small group experience through which they learn about and improve their ability to communicate sensitively with patients and colleagues.

63:110 Biostatistics provides guidelines for the use of statistical principles in the biological and medical sciences. Time is given in the interpretation of statistics published in medical journals.

Second Semester

72:212 Medical Physiology offers students an understanding of responses that an organism gives to external stimuli and provides a basis for understanding the interdependence of organic systems. Much of the material in these two courses is presented from a clinical point of view. In addition, students may select among essentially required laboratory exercises, subjects which reflect their evaluation of the physiological mechanisms at work in the clinical material. Elective courses are: 41:103 Medical Microbiology includes immunology and provides a core of information on the classification and mode of action of infectious agents, as well as certain aspects of body responses to the infectious process. The laboratory work plans in important role in this course.

50:224 Medical Neurourology is a core course dealing with basic principles of neuropathology and neuroanatomy, with emphasis on the human central nervous system. The laboratory primarily involves the anatomical study of specimens.

69:201 General Pathology for Medical Students is concerned with the interrelatedness of these systems in the maintenance of health and the diagnosis and treatment of disease. Students are required to attend the lectures, which cover the correlated clinical systems.

60:202 Systemic Pathology for Medical Students applies the principles given in the previous semester to specific diseases in an organ system approach. Student-centered learning is facilitated through courses the basic science courses and practice in case analysis.

63:109 Preventive Medicine presents an introduction to the public health problems in some of the sociological, economic, and public health aspects of medical practice.

71:105 Pharmacology for Health Sciences: Medical bridges the clinical and basic sciences and provides students with principles that must be understood to describe properly the actions of drugs in patients.

50:105 Biomedical Ethics covers ethical vocabularies, the processes of sound reasoning, and illustrates problems increasingly prevalent in modern medical world.

Several elective courses are available to students during the third semester. These vary 2 academic hours of clinical elective areas not specifically covered in the regular curriculums and areas subject to medical practice and the role of the Virginia. Typical examples are Perspectives in Aging, Humantarian Medicine, Human Nutrition, and Spanish for Health Professionals.

Introduction to Clinical Medicine (Fourth Semester)

A major interdisciplinarian course, 50:111 Introduction to Clinical Medicine, fills the fourth semester. It involves participation by a large proportion of the faculty and is vital in providing students with the tools for a lifetime of patient care.

The first several mornings are devoted to instructing the patient as a person and giving guidance in interviewing, counseling, and history taking. Following this is an intensive review of clinical medicine on an organ system basis, presented by teams of clinicians and basic scientists. The final group of mornings is spent in areas of medicine that do not fall readily into organ systems, and on reassessment of same key subjects.

Throughout the 16 weeks of the course, students spend afternoons acquiring and practicing the clinician’s skills in history taking and physical examination. Rules of care, concern, and compassion needed by all physicians are established in this semester.

The last one or two weeks, each student is assigned individually several times to determine the level of skill achieved. If further work is needed, guidance and assistance are provided.

Clinical Clerkships (Third Year)

The third year includes the required clinical clerkships and presents students with opportunities to work with physicians of almost all disciplines as they care for their patients. Students spend nine weeks in internal medicine, six weeks each in surgery, pediatrics, psychiatry, and obstetrics and gynecology; and two weeks each in anesthesia, dermatology, otorhinolaryngology–head and neck surgery, orthopedic surgery, urology, and family practice. Students spend most of their time in in-patient service except during the last clerkship practice, which exposes students to primary care in a physician’s private practice for one week.

The clinical clerkship year is the most critical period of time in medical education, for it is when students take on the posture of physician to learn firsthand the complexity of medical science when viewed at the bedside, and to understand the physicians’ responsibility for human life.

Period of Selective Study (Fourth Year)

Following the clerkships, the fourth year provides a period of selective study, giving students many options. The broad, comprehensive orientation to the different medical disciplines and the level of clinical sophistication achieved during the clerkship year quality students in participation in a variety of medical experiences, ranging from advanced courses in specialty areas to community-based clerkships in primary care. All students must complete a required course in clinical pharmacology and dermatology.

Financial Aid

The College of Medicine’s philosophy is that no student should be denied a medical education for a lack of funds. Therefore, the College of Medicine will actively seek to arrange financial aid to enable every student admitted to a medical education to finance that education.

Financial aid 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 variable federal loan programs are the Health Professions Student Loan (HPSL), the Stafford Student Loan (SSL), the Perkins Loan Program, and the Health Education Assistance Loan program (HEAL).

In addition, the College of Medicine has a number of funds that support collegiate loan programs through developmental funding and/or contributions from alumni and friends of the College of Medicine. The largest of these funds are the College(Medical Education Assistance Program, the Carroll Brown Medical Student Loan Fund, and the Smith Foundation Loan Fund. The Dr. George Stanton Medical Student Loan Fund, the Law Medical Foundation of the Iowa Medical Society also is available to AIA and CME students who are residents of the state of Iowa.

The College of Medicine also manages a number of medical funds that support student emergency and financial aid to students for unforeseeable financial needs, information and advice concerning financial aid can be obtained through the College of Medicine Student Affairs Office.

Educational Opportunities Program

The Educational Opportunities Program provides financial aid and academic assistance to disabled students from groups that are underrepresented in medicine: Black Americans, Mexican-Americans, Native Americans, and Mainland Puerto Ricans.
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 late in the first 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 is November 15.

Final application will be forwarded to applicants whose AMCAS applications pass a reviewer conducted in the College of Medicine. A $60 fee precedes the final application from applicants who have not completed work in residence. The University of Iowa. This fee is not refundable except to residents of Iowa who are denied admission.

Admitted applicants must also fulfill the requirements of the University of Iowa for admission to the College of Medicine.

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 90 semester hours of credit, or the equivalent, including the following.

Physics: a complete introductory course.

Chemistry: a complete introductory course in inorganic chemistry, ordinarily following a complete introductory course in modern general chemical principles.

Biology: a complete introductory course in the principles of animal biology, or a reasonable year of hours in biology (elementary and 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, communicative, and interpersonal skills. Therefore, the following skills and characteristics must be met by all students admitted to the College of Medicine.

1. Candidates must be able to learn, analyze, synthesize, solve problems, and reach diagnostic and therapeutic judgments.
2. Candidates must have sufficient use of the senses of vision and hearing and the sense of smell necessary to perform a physical examination. Candidates must be able to perform palpation, auscultation, and percussion.
3. Candidates must be able to reason responsibly to patients and establish sensitive, professional relationships with patients.
4. Candidates are expected to be able to communicate the results of the examination to patients and to their colleagues with accuracy, clarity, and efficiency.
5. Candidates are expected to be able to learn and perform routine laboratory tests and diagnostic procedures.
6. Candidates are expected to be able to display good judgment in the assessment and treatment of patients.
7. Candidates must be able to learn and respond with prompt, quick, and appropriate action in emergency situations.
8. Candidates are expected to be able to accept criticism and respond by appropriate modification of behavior.
9. 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 coordinator of admissions.

If the specific requirements for admission do 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. Applicants who have completed the baccalaureate degree and required courses five or more years before seeking admission to the College of Medicine are considered by the admissions committee only under exceptional circumstances.

To be considered for admission, applicants must have attended at least a 2.5 grade-point average 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 scholarly standing who are residents of Iowa. Candidates also are given to outstanding nonresidents.

Applicants are required to take the Medical College Admission Test administered by the Association of American Medical Colleges no later than the fall of the year preceding that for which they are seeking admission. Students may arrange to apply for this examination through the University's Evaluation and Entrance Service.

Personal interviews are not usually conducted but are occasionally requested by the admissions committee. Applicants who feel the interview is necessary may request that one be scheduled by contacting the coordinator of admissions. Requests for interviews normally should be made by January 1.

Applicants accepted after January 15 must submit a $50 advance payment by March 1.

All students entering the College of Medicine are required to comply with the presence and periodic health screening program developed by the Student Health Service in cooperation with The University of Iowa Hospitals and Clinics.

Promotions Policies and Procedures

Promotions Committee

The purpose of the promotions committee is 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. To perform this duties, the committee depends on the cooperation, advice, and judgment of faculty, students, and alumni.

The promotions committee consists of the chief of academic affairs, two faculty members, a medical student affairs office (without vote), three or five faculty members, one of whom is appointed by the dean to serve as chair. Two are from two different basic science departments, and three are from three different clinical departments. There is a medical student member from either the junior or senior class.

The dean of the College of Medicine makes faculty appointments to the committee after consulting with the executive committee and appointing the student member after consulting with the medical student council and the chair of the committee.

Regulations and Procedures

In general, promotion from one grading period to the next is contingent upon the satisfactory completion of the courses of each grading period. It is the prerogative of the promotion committee to permit a student who has not satisfactorily completed courses in a preceding grading period to continue, provided that an appropriate program is designed for the student. Each student must demonstrate proficiency in each required course.

Evaluation of student progress in courses is based on examinations or other tests as determined by each department or course and on clinical skills and competence as deemed appropriate by the department or course. The College of Medicine requires that all students demonstrate proficiency in a variety of cognitive, problem-solving, manual,
communicative, and interpersonal skills and meets the other criteria set forth by the principles of medical ethics. These critical skills and ethical guidelines are described in detail in the Handbook for New Students, which medical students receive upon matriculation. Scholarly performance in the first three years is reported by using the letters F, A, and L, in the selective students segment, only grades F, P, and I are used. The letter F indicates a satisfactory achievement at the passing level. The letter H signifies "honors," indicating achievement at an exceptionally high level. The letter I signifies work below the passing level. The letter L is used when, for good reason, the student has not completed the work in a course.

The promotion committee meets at least three times each year, following the completion of each academic semester and at other times as requested by the associate dean for medical student affairs.

The committee reviews with the course directors the records of all students who have received a grade of F in any part of the previous grading period. The committee reviews the record of any student presented by the course directors committees or the associate dean for medical student affairs as doing continuously poor academic work, or failing to demonstrate proficiency in any of the eleven skills or against detailed above, or not meeting the minimal ethics standards. The committee considers other business or proposed work as deemed necessary to perform its duties as set forth in the charter.

The promotion committee makes specific actions to be taken in the case of any student whose scholarship or overall academic behavior is in any way considered consistently unsatisfactory. Specific recommendations are forwarded for action to the medical board and executive committee, or meeting in joint session to represent the faculty. Possible recommendations include immediately dismissing the student from the college, requiring a statement part of the curriculum, and allowing the student to continue either in a regular or a determined schedule. Students having unannounced grades of failure are placed on academic probation. A grade of incompletes, if not remediated in the time and manner specified in the promotion committees recommendations, becomes a grade of failure. Students who are on probationary status may be considered for dismissal if further academic difficulties arise.

The promotion committee presents all recommendations for awarding the degree, Doctor of Medicine, to the joint meeting of the medical council and executive committee, which act on the recommendations for the faculty.

Medical students are not permitted to drop courses after the deadline established by the dean of the college. Students may have received the dean's permission. Students who receive the request after the deadline receive a grade of W unless the entire registration is canceled. Students who drop a course without obtaining the dean's permission receive a grade of F unless the entire registration is canceled.

Relationship to Course Directors Committees

The course directors committees provide feedback and counseling for students and as a resource for and provide advice to the promotion committees.

Appeals

Students who want to appeal promote, decisions must submit an appeal in writing to the dean of the College of Medicine within two weeks after the date of receipt of the decision. All appeals are heard, and decisions rendered 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 to and answer questions.

Leave of Absence

The College of Medicine believes that certain students may benefit from being granted a leave of absence from the college for specified periods of time. A leave of absence should be requested from the associate dean for medical student affairs. Leaves are granted at the discretion of the dean.

All leaves must be arranged in advance of the student's absence. Students who request a leave begin during a clinical clerkship or clinical elective must obtain permission from the course director. Students requesting a leave of absence who are not in good academic standing (no probation or not failing status in a course) must be reviewed by the Committee on Student Promotions.

At the discretion of the department, any unannounced absence from an examination, a major section of a basic science course, or a clinical clerkship may result in a grade of F.

Withdrawal

Students may withdraw from the College of Medicine upon submitting a written application to the office of the associate dean for medical student affairs.

Reinstatement

Applicants for reinstatement by students who have withdrawn voluntarily or who have been required to withdraw from the college must be received in writing to the office of the dean at least four months prior to the requested date of reinstatement.

The faculty is authorized to refuse continued or further registration to any student if it believes that he or she has not lived up to the expected general fitness requirements for entering the medical profession, as described in detail in the Handbook for New Students. Ordinarily, such action is taken by the medical council and the executive committee meeting in joint session and acting as representatives of the faculty.

Informal Procedures

When a dispute arises between a student and a faculty member or department, there is often confusion and misunderstanding about the problem. The medical school has a formal procedure for "Procedures for Grievance and Procedures" and an informal procedure, outlined below.

In the College of Medicine, students with problems or complaints should first attempt to resolve the issue with the faculty member involved. Failing a satisfactory outcome, students then should turn to the department or clerkship director and the department chair or dean. If resolution still is not obtained, they may discuss the complaint informally with the associate dean for medical student affairs of the College of Medicine. This informal discussion does not necessarily lead to involvement at the office of the dean in an official capacity. Beyond these steps do not resolve the situation, the student may file a formal complaint through the office of the dean of the College of Medicine.

This informal procedure allows the greatest flexibility for all concerned in resolving conflict and does not involve recourse to the student's permanent record, which are part of the formal procedures. The informal procedure is intended for any situation students may encounter, including grading disputes and alleged dishonesty, alleged dishonesty during clinical rotation (i.e., falsifying patient data) and perceived incidents of discrimination or harassment. Complaints of sexual harassment are handled confidently and in accordance with University policy and procedures.

When a student has resolved a complaint with a faculty member or department, others should try to avoid subjecting the complainant to any retaliation as a result of the complaint. The student may file a formal complaint of the office of the dean of the College of Medicine.

Students are encouraged to make full use of counseling services available to the dean's office or through Student Health Service. These cover the full range of academic, personal, financial, and emotional difficulties, or other issues may be handled informally without going into the student's record, unless it involves an official action (e.g., taking a year off or registering for an extra or academic credit).

Division of Associated Medical Sciences

The division offers a B.S. degree in medicine, the M.P.H., and M.S. degrees offered in the Physical Therapy Program, the Ph.D. offered in the Department of Exercise Science, and the M.S. physician assistant tracks in premedication, medical and environmental health or exercise science courses are offered through the Graduate College and are subject to its policies. A master's program in pharmacotherapeutic studies (MAPS) has been approved by the Graduate College; final approval by the Board of Regents is pending.
General Policies

Advising
When students declare their intended major to be one of the programs in theirmajor, Advising policies and procedures vary from program to program. The Academic Advisor has an advisory role.

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. The Academic Advisor has an advisory role.

Students should consult the individual program descriptions and/or program offices for credits and the admission process. 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: medical technology, 2.50; nuclear medicine technology, 2.50; and physician assistant, 2.70. Admission committees give special attention to grades in the sciences, particularly those prerequisite science courses required by the individual programs. The cumulative or science grade-point average for the last 60 semester hours may be used to satisfy the minimum grade-point average requirement, at the discretion of the program admission committee.

Student Health
Students admitted to division programs must show proof that they have had a recent physical examination including routine laboratory procedures and immunizations for their own and their patients' protection before they enter the program. These records are maintained through Student Health Service, which should be consulted for further information.

Financial Aid
Students in the Division of Medical Sciences must meet the requirements by applying for undergraduate financial aid. Medical technology, nuclear medicine, and physician assistant students may be admitted to the School of Continuing Education.

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 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.
Registration and Grading

Students are not allowed to register after the first 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 one-fifth of the course. There may be dropped 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 an audit or S 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 when the properly signed 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. Late withdrawal results in automatic assignment of an F. Students who withdraw are not reenrolled 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 would register for zero credit in the course to be audited. The mark of R (audited) 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 from which the property 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 honor earned.

Incomplete

A grade of I (incomplete) may be reported if the reason for inability to finish the course satisfactorily is acceptable to the program director and the course instructor. There also must be evidence that the course work will be finished within a reasonable period 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. Changing the grade when an incomplete has been converted to an F requires the signature of the dean on a change of grade form.

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 record sheet following University protocol. No formal students reports are given.

Academic Progress, Program Probation, and Dismissal

Students are expected to maintain satisfactory academic and professional standards and to demonstrate reasonable progress toward the degree and objectives. Students who fail to maintain satisfactory academic progress or who fail to demonstrate satisfactory academic progress or professional behavior improve.

Students on probation are reviewed each semester by the program director. Probation serves as a warning that students will not graduate unless they have academic performance and/or professional behavior improves. Students on probation are reviewed each semester by the program director. Probation serves as a warning that students will not graduate unless they have academic performance and/or professional behavior improves.

Students on probation are reviewed each semester by the program director. Probation serves as a warning that students will not graduate unless they have academic performance and/or professional behavior improves.

Continued satisfactory scholarship or professional behavior may result in dismissal from a program. Students dismissed from a program must reapply for admission through the regular, established program admission process, following the review by the executive committee of the division, at least four months prior to the requested date of reactivation.

Students placed on probation or dismissed from a program are notified in writing of these actions by the program director; a copy is placed in their file.

Students are expected to attend classes regularly. The college expects students to prepare for and take exams 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 and program director.

No offense against good order committed by a student to a classroom, clinical setting, or laboratory may be summarily dealt with by the instructor or referred to the program director. The instructor reports to 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 recommend sanctions for appropriate disciplinary action.

The individual instructor may reduce the student's grade, including assignment of the grade of F to 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, nonsuspension at additional hours of the required activities, assignment of 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 their appeal to the dean within two weeks after the date of receipt of the decision in writing.

Unclassified Students

Persons who do not wish to be admitted to the College of Medicine but who want to register for the right in the course will be admitted only if the course is an essential component of a program of studies, and the student's compliance with all the regular requirements for admission to such a course, or by action of the faculty upon recommendation of the program in charge of the course.

Nondepartmental Courses

50:000 Medical Studies Research Fellowship 1 a.b.
60:000 M.D. Clinical Clerkship 1 a.b.
50:1 Medicine Elective Fourth Year 1 a.b.
JUNIOR YEAR

First Semester
2-112 Cell, Tissue, and Organ Biology (MT-CG) 5 s.h.
2-111 College Physics (PT) 4 s.h.
63-108 Principles of Microbiology (MT-BI)
63-108 Principles of Epidemiology (MT-BI) 3 s.h.
63-113 Introduction to Chemistry (MT-MI) 4 s.h.
63-151 Principles of Human Anatomy (MT-MI) 3 s.h.
72-130 Human Physiology (MT-MI) 4 s.h.
Computer science (MT, all tracks) 3-4 s.h.
Total: 15-16 s.h.

Second Semester
2-128 Fundamental Genetics (MT-CG) 3 s.h.
2-155 Cell Physiology 4 s.h.
29-112 College Physics (PT) 4 s.h.
63-101 Principles of Human Anatomy (MT-MI) 3 s.h.
63-114 Instrumentation in Clinical Laboratory Science (MT, all tracks) 3 s.h.
63-155 Independent Study in Microbiology (MT, all tracks) 1 s.h.
72-150 Intermediate Physiology (MT, all tracks) 4 s.h.
Foreign language 4 s.h.
225-100 Biostatistics (MT-MI) 3 s.h.
225-152 Introduction to Statistical Methods (MT-MI) 3 s.h.
Total: 14-15 s.h.

SOPHOMORE YEAR

First Semester
2-125 Principles of Microbiology (MT-MI) 5 s.h.
4-03 Organic Chemistry I (MT-MI, all tracks) 5 s.h.
4-121 Organic Chemistry I (MT-MI, all tracks) 5 s.h.
29-111 College Physics (MT-MI) 4 s.h.
61-117 General Microbiology (MT-MI) 5 s.h.
Humans 2 s.h.
Physical education 1 s.h.
Social sciences 3 s.h.
Total: 15-16 s.h.

Second Semester
4-122 Organic Chemistry II (PA) 3 s.h.
29-115 College Physics (MT-MI) 4 s.h.
31-35 General Psychology (MT-MI) 4 s.h.
31-15 Writing for the Sciences (MT-BT) 3 s.h.
99-115 Biochemistry (MT, all tracks) 3 s.h.
100 level theology course (PA) 3 s.h.
Historical perspectives (MT) 3 s.h.
Humans 6 s.h.
Social sciences 3 s.h.
Total: 14-18 s.h.

Students who have satisfactorily completed the above courses have met the minimum...
Admission

The medical technology/clinical laboratory science professional program is limited to 32 students, who begin the program in late May. Applications close October 15. Sixteen students continue during the fall and spring semesters and complete the program in May. The other 16 have the opportunity to complete unlimited prerequisite courses work during the fall semester and then return to the program for the spring and fall semesters of the following year, graduating in December. Additional students, who wish to complete alternate tracks (virology or microbiology) must observe the same admission process and complete the first two semesters of the program year. The amount of additional time required varies by track.

To apply for admission to the professional program, students must be able to complete all of the following prerequisite and University graduation requirements by the end of the professional (clinical) year:

- fourteen seminar hours of chemistry, including qualitative analysis, organic chemistry, and biochemistry.
- three seminar hours of microbiology.
- fourteen seminar hours of biology, including genetics, toxicology, medicine, and human physiology.
- admission is on a competitive basis. Cumulative grade-point average of 2.50 overall and 3.0 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 the Academic Credentialing and Accreditation on the Medical Technology Program as early as possible to plan preclinical studies that meet all requirements.

Expenses

Medical technology students are responsible for textbooks, University tuition, and all fees. Laboratory costs and equipment such as microscopes are provided by the program.

NUCLEAR MEDICINE TECHNOLOGY

Director: Anthony W. Knight
Medical director: Peter F. Kerwin
Technical director: Jake A. Miller
Professor: Sam J., Clark, Peter R. Kerwin
Professor associate: Xiao N. Chen
Professor: Charles H. Slaney
Clinical professor: Richard Richman, Karen Reis
Clinical professor: James L. Sabados
Clinical professor: Mark E. Widdes
Clinical professor: Daniel Ehrlich, Gerard Wilkus
Clinical professor: James A. Fenning
Clinical professor: Terrance

Admission

The nuclear medicine technology is a medical specialty that uses radioactive tracers for diagnostic, therapeutic, and research purposes. It is a rigorous, demanding field that has grown rapidly over the past two decades and is still expanding and growing in complexity. This continued expansion of the specialty has fostered an increasing demand for highly skilled and motivated nuclear medicine technologists.

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 track 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 with the patient, radiopharmacists, and radiologists as an integral part of a specialized medical team.

The Nuclear Medicine Technology Program at The University of Iowa is fully accredited by the Committee on Allied Health Education and Accreditation and the Council on Medical Technology of the American Medical Association. Fulfillment of the requirements established by the Accrediting Commission for Education in Nuclear Medicine involves three years of preparatory 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 Veterans Affairs Medical Center.

Upon satisfactory completion of the four-year program, students receive the Bachelor of Science from the College of Allied Health and a certificate of training. Graduates are then eligible for national certification as nuclear medicine technologists.

The required courses in the freshman and sophomore years emphasize the physical and biological sciences, which provide a basic background for further development in the junior and senior years. Applicants are strongly suggested to pursue a course of study that applies to a baccalaureate degree, major in biology, chemistry, microbiology, or pharmacology. In this way, students are not admitted to the NMT program can complete a degree in their chosen area.

JUNE 1

The following are recommended courses:

- 01:1 Principles of Human Anatomy
- 72/130 Human Physiology
- 2IC/5 Survey of Computing
- 2IC/5 Introduction to Computing
- 2IC/5 Elementary Statistics and Inference
- 2IS/101 Biostatistics
- 3IS/101 Biostatistics
- 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, radiometry, radiophysics, radioisotopes and radiation protection, patient care, nuclear medicine, and computer applications. The clinical rotation is based on nuclear imaging, clinical radiopharmacy, computer applications, and quantification of metabolism in vivo and in vitro, including triclinic studies. Rotations also are established in radiometric measurement, diagnostic X-ray, computed tomography, magnetic resonance imaging, ultrasonography, radiography, and computed tomography.

The current year consists of these courses:

- 74/101 Principles of Nuclear Medicine I
- 74/102 Introductory Clinical Nuclear Medicine
- 74/103 Principles of Nuclear Medicine II
- 74/130 Intermediate Clinical Nuclear Medicine
- 74/105 Advanced Clinical Nuclear Medicine

For course descriptions, see "Radiology" in this section of the Catalog.

Admission

Applicants for admission to the Nuclear Medicine Technology Program include the following:

- a minimum of 64 semester hours in core courses, with a 3.50 minimum cumulative grade-point average;
- fulfillment of the College of Liberal Arts General Education Requirements in rhetoric, foreign language, physical education, humanism, historical perspectives, foreign

- 09-151 Medical Cyrography Laboratory 2 s.h.
- 17-152 Medical Cyrography Seminar 1 s.h.
- 09-155 Clinical Medical Cyrography Lab 1 s.h.
PHYSICAL THERAPY

Department: Gary Saderberg
Program: Gary Sederberg
Associate professor: Carl Brown, Dean Wierse
Assistant professor: Thomas Cook
Associate professor: William Sell
Lecturer: Byron Boyd, Samuel Cassidy, Loretta
Erickson, Carole Wachbrodt
Advising intern: Donald Storer
Advising associates: Ethel Brown, Kaye Laufenthal, ElmLouise, Bruce Miller, Richard Stith, John

Graduate degree: M.A.T., M.A. in Physical Therapy
Physical therapists participate in evaluation of the capabilities and disabilities of patients. They provide treatment to increase performance, prevent, correct, or minimize deformity; and improve the general health status of the individual. They administer physical therapy facilities, appropriate support personnel, do clinical research and teaching, and consult with other health professionals.

Education in the program is available at three different levels: the 4-year professional program in general or specialized hospitals, in programs for children with disabilities, and in physical therapy clinics. Extended care facilities, nursing homes, community and governmental agencies, rehabilitation centers, the armed forces, foreign service, and other requirements. Additional career opportunities are available for teaching in educational programs of physical therapy and related professions.

Admission: The program is located in the College of Medicine. All students must have completed a 4-year college course. The University of Iowa is the national's largest university-owned teaching hospital. This location makes several resources available to the program: broad basic and medical education; basic science courses, and integrated benefits associated with a college of medicine environment.

Professional Program

Master of Physical Therapy

The professional program is fully accredited by the American Physical Therapy Association. Satisfaction with the program qualifies candidates for the Assessment Seminar Inc. (A.S.I.) examination for licensure in Iowa and other states.

The two-year Master of Physical Therapy Program consists of the following courses.

First Semester
05:108 Human Anatomy 4 s.h.
09:133 Introduction to Human Pathology 3 s.h.
10:161 Principles of Physical Therapy 4 s.h.
10:210 Kinesiology and Neuromusculars 4 s.h.

Second Semester
05:224 Medical Neurology 4 s.h.
10:131 Therapeutic Physical Agents 4 s.h.
10:185 Musculoskeletal Therapeutics 2 s.h.
10:191 Clinical Education I 1 s.h.

Third Semester
10:132 Psychosocial Aspects of Patient Care 1 s.h.
10:176 Fundamentals of Semiotics Systems 1 s.h.
10:192 Clinical Education II 1 s.h.
10:201 Applied Clinical Medicine 2 s.h.
10:205 Cardiopulmonary Therapeutics 4 s.h.
10:249 Research Practice I 1 s.h.
Elective 3 s.h.

Fourth Semester
10:121 Physical Therapy Management and Administration 2 s.h.
10:170 Geriatrics and Orthotics 3 s.h.
10:223 Nonmusculoskeletal Therapeutics 4 s.h.
10:250 Research Practice II 3 s.h.
Elective 3 s.h.

Summer Session
10:114 Clinical Internship (May-August) 6 s.h.

Fifth Semester
10:114 Clinical Internship (August-October) 3 s.h.

Admission

A new class is admitted to the Master of Physical Therapy Program each year. To qualify for admission to the program, applicants must have completed or planned to complete before enrollment a bachelor's degree from a regionally accredited institution in the United States. The following course prerequisites must be completed in the freshman or sophomore year.

Biology sciences: a complete introductory course in principles of general biology and advanced course work in botany or zoology.

Physical: a complete introductory course equivalent to 8 semester hours.

Chemistry: a complete introductory course equivalent to 8 semester hours.

Mathematics: a college-level mathematics course 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. A 2.70 grade-point average (out of 4.00 scale) is the minimum for consideration for admission. In addition, a 3.00 grade-point average 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 by the application deadline (February 1).

Students are selected on the basis of credentials and performance. Selections are made from the applicants interviewed. Interviews are conducted at the University of Iowa. The physical therapy admissions committee selects the persons who appear to be best qualified for the study and practice of the profession.

Applicants are accepted beginning September 1 of 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 the purchase of the following.

Graduate Programs

Master of Arts

The Master of Arts in physical therapy emphasizes research and teaching in three areas of physical therapy: cardiopulmonary, musculoskeletal, and neurorehabilitation. The
Students are admitted to the program leading to the B.S. or M.S. degree based on grade-point average on work completed for the degree and scores on the GRE General Test. To be considered for admission, students must have earned at least a 3.0 grade-point average on all graduate work undertaken. In addition, GRE scores must be on file at the University of Iowa.

Applicants must complete the Graduate College application. The Office of Admissions evaluates application materials to ensure that the minimum Graduate College standards are met. The application is then sent to the department for review.

Deadlines for the completed applications are October 15 (notification by December 15), March 15 (notification by May 15), and May 15 (notification by July 15).

Financial Aid

A number of teaching and research assistantships are available; part-time clinical work also may be available.

COURSES

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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>101:110</td>
<td>Physical Therapy Management and Administration</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>101:180</td>
<td>Perinatal Aspects of Patient Care</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>103:131</td>
<td>Fundamentals of Physical Therapy Practice</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>103:180</td>
<td>Physical Therapy Assistant</td>
<td>3.5 s.h.</td>
</tr>
<tr>
<td>103:180</td>
<td>Physical Therapy Assistant</td>
<td>3.5 s.h.</td>
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</tbody>
</table>

Ph.D. in Physical Education (Therapists)

Doctoral training related to physical therapy is received in a program in exercise science (Division of Physical Education), with special emphasis on physical therapy.

The following courses are required.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>101:128</td>
<td>Foundations of Physical Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>101:129</td>
<td>Biomechanics of Human Movement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>101:130</td>
<td>Health Education</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>101:131</td>
<td>Physical Activity and Measurement</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>101:132</td>
<td>Exercise Physiology</td>
<td>2 s.h.</td>
</tr>
</tbody>
</table>

Admission

Students are admitted to the program leading to the Ph.D. on the basis of their grade-point average on work completed for the master's degree and scores on the GRE General Test. To be considered for admission, students must have earned at least a 3.0 grade-point average on all graduate work undertaken. In addition, GRE scores must be on file at the University of Iowa.

Applicants must complete the Graduate College application. The Office of Admissions evaluates application materials to ensure that the minimum Graduate College standards are met. The application, including test scores and copies of transcripts, is then sent to the department for review.

Deadlines for the completed applications are October 15 (notification by December 15), March 15 (notification by May 15), and May 15 (notification by July 15).

Financial Aid

A number of teaching and research assistantships are available; part-time clinical work also may be available.
predominate phases of the program. Clinical training is provided by The University of Iowa Hospital and Clinics, the Veterans Affairs Medical Center in Des Moines and Iowa City, Broadlawns Methodist in Des Moines, and other affiliated hospitals throughout the state. Students gain additional clinical experience through placement with selected preceptors involved in clinical work to off-site practices.

The didactic and clinical phases of the 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.

**Professional Curriculum**

**FIRST YEAR**

**Phase I**

50:105 Law and Medicine for Physician Assistant Students 1 s.h.

60:111 Gross Human Anatomy for Physician Assistant Students 6 s.h.

61:112 Health: Sciences Microbiology 4 s.h.

60:130 Clinical Pathology for Physician Assistant Students 1 s.h.

60:133 Introduction to Human Pathology 4 s.h.

71:125 Pharmacology for Health Sciences: Physician Assistant Students 6 s.h.

72:104 Human Physiology for Physician Assistant Students 6 s.h.

99:164 Seminar for Physician Assistant Students 3 s.h.

117:104 Seminar for Physician Assistant Students 1 s.h.

117:105 Introduction to the Medical and Physical Examination for Physician Assistant Students 1 s.h.

117:106 Introduction to Research in Physical Anthropology 1 s.h.

117:106 Interpretation of Medical Literature 1 s.h.

117:105 Preventive Medicine for Physician Assistant Students 1 s.h.

**Phase II**

50:121 Introduction to Clinical Medicine for Physician Assistant Students 20 s.h.

**SECOND YEAR**

**Phase III**

The following are required clinical rotations.

60:100 Obstetrics and Gynecology for Physician Assistant Students 6 s.h.

70:555 Pediatrics for Physician Assistant Students 6 s.h.

70:100 Psychiatry for Physician Assistant Students 4 s.h.

75:555 General Surgery for Physician Assistant Students 6 s.h.

78:555 Internal Medicine for Physician Assistant Students 6 s.h.

115:555 Family Practice I for Physician Assistant Students 6 s.h.

117:201 Independent Study 1 s.h.

Elective clinical rotations are selected from the following:

60:205 Dermatology Elective for Physician Assistant Students 2 s.h.

60:100 Neurology Elective for Physician Assistant Students 2 s.h.

61:101 Obstetrics and Gynecology Elective for Physician Assistant Students 2 s.h.

60:100 Orthopedics Elective for Physician Assistant Students 2 s.h.

70:100 Pediatrics Elective (Bone Marrow Transplant) for Physician Assistant Students 2 s.h.

70:100 Pediatrics Elective for Physician Assistant Students 2 s.h.

75:100 Emergency Room Elective for Physician Assistant Students 2 s.h.

75:100 Surgery Elective for Physician Assistant Students 2 s.h.

75:111 Surgery Elective (Thorax/Selected Topics) for Physician Assistant Students 2 s.h.

75:113 Surgery Elective (Burn Unit) for Physician Assistant Students 4 s.h.

75:100 Obstetrics Elective for Physician Assistant Students 2 s.h.

78:100 Internal Medicine Elective for Physician Assistant Students 4 s.h.

78:100 Internal Medicine Elective (Cardiology) for Physician Assistant Students 4 s.h.

78:100 Respiratory Medicine Elective (Respiratory Care) for Physician Assistant Students 4 s.h.

78:100 Internal Medicine Elective (Geriatrics) for Physician Assistant Students 4 s.h.

78:100 Internal Medicine Elective (Geriatrics II) for Physician Assistant Students 4 s.h.

78:100 Internal Medicine Elective (Gastroenterology) for Physician Assistant Students 4 s.h.

78:100 Internal Medicine Elective (Hepatology) for Physician Assistant Students 4 s.h.

78:100 Internal Medicine Elective (Infectious Disease) for Physician Assistant Students 4 s.h.

78:100 Internal Medicine Elective (Pulmonary) for Physician Assistant Students 4 s.h.

78:100 Otolaryngology Elective for Physician Assistant Students 2 s.h.

115:500 Family Practice II for Physician Assistant Students 2 s.h.

115:556 Family Practice III for Physician Assistant Students 6 s.h.

**Admission**

To be eligible for admission to the physician assistant program, applicants must have completed at least 40 semester hours of college-level study including:

- College of Liberal Arts General Education Requirements in mathematics, physical education
- skills, historical perspectives, humanities, qualitative or formal reasoning, foreign civilization and culture, social sciences, and foreign language; and

A complete introductory course in inorganic and organic chemistry; and

A complete introductory course in zoology or animal biology.

It is also strongly recommended, although not required, that applicants' backgrounds include anatomy, genetics, the digestive, cardiovascular, and pulmonary systems.

Applicants must have achieved at least a 3.0 grade point average on the last 60 semester hours of college work undertaken. The admissions committee gives special attention to applicants' performance in science courses. In the past, successful applicants have had a cumulative and science grade-point average of 3.2-3.5; a total of 125 semester hours of college credits; and 35 hours of science courses.

A satisfactory letter of recommendation is required of each applicant. This letter should be written by a professional who is familiar with an applicant's academic and professional potential.

If you have any questions, please contact the Physician Assistant Program office at University of Iowa Hospital and Clinics, Department of Physician Assistant Studies, 200 Hawkins Drive, Suite 1000, Iowa City, IA 52242. Please call 319-356-7111 or email paps@uiowa.edu.

**Expenses**

In addition to general University student expenses, students in the Physician Assistant Program are responsible for all of their medical uniforms and diagnostic requirements, approximately $400. Microscopes are not required.

**Combined Graduate Program**

**M.S. in Preventive Medicine and Environmental Health or Exercise Science**

Clinicians are now entering an era in medicine in which knowledge and skills in preventive medicine, epidemiology, research, data management, and health care administration are of great value. In recent years the scope of the
Admission
To be considered for admission, applicants must have completed a baccalaureate degree with a 2.70 minimum grade point average. Suggested prerequisite courses include biochemistry, biostatistics, biology, and microbiology. Satisfactory completion of the Graduate Record Examination (GRE) is required. The Office of Admissions evaluates application materials and makes admission decisions on a rolling basis.

Applicants must complete both the Physician Assistant Program application and an application for admission to the Graduate College. Deadline for completed written applications is January 15.

Courses
PH 114: Introduction to Research Design and Methodology (1.5 h) Design, implementation, and analysis of experiments; various statistical analysis; correlation and regression; importance of data collection; the research process; methods of data presentation; types of scientific literature, design and experimentation, and statistical quality control, and interview periods; use of computerized data sets. Open only to Physician Assistant Program students.

Undergraduate Programs
See "Biochemistry" in the College of Liberal Arts section of the Catalog.

Graduate Programs
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 degrees leading to the M.S.-M.D. or Ph.D.-M.D. (medical school training) degree.

The focus of the graduate program is on the individual student. In the first year, students' educational needs are met with formal course work and summer research experiences that serve as the "core" for selecting a thesis topic. First-year students spend half of their time taking core course work—usually 91/241, 91/242, and 91/243—and the interdepartmental molecular biology courses 142/310 and 142/315 (for course descriptions, see "Molecular Biology" in this section of the Catalog). Students spend the other half of their time working in three different faculty laboratories. Now the 91/261 Research Techniques Seminar, teaching 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 complement and supplement their research and presentation. During this time, they must complete a minimum of 8 semester hours consisting of a core and two short courses (1 semester hour each) in biochemistry and 3-semester hour elective science courses (100- or 200-level) in other departments.

The comprehensive examination is taken in May of the second year. After this examination, students are admitted formally to degree candidacy and must complete their research program. The program culminates in the successful defense of the completed thesis work before an examining committee.

In addition to meeting these requirements and the general rules 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 encouraged to stay in touch with faculty members and receive close personal attention from the biochemistry faculty members who serve as research advisors.

Research
The department's current research focuses in the following areas:

1. Drug discovery and novel therapeutic agents
2. Antibiotics and their mechanisms of action
3. Enzyme mechanisms and inhibition
4. Drug and metal ion interactions
5. Cell signaling molecules
6. Ion channel function
7. Protein structure and function
8. Biophysical methods

The research activities of faculty members are supported by grants from various federal agencies, including the National Institutes of Health, the National Science Foundation, and the Department of Energy.
sequencer, peptide synthesizer, gas chromatograph, preparative high-performance liquid chromatography, liquid scintillation counter, electrophoresis equipment, immunofluorescent microscope, a number of Cary spectrophotometers, an automatic DNA synthesizer, and an automated DNA sequencer.

The department maintains a reading room stocked with primary books and periodicals used by biologists. The North Library for the Health Sciences is a large, complete library located near the Kevins Building. Excellent resources are also provided by other departmental branches of the University Libraries system and can be accessed through bibliographic retrieval services.

Financial Aid

Usually, all students admitted to the Ph.D. graduate program in biochemistry receive financial assistance.

Admission

The graduate program in biochemistry is sufficiently flexible 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 years of science in high school, but those with demonstrated ability may make up deficiencies after they enroll.

Minimum requirements for viseas from the department are a 3.0 cumulative 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, biochemistry, molecular cell biology.

Courses

99.000 Cooperative Education Internship 0.0 h.

99.010 Observation and Introduction to the Field of Biochemistry 1.0 h.

Biochemistry and electives to other areas of two semester: biochemistry, studies, meetings, current.

99.100 Technical Writing in Biochemistry 1.0 h.

Use of the library, comprehension of biochemistry, format of writing scientific reports, ability to evaluate biochemistry textbooks. Preparation: Permission: 99.120 or 99.450 or consent of instructor.

99.120 Undergraduate Seminar 1.0 h.

Observations of talk, presenting papers, discussing papers and publications, format of general biochemistry topics, student research reports. Preparation: 99.120 or consent of instructor.

99.200 Intro-biochemistry 1.0 h.

Chemical, molecular, molecular biology of living systems. Preparation: Permission: 99.120 or consent of instructor.

99.120 Biochemical Molecular Biology I 4.0 h.

Structure of nucleic acids, proteins, carbohydrates, lipids, and their participation in basic transport, metabolism, and regulatory systems. Preparation: 99.120. Recommended: 4232.

99.130 Biochemistry and Molecular Biology II 4.0 h.

Molecular biology of biologic systems, genetics, regulation of gene expression, molecular genetics. Information about: principles, enzymes, recombinant DNA techniques, molecular biology of eukaryotes and prokaryotes, nucleic acid metabolism, cell regulation, regulation of gene expression. Preparation: 99.120.

99.140 Experimental Biochemistry 4.0 h.

Experimental methods of biochemistry, instrumentation, characterization of materials of biochemistry. Preparation: 99.120 and/or 99.130. Required: 99.120, 99.130, 99.140.

99.155 Research, Independent Study 2.0 h.

Undergraduate participation in biochemistry research.

99.165 Nucleic Acid Analysis 3.0 h.


99.167 Biochemistry for Disease Diagnosis 4.0 h.

Open only to doctoral students and to junior medical students. Preparation: 99.120, 99.130, 99.140.

99.168 Biochemistry for Pharmacy Students 4.0 h.

Open only to pharmacy students and to junior medical students. Preparation: 99.120, 99.130, 99.140.

99.167 Biochemistry for Medical Students 4.0 h.

Clinical problems in biochemical care. Open only to medical students and to junior medical students. Preparation: 99.120, 99.130, 99.140.

99.164 Biochemistry for Nephrologists Students 3.0 h.


99.215 Seminar 2.0 h.

Open only to biochemistry students. Preparation: 99.120, 99.130, 99.140.

99.230 Biophysics and Molecular Biology 1.0 h.

Biochemistry and molecular biology. Preparation: 99.120 or consent of instructor.

99.277 Medical Genetics 2.0 h.

Preparation: 99.120 or consent of instructor.

99.278 Biochemistry 3.0 h.

Open only to biochemistry students. Preparation: 99.120, 99.130, 99.140.

99.279 Biochemistry 4.0 h.

Open only to biochemistry students. Preparation: 99.120, 99.130, 99.140.

99.280 Lipids 2.0 h.

Open only to biochemistry students. Preparation: 99.120, 99.130, 99.140.

99.281 Biophysical Chemistry I 4.0 h.

Molecular aspects of biochemistry, biophysical applications of biochemistry. Structure, properties, biochemistry, macromolecules, interactions of structure, function of biochemistry. Concepts of biochemistry, states of biochemistry. Biochemistry in life in physical chemistry.

99.282 Biophysical Chemistry II 4.0 h.


99.273 Seminar in Cell Biology and Molecular Genetics 1.0 h.

Open only to biochemistry students. Preparation: 99.281.

99.274 Seminar in Cell Biology and Molecular Genetics 1.0 h.

Open only to biochemistry students. Preparation: 99.281.

99.275 Seminar in Cell Biology and Molecular Genetics 1.0 h.

Open only to biochemistry students. Preparation: 99.281.

99.276 Seminar in Cell Biology and Molecular Genetics 1.0 h.

Open only to biochemistry students. Preparation: 99.281.

99.277 Seminar in Cell Biology and Molecular Genetics 1.0 h.

Open only to biochemistry students. Preparation: 99.281.

99.278 Seminar in Cell Biology and Molecular Genetics 1.0 h.

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Open only to biochemistry students. Preparation: 99.281.

99.283 Seminar in Cell Biology and Molecular Genetics 1.0 h.

Open only to biochemistry students. Preparation: 99.281.

99.284 Seminar in Cell Biology and Molecular Genetics 1.0 h.

Open only to biochemistry students. Preparation: 99.281.
FAMILY PRACTICE

Facilities

The department office, located in the孙悟空 Hospital on the 11th floor of the main building, is the center of the department activities. It consists of faculty offices and the Family Practice Medical Office. Patient families are assigned to a resident with faculty supervision and are seen by appointment. Responsibility for the patient is usually retained with the attending physician, or they move to the training program.

Enrollment is based on the principles of primary care management, including the organizational and leadership perspectives, and chart-walking methodologies required to manage primary care.

Courses

115-102 Rewat Dessouk (110) in Medicine 1.5 hrs.

115-104 Principles of Family Medicine 2 hrs.

115-110 Practice of Clinical Medicine 1.5 hrs.

115-050 Perspective on Family Practice 2 hrs.

The department directs a three-year residency program whose graduates are eligible for certification by the American Board of Family Practice. This residency meets prerequisites to provide continuing and comprehensive care to the total family and, in particular, in the integrative patient, all ages, health professionals, and the physician in an efficient and effective healthcare team.

The program is flexible, allowing residents to tailor their residency experience to fit their needs. It includes a broad spectrum of electives in internal medicine, pediatrics, obstetrics and gynecology, psychiatry, medical and surgical subspecialties, and community medicine. The program currently offers 20 individual rotations.

The hospital-based clinical experience is a unique contribution of exposure to practice in The University of Iowa hospitals and Clinics, where the hospital has been selected to receive credentials from all over the size, and in various community hospitals, where residency care is of the nature more typical of family practice.

During the first year, a large portion of the program is offered at Iowa Hospitals in Iowa City, where residents have the opportunity to be exposed to the variety of the practice—both hospital and out-of-office—of the practicing physicians staff. Rotations are specifically designed to provide broad experiences of the new graduates.

In the second and third years, residents spend increased time at the Family Practice Center and at The University of Iowa Hospitals and Clinics.

115-441 Family Practice: Clinical, Brecksville Hospital, Dept. of Family Practice (2 hrs.).

115-442 Emergencies from Obstetric Patients 1 hr.

115-501 Pediatrics 1 hr.

115-601 Pathology 1 hr.

115-701 Preventive Medicine 2 hrs.

115-801 Research and Evaluation 2 hrs.

115-901 Medical Ethics 1 hr.

115-101 Family Practice 1 hr.

115-102 Family Practice 1 hr.

115-103 Family Practice 1 hr.

115-104 Family Practice 1 hr.

115-105 Family Practice 1 hr.

115-110 Family Practice 1 hr.

115-120 Family Practice 1 hr.

115-130 Family Practice 1 hr.

115-140 Family Practice 1 hr.

115-150 Family Practice 1 hr.

115-160 Family Practice 1 hr.

115-170 Family Practice 1 hr.

115-180 Family Practice 1 hr.

115-190 Family Practice 1 hr.

115-200 Family Practice 1 hr.

115-210 Family Practice 1 hr.

115-220 Family Practice 1 hr.

115-230 Family Practice 1 hr.

115-240 Family Practice 1 hr.

115-250 Family Practice 1 hr.

115-260 Family Practice 1 hr.

115-270 Family Practice 1 hr.

115-280 Family Practice 1 hr.

115-290 Family Practice 1 hr.

115-300 Family Practice 1 hr.

115-310 Family Practice 1 hr.

115-320 Family Practice 1 hr.

115-330 Family Practice 1 hr.

115-340 Family Practice 1 hr.

115-350 Family Practice 1 hr.

115-360 Family Practice 1 hr.

115-370 Family Practice 1 hr.

115-380 Family Practice 1 hr.

115-390 Family Practice 1 hr.

115-400 Family Practice 1 hr.

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115-420 Family Practice 1 hr.

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115-650 Family Practice 1 hr.

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115-690 Family Practice 1 hr.

115-700 Family Practice 1 hr.

115-710 Family Practice 1 hr.

115-720 Family Practice 1 hr.

115-730 Family Practice 1 hr.

115-740 Family Practice 1 hr.

115-750 Family Practice 1 hr.

115-760 Family Practice 1 hr.

115-770 Family Practice 1 hr.

115-780 Family Practice 1 hr.

115-790 Family Practice 1 hr.

115-800 Family Practice 1 hr.

115-810 Family Practice 1 hr.

115-820 Family Practice 1 hr.

115-830 Family Practice 1 hr.

115-840 Family Practice 1 hr.

115-850 Family Practice 1 hr.

115-860 Family Practice 1 hr.

115-870 Family Practice 1 hr.

115-880 Family Practice 1 hr.

115-890 Family Practice 1 hr.

115-900 Family Practice 1 hr.
GENETICS

Graduate degree: Ph.D. in Genetics

The Ph.D. program in genetics is an interdisciplinary program involving members of the Departments of Biochemistry, Biological Sciences, Microbiology, and Physiology and Biophysics, as well as a number of faculty members in clinical departments. See "Graduate Programs in College of Liberal Arts" section of the Catalog for a list of participating faculty members, degree requirements, and courses.

HOSPITAL AND HEALTH ADMINISTRATION

Doctoral degree: Ph.D. in Health Administration

The University of Iowa Hospital and Health Administration program is one of the nation's leading programs in health care administration. The program is designed to prepare students for careers in hospital and health administration, both in the United States and abroad.

The program, which is accredited by the Accrediting Commission on Education for Health Services Administration, offers two graduate degrees—the Master of Arts (M.A.) and the Doctor of Philosophy (Ph.D.). The M.A. program is designed for students who seek management positions in hospital and health-related organizations. The Ph.D. program prepares candidates for teaching or research careers, as well as senior-level executive and policy positions.

Programs

Master of Arts

The master's degree in hospital and health administration requires four semesters of full-time study. The curriculum is designed to develop the knowledge, understanding, and skills that graduates need to succeed in responsible managerial positions in hospitals, long-term care institutions, alternative delivery systems, ambulatory care facilities, planning agencies, consulting firms, and other health-related organizations.

First-year students examine the social, political, economic, and financial aspects of hospitals and health care organizations. At the same time, they are introduced to the concepts, tools, and techniques of effective managerial decision making, planning, and control. Second-year students are exposed to advanced management concepts and applications to health care.

Sixty semester hours of graduate work are required for the degree. Required courses, totaling 39 semester hours and representing a core of disciplines and fields of knowledge, are carefully sequenced to establish a unified approach to learning. The 60-semester hour curriculum includes the following required courses:

- 451: Executive Seminar Series 0 s.h.
- 450: Introduction to Health Care Management Organization 3 s.h.
- 451: Health Care Management 3 s.h.
- 450: Quantitative Management Techniques in Health Care 3 s.h.
- 450: Management Issues in Health Management and Policy 3 s.h.
- 450: Intermediate Micro-Economic Theory 3 s.h.
- 450: Health Economics 3 s.h.
- 450: Financial Management of Health Institutions 3 s.h.
- 450: Managerial Decision Support Systems 3 s.h.
- 450: Legal Aspects of Health and Medical Care 3 s.h.
- 450: Personnel Management 3 s.h.
- 450: Accounting for Managers 1 s.h.
- 450: Statistical Methods 3 s.h.

Electives 21 s.h.

At least 9 of these 21 semester hours must be taken in the hospital and health administration program.

A thesis is optional for the master's degree but is recommended for students intending to pursue doctoral studies.

Health Care Analytics Specialization

The need for data analysts and health care managers who are specialists in quality assurance (QA) and utilization review (UR) or planning is increasing as information systems improve and health care organizations search for ways to improve quality and contain costs. Responding to this emerging job market for health care analysts, The University of Iowa offers a concentration in health analytics within its M.A. program. The health analytics concentration offers both a general management M.A. by including more advanced coverage of epidemiology, statistics, QA/UR, and health planning. Students learn to apply research methods, including small area analysis, to a variety of health management activities.

Agging and Long-term Care Specialization

The specialization in aging and long-term care was developed in conjunction with The University of Iowa Aging Studies Program in response to two trends: the growing number of elderly and the increasing need of long-term care facilities and home health care. The aging and long-term care specialization positions graduates to fill the growing demand for qualified health care executives skilled in these areas.

The aging and long-term care specialization requires 45 hours of graduate work, including all required courses plus the following:

Electives in hospital and health administration or aging studies 12 s.h.

At least 3 seminar hours must be taken in the hospital and health administration program.

B3234 Administrative Residency in Aging and Long-term Care 6 s.h.

*The state of Iowa requires a total of 72 continuing education credits for nursing home administrator. Residency hours may be completed throughout the program of study. The residency requirement may be satisfied through off-campus experience prior to and/or at the conclusion of the didactic work.

H-H.A.-M.B.A. Program

The H-H.A.-M.B.A. dual degree program is designed for students who want to combine the traditional strengths of the Graduate Program in Hospital and Health Administration with greater exposure to advanced management techniques. A minimum of 72 semester hours must be earned for both degrees to be awarded. Of this requirement, 12 semester hours must be taken in the hospital and health administration program. This dual degree program can be completed in two to three years or less, depending on full-time study.

Five-Year Program

The University of Iowa was the first institution in the nation to offer a five-year program in hospital and health administration in nontraditional study. This degree, which was launched with a grant from the W.K. Kellogg Foundation, is designed to help students complete their baccalaureate and master's degrees in five years rather than the usual six.

To be eligible for admission, students must complete all general requirements for a bachelor's degree and be recommended by the institution by the end of the summer session of their junior year.
During the senior year, students are enrolled in the program in hospital and administrative rotation under the medicine administration internship. After completing the first year of the program, the board may consider the student ready for the internship rotation. For completion of the second year of study, the student is required to complete 24 hours of supervised activity.

Joint Programs

Students who wish to pursue an integrated program combining a graduate degree in hospital and health administration with that of another field are encouraged to do so. In addition to the M.A., M.B.A., and M.S. degree programs, joint programs currently are offered with the College of Law (J.D.) and the Program in Urban and Regional Planning (M.S.).

The joint program with Urban and Regional Planning requires two-and-one-half years of full-time study. Other alternatives may be established on an individual basis. Students interested in a joint program should discuss their plans with both academic units and indicate their interest when submitting application materials.

Summer Internships, Fellowships, Residencies

The program encourages placement of students in optional summer internships the summer between the first two years of study. Most institutions require students to accept an academic position with an administrative graduate fellowship or residency. Such experiences are important in preparing students for successful academic and administrative careers. The program takes an active role in assisting students to identify and secure fellowships and residency positions.

Doctor of Philosophy

The Ph.D. program, the nation's only doctoral program in hospital and health administration, prepares students to assume positions in teaching and research as well as senior policy and administrative assignments. Graduates of the program demonstrate advanced capabilities in research and management that enable them to function effectively in a wide variety of health-related organizations.

The Ph.D. requires completion of a minimum of 90 graduate academic hours, comprehensive examinations, and a dissertation. Graduate candidates prepare dissertation proposals based on original research that tests, extends, or applies concepts or principles to a problem in health care. The program requires all doctoral students to develop expertise in three areas of study. These areas are required courses in addition to a dissertation

Health Services Management and Policy

80:239 The Politics of Health Policy 3 s.h.
80:251 Planning to Health Policy 3 s.h.
80:253 Seminar: Health Systems Management 3 s.h.

90:235 Seminar in Contemporary Health Issues 3 s.h.

Research Methodology and Statistics

90:261 Health Services Research I 3-4 s.h.
90:263 Health Services Research II 3-4 s.h.
90:563 Independent Research Project - 3-6 s.h.

Advanced Statistical Techniques

Doctoral students also are required to complete at least four courses (a minimum of 12 semester hours) from a statistics sequence. They may choose from the general measurement/psychometric sequence, as follows:

77:263 Biostatistical Methods 4 s.h.
77:244 Correlation and Regression 3 s.h.
77:245 Applications of Multivariate Statistical Methods 3 s.h.
80:425 Multivariate Analysis 3 s.h.

The student may choose another statistical sequence depending on their choice of minor area.

HRD

Students must complete at least 12 semester hours in a discipline such as epidemiology, sociology, political science, social psychology, management science, or economics.

Alumni Association

An active alumni association supports the program in many ways, including scholarships, curriculum consultation, 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 as preceptors for summer internships, residencies, and fellowships.

Each fall, the program sponsors the Annual Alumni Symposium, a day-long conference for health care executives, featuring presentations by leaders in the health care field. This event brings together alumni, students, educators, and leaders of the health care industry to address and discuss major issues in health care. Recurrent symposium themes have included the changing role of the physician, the balance between business and the health mission, prospects for a new era in American health care, leadership in health care services, and managerial applications of health care research.

Admission

Applicants to the master's program are required to hold a baccalaureate degree except for recent admission program applicant. Applicants to the Ph.D. program generally are expected to hold a master's degree in a health-related field, although other degrees will be considered. A 3.00 grade point average (on a 4.00 scale) is required. Combined Graduate Record Examination (GRE) General Test verbal and quantitative scores above 1000 or Graduate Management Admission Test (GMAT) scores above 500 are preferred. Coaches in business, economics, and statistics are strongly recommended.

All applicants are required to submit academic transcripts, GRE or GMAT scores, three letters of recommendation, and a written statement of interest in the program. Occasionally, admissions are made for the fall semester only. Campus visits are encouraged and personal interviews are required prior to admission. Those eligible to interview on campus are made to interview with a program alumni in the applicant's home area.

Financial Aid

Approximately three-quarters of the students in the program receive some form of financial aid. Every effort is made to provide financial assistance to all students who demonstrate need.

In addition to various scholarships, grants, and loan programs administered by the University, the program provides qualified students with research scholarships that afford valuable experiences in health services research and management projects. Research assistant work 10 to 20 hours per week and must apply for reappointments each semester. Appointment as a research assistant provides a stipend and entitles nonresident students to in-state tuition rates.

In addition to these student financial aid programs, opportunities 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.

Center for Health Services Research

The Center for Health Services Research (CHR), the research directorate of the Graduate Program in Hospital and Health Administration since 1961, is the University's local point for a broad-based program of health services research.

Through its coordination and support of the CHR, faculty and staff from colleges and departments throughout the University investigate for the organization, delivery, efficiency, and financing of health care services. CHR initiatives embrace a broad spectrum of perspectives and disciplines, including management science, health care organizations, economics, geography, organizational behavior, psychology, operational research, sociology, preventive medicine and environmental health, preventive and community services, nursing, and clinical medicine.

Through its research activities, the center promotes high-quality research among faculty and graduate students throughout the University. CHR also fosters presentations and publications, and provides post-doctoral fellowship programs that are designed to train individuals in the application of scientific principles to health services research and policy formulation.
MEDICAL SCIENTIST TRAINING PROGRAM

Director: Robert S. Kehoe (Pathology and Immunology)
Associate Director: Stephen Johnson (Microbiology)

The Iowa Medical Scientist Training Program is a graduate-level, 2-year program that prepares trainees for careers in academic medicine, with emphasis on preclinical and clinical research. To qualify, the program provides efficient transition of graduate education, doctoral training, research and clinical training, and all clinical studies necessary for the medical degree. Requirements for both the M.D. and Ph.D. degrees can be completed in approximately seven years of continuous study.

In the first two years of the program, trainees are associated primarily with the College of Medicine for the basic science and introductory clinical portions of its curriculum. The basic science core of the first two semesters consists of formal courses in biochemistry, histology, anatomy, embryology, biochemistry, hematology, virology, physiology, immunology, pharmacology, and preventive medicine. These courses provide the language and organizing concepts of the preclinical sciences that are the foundation for subsequent training in both research and clinical medicine.

During the summer between the first and second years, trainees engage in research under the supervision of a member of the program faculty. Entering medical or law school may also choose to do research during the summer before their first year.

In the second semester of the second year, trainees enroll in an introduction to clinical medicine sequence that provides instruction and practice in medical history taking, physical diagnosis, and clinical reasoning. This early clinical component integrates scientific and clinical aspects of the program and provides an overview of research needs in the fields of diagnosis, therapy, and patient care. This early clinical component integrates scientific and clinical aspects of the program and provides an overview of research needs in the fields of diagnosis, therapy, and patient care. This early clinical component integrates scientific and clinical aspects of the program and provides an overview of research needs in the fields of diagnosis, therapy, and patient care. This early clinical component integrates scientific and clinical aspects of the program and provides an overview of research needs in the fields of diagnosis, therapy, and patient care. This early clinical component integrates scientific and clinical aspects of the program and provides an overview of research needs in the fields of diagnosis, therapy, and patient care.

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Application Procedues

The University of Iowa College of Medicine participates in the National Medical College Application Service (AMCAS). Program applicants should utilize the AMCAS application to apply for admission to the College of Medicine (AAMC31) as soon as possible before fall 15. At the time of application, applicants should submit a separate Medical Scientist Training-Program application from the AMCAS application. All applications to the Medical Scientist Training Program are reviewed by the program selection committee after AMCAS applications are received.

The deadline for receipt of applications is December 1. Applicants should be admitted to the program as early as possible to facilitate review by both the College of Medicine and the program committees, and the program selection committee. Equivalently determined is good to all applicants regardless of their state of residence.

Courses

ISM 2131: MSTP Research Support

Enrollment in this course is open only to students in the medical scientist training program.
Financial Aid
Graduate students in the Molecular Biology Ph.D. program receive stipends and tuition support from institutional and extramural sources, including training grants from the National Institutes of Health as well as the University of Iowa fellowships and graduate research assistantships.

Facilities
Training is conducted primarily in laboratories and teaching facilities of the Departments of Biochemistry, Biology, Microbiology, and Pharmacology and Biophysics—those which feature degree programs—and the Department of Internal Medicine, Pathology, and Pediatrics, whose focus is clinical. Faculty laboratories and core research facilities available to students provide access to the most up-to-date research equipment, including an oligonucleotide synthesizer and an automated DNA sequence analysis apparatus.

Admission
Individuals seeking application materials and information about graduate training in molecular biology should contact the Molecular Biology Ph.D. Program.

Courses
142.101 Microbiology I 3 s.h.
Mechanisms, regulation of Bacteria, DNA, RNA, and ribosomal RNA synthesis, emphasis on experimental methods for microbiology, genetics, microbiology, DNA analysis of gene products. Prerequisite: 94.101 or equivalent.

142.102 Microbiology II 3 s.h.
Mechanisms, regulation of RNA, DNA synthesis, ribosome biogenesis, intranuclear transport of ribonucleic acid, genetic control of ribosome synthesis, experimental techniques for analysis of these processes. Prerequisite: 142.101.

142.199 Cell Biology I 3 s.h.
Introduction to cell biology, general research design, cell structure, functions of cellular compartments, cell morphology, cell morphology, cell morphology. Prerequisites: 94.101 and 142.102.

142.201 Cell Biology II 3 s.h.
Cell biology, genetics, experimental techniques, regulation of cell differentiation, experimental techniques, cell morphology, cell morphology. Prerequisites: 142.199 and 142.102.

142.299 Special Topics in Molecular Biology 1-6 s.h.
Research in molecular biology. May be repeated. Open only to graduate students. Prerequisite: 142.101.

142.301 Directed Study in Molecular Biology 1-6 s.h.
Consent of instructor required.

142.365 Molecular Biology Research 3 s.h.
Open only to molecular biology graduate students. Consent of instructor required.

142.455 Thesis 1-6 s.h.
Open only to advanced degree candidates in molecular biology.

NEUROLOGY
Head: Aristotle E. Dimoulo
Professor Emeritus
144.101 Neurobiology of the Nervous System
144.102 Neurobiology of the Nervous System
144.201 Neurobiology of the Nervous System
144.202 Neurobiology of the Nervous System
144.203 Neurobiology of the Nervous System
144.204 Neurobiology of the Nervous System

Admissions
Individuals seeking application materials and information about graduate training in molecular biology should contact the Molecular Biology Ph.D. Program.

Courses
144.101 Neurobiology of the Nervous System 3 s.h.
Mechanisms, regulation of Bacteria, DNA, RNA, and ribosomal RNA synthesis, emphasis on experimental methods for microbiology, genetics, microbiology, DNA analysis of gene products. Prerequisite: 94.101 or equivalent.

144.102 Microbiology II 3 s.h.
Mechanisms, regulation of RNA, DNA synthesis, ribosome biogenesis, intranuclear transport of ribonucleic acid, genetic control of ribosome synthesis, experimental techniques for analysis of these processes. Prerequisite: 142.101.

142.199 Cell Biology I 3 s.h.
Introduction to cell biology, general research design, cell structure, functions of cellular compartments, cell morphology, cell morphology. Prerequisites: 94.101 and 142.102.

142.201 Cell Biology II 3 s.h.
Cell biology, genetics, experimental techniques, regulation of cell differentiation, experimental techniques, cell morphology, cell morphology. Prerequisites: 142.199 and 142.102.

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Research in molecular biology. May be repeated. Open only to graduate students. Prerequisite: 142.101.

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Consent of instructor required.

142.365 Molecular Biology Research 3 s.h.
Open only to molecular biology graduate students. Consent of instructor required.

142.455 Thesis 1-6 s.h.
Open only to advanced degree candidates in molecular biology.
Programs

Course Work for M.D. Students

Course 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, laboratory, and independent assignments, ward rounds, teaching seminars, and special elective courses.

The third-year clerkship (66-A Clinical Obstetrics and Gynecology) gives students the core knowledge, skills, and attitudes needed to provide primary health care to female patients. The department offers four-year students a variety of electives that provide advanced training in the special areas of obstetrics and gynecology. In addition a clerkship at The University of Iowa Hospitals and Clinics, these electives include a rotation at the Guatemala Clinic, La Clinica, Wisconsin, and other arranged off-campus courses.

Residency Program

The department offers a four-year residency. Upon completion, graduates are eligible for the written and oral examinations leading to certification by the American Board of Obstetrics and Gynecology.

Residents are assigned to the various divisions and clinical services of the department and care for both hospital inpatients and outpatients. Additional training is offered in prenatal clinics in Waterloo, Des Moines, Moline, Illinois, and Denver. During the final two years, residents spend time at Iowa Methodist Hospital and Broadways Medical Center in Des Moines, and at St. Luke's Hospital in Denver. They are trained in normal and abnormal obstetrics, gynecology, oncology, radiology, obstetrics, gynecologic oncology, family planning, and endoscopic procedures.

Courses

66-A Clinical Obstetrics and Gynecology

am

4 cr. Prerequisites: in specific Situations, clinical evaluation of abnormal, and/or gynecologic symptoms, ongoing concepts of patient education, and a foundation in reproductive disease. Special clinics, diagnostic methods, laboratory procedures, endoscopic techniques, gynecologic surgery, family planning, and endoscopic procedures.

66-A Advanced Obstetrics and Gynecology

am

4 cr. Prerequisites: in specific Situations, clinical evaluation of abnormal, and/or gynecologic symptoms, ongoing concepts of patient education, and a foundation in reproductive disease. Special clinics, diagnostic methods, laboratory procedures, endoscopic techniques, gynecologic surgery, family planning, and endoscopic procedures.

66-A Advanced Obstetrics and Gynecology

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66-A Advanced Obstetrics and Gynecology

am

4 cr. Prerequisites: in specific Situations, clinical evaluation of abnormal, and/or gynecologic symptoms, ongoing concepts of patient education, and a foundation in reproductive disease. Special clinics, diagnostic methods, laboratory procedures, endoscopic techniques, gynecologic surgery, family planning, and endoscopic procedures.
Residency Program

The department is approved for 20 residency positions in pathology, covering a training period 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 an active rotation through the various laboratory services, including surgical pathology, autopsy pathology, cytology, clinical chemistry, clinical microbiology, hematology, immunopathology, and transfusion center. There are opportunities for one or two years of additional fellowship training in most pathology subspecialties.

The department also offers a postdoctoral training program in clinical chemistry for benchwork and chemists, which is approved by the American Board of Clinical Chemistry. In addition, the department provides six 12-month externships and a variable number of externships for professional nurses in any of the areas of anatomic and clinical laboratory pathology. One of the externships is a full-time research position in areas of clinical and experimental pathology.

Postdoctoral Training

The Department of Pathology offers postdoctoral programs in hemopathology, immunopathology, transfusion medicine, laboratory medicine, cytopathology, neuropathology, and surgical pathology for physicians who have completed at least two years of residency training in pathology. The postdoctoral training consists of one year of diagnostic work and one year of laboratory research.

The department also provides postdoctoral research training in the areas of health professions, 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 the 40,000 square feet of clinical laboratories of The University of Iowa Hospitals and Clinics and has individual research and core facility laboratories for cellular and molecular pathology research at the Clinical Research Center, Medical Laboratories, and at the Veterans Affairs Medical Center. Also available are the College of Medicine Core Laboratories for nucleic and chemical, histological, production, flow cytometry, ultrasonic studies, protein structure, image analysis, and laboratory animal care.

Courses

69-999 Cooperative Education Internship

Work in a hospital, research, environmental, or industrial laboratory setting. Open only to medical technology students.

69-104 Principles of Human Pathology

Topics include disease processes in various organ systems, related to normal cells and tissue, genetic factors in disease processes, and the interrelation of disease processes in the body. Open only to medical technology students.

69-119 Immunology in Clinical Laboratory Science

Topics include transplantation immunology in clinical laboratories. Open only to medical technology students. Open only to medical technology students.

69-121 Immunology in Medical Technology

Topics include clinical laboratory techniques in the detection of viruses and bacteria. Open only to medical technology students.

69-122 Clinical Chemistry for Medical Technology

Topics include clinical laboratory techniques in the detection of viruses and bacteria. Open only to medical technology students.

69-123 Immunology in Medical Technology

Topics include clinical laboratory techniques in the detection of viruses and bacteria. Open only to medical technology students.

69-127 Clinical Immunology for Medical Technology

Topics include clinical laboratory techniques in the detection of viruses and bacteria. Open only to medical technology students.

69-128 Clinical Microbiology for Medical Technology

Topics include clinical laboratory techniques in the detection of viruses and bacteria. Open only to medical technology students.

69-129 Clinical Pathology for Medical Technology

Topics include clinical laboratory techniques in the detection of viruses and bacteria. Open only to medical technology students.

69-130 Clinical Pathology for Physical Anthropology

Topics include clinical laboratory techniques in the detection of viruses and bacteria. Open only to medical technology students.

69-131 Introduction to Nuclear Medicine

Topics include detection of pathological processes, Open only to medical technology students.

69-132 Microbiology in Medical Technology

Topics include detection of pathological processes, Open only to medical technology students.

69-135 Individual Study in Clinical Laboratory Science

Topics include detection of pathological processes, Open only to medical technology students.

69-136 Independent Study in Laboratory Medicine

Open only to medical technology students.

69-137 Independent Study in Clinical Laboratory Instrumentation

Open only to medical technology students.
Graduate Programs

Master of Science

In cooperation with clinical departments in the College of Medicine, the Department of Pharmacology offers a Master of Science program in clinical pharmacology to applicants who already hold the Doctor of Medicine degree. The specific objective of this program is to provide increased emphasis on and training in the science of clinical pharmacology for residents in the various clinical specialties.

Completion of the M.S. program requires a minimum of two years. Satisfaction completion of the following two core courses is mandatory unless specifically waived by the Department of Pharmacology faculty. Any of these course requirements may be waived at the request of the training faculty, if it is felt that the student has demonstrated satisfactory performance in the science of clinical pharmacology for residents in the various clinical specialties.

Financial Aid

Financial support is available for all predoctoral and postdoctoral students in pharmacology.

Courses

Pharmacology for non-pharmacologists

Pharmacology for Hospital Physicians

Medical Pharmacology

Courses for Hospital Physicians: Medical

Pharmacology for Health Sciences: Dental

Undergraduate Research Independent Study

Prerequisites for graduate study include undergraduate background in chemistry, biology, and mathematics. The level of performance in undergraduate courses must be in the top quartile.

Doctor of Philosophy

The following are core course requirements for the Ph.D. in pharmacology:

1. Pharmacology for Graduate Students and Select Special Courses in the Research Training Workshops and Seminars in the Preclinical Sciences and Preclinical Medicine.

2. Advanced Pharmacology (500-level courses)

3. Research in the Clinical Sciences (required for those planning a research career in the Clinical Sciences)

4. Graduate Independent Study

The student must also take additional courses in the research training workshops and seminars (as required), in consultation with the major professor and the advising committee.

There is no departmental foreign language requirement.

Students are expected to obtain maximum laboratory research experience during the first two years. As prerequisite to the comprehensive examination and in lieu of a preliminary examination, students must submit to the board of graduate studies a manuscript of a program report detailing research accomplished during the first two years of study. After reviewing the report with a committee of the faculty, the student begins or continues his Ph.D. research. The Ph.D. comprehensive examination (written and oral) is given at the end of the third semester. Satisfactory preparation and oral defense of the thesis complete the program.

See "Division of Associated Medical Sciences."

1.9.02 Medical Pharmacology

2.1.03 Neuropharmacology

3.1.04 Biomedical Pharmacology

4.1.05 Clinical Pharmacology

5.1.06 Veterinary Pharmacology

6.1.07 Environmental Pharmacology

7.1.08 Pharmacokinetics

8.1.09 Pharmacoeconomics

9.1.10 Pharmacology of Aging

10.1.11 Pharmacology of Aging

11.1.12 Pharmacology of Aging

12.1.13 Pharmacology of Aging

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30.1.31 Pharmacology of Aging

31.1.32 Pharmacology of Aging
PHYSICIAN ASSISTANT PROGRAM

See "Directory of Associated Medical Sciences."

PHYSIOLOGY AND BIOPHYSICS
Head: Robert S. Holcomb
Professor:看作
Instructor:看作
Assistant:看作

Graduate Program

The program in physiology and biophysics is designed to provide broad general knowledge of fundamental life processes at the molecular, cellular, and organ levels, as well as an opportunity for intensive study in major areas of physiology and biophysics with emphasis on endocrinology, neurobiology, and immunology. The program focuses on the development of modern research skills and their application in the context of original dissertation research.

Entering students are advised by the director of graduate studies, who provides guidance in the planning of required course work and an introduction to research activities of the department. The core curriculum includes two semesters of cell biology, two semesters of molecular biology or neurobiology, and one semester of medical physiology. The department also offers advanced, specialized courses in membrane physiology, cardiovascular physiology, and exercise physiology, and neurophysiology. Students elect to take courses in other departments appropriate to their individual research and professional objectives.

After completing course work and performing satisfactorily on a comprehensive examination based on an original research proposal, students devote themselves full time to research that culminates in the preparation of a doctoral dissertation to be defended in a final examination.

All degree candidates have supervised experience as research associates and teaching assistants in part of their graduate programs.

Admission

Applicants for graduate study in physiology must complete an application in the Office of the Director of Graduate Studies. At least a 3.0 overall grade point average, coupled with a combined verbal and quantitative score higher than 1200 on the Graduate Record Examination (GRE) General Test. The appropriate background for graduate study in cellular and molecular physiology and biophysics is an undergraduate minor in one of the biological, chemical, physical, or psychological, or engineering scientist with appropriate training in biochemistry, genetics, physics, chemistry, and calculus.

Financial Aid

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 reviewed annually based on satisfactory progress in meeting requirements for the Ph.D. degree.

Research

The major research interests of the Department are in molecular and cellular endocrinology, cellular and developmental neurobiology, and molecular and medical physiology. Specific areas of interest include hormone receptors, reproductive endocrinology, signal transduction, regulation of gene expression, synaptic modulation, neurotransmitter, sensory neuron development, synaptic transmission, and regulation of excitability, cardiovascular electrophysiology and regulation.

Facilities

The Department of Physiology and Biophysics occupies two floors devoted to research, and teaching in the Brown Science Building and has an additional laboratory facility in the Eckert Medical Research Building and at the nearby Oakleigh campus. In addition to specialized equipment in faculty research laboratories, the department has an extensive microcomputer network with direct access to University mainframe and supercomputer and a computer imaging facility. The department also provides fluorimetric microscopy, enzyme analysis, and equipment for cell culture and molecular biology. Graduate students have study space near the Jeffersonian library, which supports resources available at the Hornets Library for the Health Sciences.

Courses

9.102 Respiratory Physiology 4 ch.
   - Basic concepts. Open only to medical students. Offered during the fall.
9.104 Advanced Respiratory Physiology 4 ch.
   - Physiological bases, cell function. Offered spring semester. Connects with course of cell biology.
9.105 Immunology 4 ch.
   - Advanced biochemistry. 3.0 or C in 2.0 of 4.0 or above.
9.106 Molecular Biology 4 ch.
   - Advanced biochemistry. 3.0 or C in 2.0 of 4.0 or above.

9.108 Mammalian Physiology 4 ch.
   - Principles, organ systems, cell functions. Open only to medical students. Offered spring semester. Connects with course of cell biology.
9.109 Molecular Endocrinology 4 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.110 Human Physiology for Physicians Assistant 4 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.110B Human Physiology for Physicians Assistant 4 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.110C Human Physiology for Physicians Assistant 4 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.201 Medical Embryology 2 ch.
   - Developmental processes and cell biology. Offered spring semester. Connects with course of cell biology.
9.202 Medical Embryology 2 ch.
   - Developmental processes and cell biology. Offered spring semester. Connects with course of cell biology.
9.203 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.204 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.205 Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.206 Cell Biology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.207 Biochemistry and Signal Transduction 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.210 Cellular Medicine 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.211 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.212 Cell Biology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.220 Cellular Medicine 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.221 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.222 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.223 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
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   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.225 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
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   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.227 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
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   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
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   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.230 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.231 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.232 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.233 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.234 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.235 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
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   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.237 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.238 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.239 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.240 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
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   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.242 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.243 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.244 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.245 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
9.246 Medical Pharmacology 2 ch.
   - The role of hormones in the body. Offered spring semester. Connects with course of cell biology.
Examples of ongoing departmental research and activities include the State Health Registry of Iowa, which records cancer incidence and mortality, a major effort which examines health problems and needs of a representative sample of Iowa’s elderly through the Preventive Intervention Center; the University Occupational Health Service; WAREHOUSE Iowa; the Biostatistical Consulting Service; the Center for Environmental Health Evaluation; Research; the Clinical Trials Data Management Center; and the Internal Medicine’s division of clinical epidemiology.

Graduate Programs

The master’s program offers a degree with emphasis in occupational and environmental health, biostatistics, or community health. Admissions to the community health track is limited to those who already are health professionals. The Ph.D. program is available with an emphasis in epidemiology, biostatistics, or occupational and environmental health. While pursuing a degree, students are expected to complete a 3.0 grade point average, in addition, students who receive 7 semester hours or more of grades of C or lower in determinate course work are dismissed from the program. A joint master’s option exists between the Program in Urban and Regional Planning and the Department of Preventive Medicine and Environmental Health. This option results in an M.A. or an M.S. in planning and an M.S. in preventive medicine and environmental health. Graduate students in both academic units are admitted. (See Urban and Regional Planning in the College of Liberal Arts section of the Catalog). The combined graduate-level course of study between the Physician Assistant Program and the Department of Preventive Medicine and Environmental Health provides a broad foundation in preventive medicine. This two-year combined curriculum consists of 26 semester hours of graduate courses in epidemiology, environmental health, biostatistics, and preventive medicine, and 95 semester hours of course work made up of the standard core curriculum of the Physician Assistant Program. Electives may be selected from a wide range of course offerings in the Department of Preventive Medicine and Environmental Health and in other departments in the College of Medicine. Upon completion of the program, students earn an M.S. in the Physician Assistant Program from the College of Medicine and an M.S. in preventive medicine and environmental health from the College of Medicine. The program is described in detail under "Physician Assistant Program" in the College of Associated Medical Sciences section of the Catalog. The Graduate College has approved a proposal to change the joint program so that students would earn a Master of Physician Assistant Studies (M.P.A.S.) degree. The proposal is currently under consideration by the Board of Regents and is pending.

Admission

Application deadlines for U.S. citizens are July 15 for fall semester, December 1 for spring semester, and March 1 for summer sessions. These deadlines apply both to University of Iowa and non-University of Iowa students. Application deadlines for foreign students are April 15 for fall semester, October 15 for spring semester, and March 1 for summer sessions. Minimum grade-point average requirements are 3.0 for admission to the master's program and 3.0 for the Ph.D. Applicants must have taken the Graduate Record Examination (GRE). The recommended score for most students is a combined verbal and quantitative score of 1450 or higher. Also, if required by the University Foreign Admissions Office, non-U.S. citizens must complete the Test of English as a Foreign Language (TOEFL). A minimum combined score of 600 is considered acceptable for most students. Some English courses are required for foreign students whose TOEFL score is between 550 and 600. Scores of 525 or less will require rigorous evaluation.

Applicants must have an undergraduate violet or course background in science or mathematics, depending on their proposed program of graduate study. However, in order to complete a master's program with emphasis in community health, applicants must have a background or be pursuing an advanced degree in the health sciences and with an expressed preventive medicine and environmental health principles to their respective professional activities. Applicants who meet the requirements for the M.S. or Ph.D. programs but who do not want to continue in the programs, may be admitted or "professional improvement" status.

Also, applicants are required to specify on the application for one of the programs to which they are applying and to submit three letters of recommendation. A short description of their professional goals set forth why they want the degree, and a current resume.

Financial Aid

A limited number of research fellowships, assistantships, and tuition grants are available within the department.

Institute of Agricultural Medicine and Occupational Health

The Institute of Agricultural Medicine and Occupational Health is the first agency in the western two-thirds of the state dedicated to the study of occupational health problems of the agricultural
The Department of Urology at The University of Iowa College of Medicine offers courses in all three fields at undergraduate and graduate levels and in continuing education for the delivery of urology care.

In the first year of the M.D. program, the department participates with several of the basic science departments in teaching how urology relates to the basic sciences. The department participates with the Department of Microbiology in teaching and research in the areas of kidney and bladder disease.

The Department of Urology participates actively in 56111 Introduction to Clinical Medicine, which involves the entire second semester of second-year medicine. The department offers an extensive lecture program in diagnostic urology, urological oncology, and the entire field of urology. In the required third-year clerkship, the department offers the basics of urology, and in the fourth year it offers advanced elective courses of intensive study in these areas.

The department continues education throughout the year for urologists and family practitioners. These activities are conducted by the senior staff, whose interests include pediatric urology, reproductive physiology, urologic oncology, transurethral resection, and prostatic diseases.

The department has earned international recognition for its studies of prostate diseases.

The urological laboratories conduct research and offer instruction in experimental urology, cellular immunology, and computerized imaging.

Courses

79-104 Clinical Urology 2 sh.
Week in urology clinic; ward; responsibility for patient care, working with residents.

79-150 Advanced Clerkship in Urology 4 sh.
Exposure to surgical and medical wards; preoperative and postoperative management of patients.

79-159 Advanced Clerkship in Pediatric Urology 3 sh.
Exposure to out-patient clinic and surgery; supportive care of patients.

79-110 Individ. Study and Research 2 s.h.
Preparation of clinical projects; data tables of research presentations; collaborative on a publication.

79-130 Urological Oncology 1 sh.
Intensive preoperative, management of gastrointestinal tract and urologic tract; urological practice, radiology; collaborative on a publication.

79-150 Male Sterilization and Reversal 1 sh.
Current status of male sterilization; laboratory methods of semen analysis; surgical techniques of vasectomy and vasovasostomy.

79-110 Uroscopy 4 sh.
Clinical applications in diagnostic techniques; uroscopy; uroscopy, full participation in all patient evaluation, uroscopy; uroscopy; laboratory techniques.

79-120 Urology Elective for Physician Assistant Students 3 sh.

79-169 Special Study Off Campus 2 sh.
College of Nursing

Dean: Cendrine Felton
Dean assistant: Maria Andrade
Associate dean, undergraduate studies and student services: Debbie Powers
Assistant dean, clinical practice and director, University of Iowa Hospitals and Clinics nursing service: Sally Mattis
Director, continuing nursing education: Kathleen Kelly
Director, nursing research development and utilization: Tad Tripe Pepper
Associate director, nursing research development and utilization: Kathleen Rockwell
Director, smoker services: Leslee Cunningham
Professor: Kathleen Bumgardner, Cendrine Felton, Laura McClure, Tad Tripe Pepper, Barbara Thomas
Professor emeritus: Myrt Ainsworth, Elin Erikson, Rosemary McElroy, Hope Solomon
Associate professor: Gloria Batchelor, Tad Tripe, Martha Cahil, Di Patrick Donaldson, Linda Elder, BLM Penuel, Rose Marie Pheifich, Steve German, Mary Horii, Laura Hunter, Jean Lakin, Charlotte Haas, Leslie Marcink, Eleanor McCollard, Sandra Powell, Joan Reiss, Elizabeth Spencer
Associate professor emeritus: Cendrine Bumgardner, Paulette Horst, Mildred Howell, Marcella Gould, Nancy Jackson, Marguerite Lytle, Anna S. Overbeck, Ilka H. Raines
Assistant professor: Mary Binger, Peter Burkhaus, Martha Carpenter, Mary Kathleen Cash, Pete Scott, Caren Covert, Carol Currier, Carol Davis, Ann Duvall, Ann Inman, Susan Johnson, Kathleen Kelly, Louise KLINK, Sonya Lemos Freuden, Paula Maggs, Lenore Habber, Beverly Salmon, Annette Schaal, Mary Spencer Stevens, Edie Steiner, Jane Williams
Assistant professor emeritus: Bella Ainsworth, Marie Hill, Mary Back
Undergraduate degree: B.S.N.
Graduate degrees: M.A., Ph.D. in Nursing
The College of Nursing is an integral part of The University of Iowa Health Care, 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 contact other centers for academic interests, and abilities in the many general and special activities of a major research university.

Both the baccalaureate and masters programs at the college are accredited by the Department of Baccalaureate and Higher Degree Programs of the National League for Nursing, the professional accrediting agency for college and university programs of nursing education. The baccalaureate program is approved by the Iowa Board of Health. The master's program is considered to be of a graduate quality to Iowa. The licensure examination required for practice as registered nurse.

Undergraduate Program

The Baccalaureate 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 basis for graduate study in nursing.

In addition to the traditional 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 diverse campus community. In so less than in other pursuits, a college or university background prepares people only to be prepared for a career but also to achieve a wider range of health promotion and teaching activities used to coordinate care in any sector of the health care system.

The nursing major provides a basis for many 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 the continuum of health, illness, and disability.

In addition to providing care, the nurse serves as a coordinator of health care by interjecting and facilitating the delivery of comprehensively, efficient, and appropriate services to individuals, families, groups, and communities.

Information about the program and courses may be obtained from the Office of Undergraduate Nursing Education, 310 Dickinson Hall, Iowa City, Iowa 52242. Information about the requirements for admission to the program and the courses included in the curriculum will be provided by the Office of Undergraduate Nursing Education, 310 Dickinson Hall, Iowa City, Iowa 52242.

Approaches to the College of Nursing

Students may complete their entire program at Iowa, enrolling during their first year and one-half to two years in the College of Liberal Arts. Some students may find that a two-year program is more appropriate for their needs.

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. The program affords undergraduates the experience to work closely with a preceptor while being employed, and with a faculty member in pre- and post-internship seminars.

Honors

The University of Iowa College of Nursing Baccalaureate Honor Program provides additional recognition and experience for qualified individuals. To be eligible, students must have completed the first clinical nursing course and must maintain a 3.25 cumulative grade-point average in their major. The College of Nursing presents the honors pinning ceremony as an additional element to the student's educational experience. The program is designed to accommodate the needs of students interested in the clinical, academic, and professional development of the student and the graduate. The program is conducted by the College of Nursing and the National Honor Society.

Pregraduation Assessment Test

All students are encouraged to take a pregraduation assessment test during the fall semester of their senior year. The test is designed to assess nursing students' current knowledge, skills, and knowledge in application to various clinical situations. It identifies students' specific strengths, weaknesses, and provides a sense of direction for future study and a means for setting priorities; and helps students choose effective and efficient plans for further study and review before they take the National Council for Licensure Examination for Registered Nurses.

The examination score is not computed in the course grade. Students receive a detailed profile of the results of their examination and are given recommendations for self-directed study.
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; nursing professionalism; and computer expertise. 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 Anticipation Plan for Nursing Education (R.N. to baccalaureate). At the time of admission to the College of Nursing, students declare one of five major areas available within the plan. Plans of study are developed and credit is awarded according to the option the student declares.

Students may transfer previous coursework 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. In addition, they may take specific course examinations. Once prerequisites are complete, students may complete the R.N.-B.S.N. major sequence in one calendar year or three semesters to a sequence that includes three clinical and two nonclinical nursing courses. R.N.s may study on campus and in 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 assist nursing 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 have their own organization, the Association of Nursing Students (ANS) and also are eligible for membership in the state and national associations of nursing students. ANS provides opportunities for professional growth and development in nursing. Its representatives are members of the University of Iowa Student Association (UISA), and there is an ANS 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 and development, 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, professional liability insurance, and transportation since they are enrolled in clinical nursing courses.

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 practices 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 information 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, four years of mathematics, two years of one foreign language, and one year each of biology, chemistry, and physics, plus other college preparatory courses selected with the help of the high school counselor.

College Background

Admission Requirements

To apply for admission to the undergraduate program in nursing, each student must be admissible to The University of Iowa and present:

- a minimum of 24 semester hours completed in an accredited college;
- successful completion of seven of the following prenursing courses in the first clinical nursing course, including successful completion of three of the following science courses: inorganic chemistry, organic chemistry, biology, anatomy, human physiology, and a minimum grade-point average of 2.00 on a 4.00 scale.

Prediagnosis Background

Students must satisfy the following requirements, in addition to the biological science courses required for admission to the college, before beginning clinical nursing course work.

- Recent 8 semester hours (may be satisfied by transfer) of 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 math or a score greater than or equal to 20 on the mathematics battery of the ACT, or completion of a college course in mathematics comparable to or more advanced than intermediate algebra (MATH 01).
- Physics—enough of high school physics or equivalent; if physics is completed at the college level, it may be included in the 24 semester hours required for admission.

The following course work:

- Inorganic chemistry
- Organic chemistry
- Animal biology
- MATH 12
- Human anatomy
- Human physiology
- Nutrition
- Psychology
- Sociology
- Anthropology
- Human development and behavior

STANDARDS

To be considered for admission to the College of Nursing, the applicant must have satisfactorily completed all prerequisites.

American College Tests

All entering freshmen 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 Testing (ACT) for the Scholastic Aptitude Test (SAT). For information on the ACT, write the American College Testing Program, Box 451, Iowa City, Iowa 52243.

Selection Factors

Preference of admission requirements may vary each year. In general, programs are selected on the basis of quality and number of factors that are considered in the admission process. In this program, the following are taken into consideration in the selection process:

- Academic achievement
- High School grades
- ACT or SAT scores
- Personal interview

Application Deadlines

Applications are considered as received. They must be submitted by May 1 for the fall semester and December 1 for the spring semester.

Graduate Programs

Master of Arts

The University of Iowa M.A. program in nursing is accredited by the National League for Nursing
Nursing 429

Advanced Nursing Core

The core consists of 17 semester hours of course work in conceptual and theoretical foundations: for nursing (3 semester hours), leadership in nursing (3 semester hours), methods of nursing research (6 semester hours), health policy and economics (3 semester hours), and professional issues seminar (2 semester hours).

Nursing Specialization

The specialization requires 8 semester hours of course work with prerequisites; it allows students to build a special area of knowledge and practice that extends beyond the advanced nursing core. Specialization may be in the broad areas of child health nursing, adult health nursing, gerontology, mental health, or community/family health nursing. Students may develop their areas of specialization through their choices of course work and fieldwork experiences. For example, students who select adult health nursing, as their area of specialization, may choose experiences with patients in a long-term care facility, a mental health center, or a cardiac care unit. Students with within career goals have the option of further modifying their plans of study under the direction of their academic advisors.

Role Development

Students may select administration, advanced clinical practice, or education as a role-preparation area. The role-preparation requires 6 semester hours of course work with prerequisites. Students who elect to prepare for careers in clinical practice, for example, enroll in 6 semester hours of advanced clinical practice. In addition to courses required for the nursing specialization component, fulfilling the role-preparation requirements of these courses, students may select other role-setting and/or prerequisites compatible with their own career goals.

Supporting Courses

Students must complete 6-8 semester hours; they may choose time supporting course work in an area related to their specialization or role-preparation interests.

Thesis/Master’s Project

All masters’ students at the University must take a final examination. Students in the Master’s Program are required, by completing either a thesis or a master’s project, students, with their advisor, select the option that best maximizes 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 experiments that meet the requirements of the Graduate College. Students must total at least 5 semester hours of credit for the thesis.

The master’s project is an in-depth synthesis and analysis of a choice topic in nursing. The 15 to 20-page paper (unavailable quality may not duplicate a previous course assignment).

Spring Semester

2.050 Professional Seminar: Issues In Nursing 2 s.h.

2.061 Nursing Administration: Process, Roles, and Strategies 3 s.h.

2.062 Advanced Clinical Practice I 3 s.h.

2.063 Curriculum Development in Nursing Education 3 s.h.

2.025 Nursing Education: Process, Roles, and Strategies 3 s.h.

2.026 Advanced Clinical Practice I 3 s.h.

2.027 Nursing Education: Process, Roles, and Strategies 3 s.h.

2.031 Nursing Administration: Process, Roles, and Strategies 3 s.h.

2.034 Critical Thinking in Nursing 3 s.h.

2.035 Community Health Nursing: A Contemporary Approach 3 s.h.

2.036 Technology in Nursing: A Contemporary Approach 3 s.h.

2.038 Foundations of Nursing: A Contemporary Approach 3 s.h.

2.039 Leadership in Nursing: Theory and Application 3 s.h.

2.040 Supporting course 3 s.h.

2.041 Total 12 s.h.

Fall Semester

2.011 Methods of Research in Nursing 3 s.h.

2.025 Nursing Administration: Process, Roles, and Strategies 3 s.h.

2.031 Nursing Administration: Process, Roles, and Strategies 3 s.h.

2.034 Critical Thinking in Nursing 3 s.h.

2.035 Community Health Nursing: A Contemporary Approach 3 s.h.

2.036 Technology in Nursing: A Contemporary Approach 3 s.h.

2.038 Foundations of Nursing: A Contemporary Approach 3 s.h.

2.039 Leadership in Nursing: Theory and Application 3 s.h.

2.040 Supporting course 3 s.h.

2.041 Total 12 s.h.

Spring Semester

2.011 Methods of Research in Nursing 3 s.h.

2.025 Nursing Administration: Process, Roles, and Strategies 3 s.h.

2.031 Nursing Administration: Process, Roles, and Strategies 3 s.h.

2.034 Critical Thinking in Nursing 3 s.h.

2.035 Community Health Nursing: A Contemporary Approach 3 s.h.

2.036 Technology in Nursing: A Contemporary Approach 3 s.h.

2.038 Foundations of Nursing: A Contemporary Approach 3 s.h.

2.039 Leadership in Nursing: Theory and Application 3 s.h.

2.040 Supporting course 3 s.h.

2.041 Total 12 s.h.

Fall Semester

2.011 Methods of Research in Nursing 3 s.h.

2.025 Nursing Administration: Process, Roles, and Strategies 3 s.h.

2.031 Nursing Administration: Process, Roles, and Strategies 3 s.h.

2.034 Critical Thinking in Nursing 3 s.h.

2.035 Community Health Nursing: A Contemporary Approach 3 s.h.

2.036 Technology in Nursing: A Contemporary Approach 3 s.h.

2.038 Foundations of Nursing: A Contemporary Approach 3 s.h.

2.039 Leadership in Nursing: Theory and Application 3 s.h.

2.040 Supporting course 3 s.h.

2.041 Total 12 s.h.
Nursing

9:06:19 Advanced Clinical Practice II 3 s.h.
One of these:
16:248 Master’s Project 4 s.h.
9:49:10 Thesis 5 s.h.
Total 15 s.h.

Jain Master's Program with Business Administration
A joint M.B.A./M.A. in nursing is available. The program is designed for students with previous clinical and administrative experience.
Applicants to this program need to be accepted for graduate study in both programs. The joint program requires a total of 54-58 semester hours. For more information, contact the Office of Student Services.

Admission

Students should 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 minimum score of 3.0 on the Test of English as a Foreign Language (TOEFL) when appropriate; and a 2.50 minimum grade-point average 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 the applicant: possess a bachelor's degree with a major in nursing from a program accredited by the National League for Nursing. Options are available for registered nurse applicants with a non-NLN-accredited B.S.N., a non-nursing B.A. or B.S., or a B.S.N. from a foreign country;
meet the legal requirements for the practice of nursing in Iowa;
have an overall grade-point average of 3.75 or higher, or a demonstrated ability to do graduate work as evidenced by grades; or have an undergraduate grade-point average of 2.50 or higher for conditional admission;
have current written recommendations from three persons familiar with the applicant's competitive in the practice of nursing and potential for leadership and scholarship; and have successfully completed a graduate-level (or equivalent) statistics course prior to admission.

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. Deadline for summer and fall admission is May 1. The spring semester admission deadline is December 1. Initial course enrollment may begin any term.

All regulations of the Graduate College 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 dean for the graduate program in nursing and by the student's advisor.

Doctor of Philosophy

The Ph.D. in nursing program prepares students to conduct research in nursing, extends the knowledge base relevant to nursing, and contributes 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 new focal areas from which students choose: nursing in aging and nursing administration. Graduates of the program prepare 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 use the following courses:
- 50:505 Research in the Social Evolution of American Nursing
- 50:340-341 Nursing Theory and Practice
- 50:310 Nutrition and Health Information Systems
- 50:320 Economics of Health Care and Nursing
- 50:230 Nursing's Role in Health Care Policy
- 50:319 Cognitive Research: Research Methods and Statistics
- 50:490-491 Research Practicum
- 50:400-401 Research Practicum

In addition, candidates must take the appropriate seminars and practicums for their focal area (total of 12 semester hours).

Aging Focus

50:410 Nursing Research of Biological Phenomena and Interventions for the Elderly
50:420 Gerontological Mental Health Research
50:420 Nursing Research in Geriatric Cultural Phenomena and Interventions for the Elderly
50:420-440 Research Utilization Residency in Care of the Elderly

Nursing Administration Focus

50:450 Research Seminar in Nursing Administration 1: Organizational Concepts
50:450-460 Research Seminar in Nursing Administration 1: Health Care Systems Concepts
50:460 Innovations in Nursing Management
50:460-480 Residency in Nursing Service Administration

Comprehensive Exam, Dissertation

All students must complete a written comprehensive examination. Candidates earn 12 semester hours for work on their dissertation by completing 50:497 Dissertation Research Seminar: Research, Application and Advanced Design, a dissertation prospectus, the dissertation, and an oral defense.

Admission Requirements

Students applying to the Ph.D. program must have an academic record of completion of an NLN-accredited basic nursing program; completion of a master's degree program; current B.N. licensure to practice nursing; GRE General Test, preferably within the past five years; and a non-native first language is not English, a minimum score of 550 on the Test of English as a Foreign Language (TOEFL); a minimum of one graduate-level, 3-semester-hour course in research and a substantial statistical course. P.I. students must complete a 3-week three-page statement describing educational objectives and identifying a focal area for doctoral study; three recommendations from professionals in the field of interest in a current curriculum vitae. One year of nursing experience is preferred.

Professional Improvement

Some registered nurses may wish to take course work at the University to fulfill the objectives of professional or personal improvement. Such individuals may request admission in the professional improvement (P.I.) category. This admission status allows students to take some graduate courses in the University without committing to any specific objective.

Admission to 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 the University requirement before the end of the first semester registration. Deadlines are July 15 for admission in the fall semester, December 1 for admission in the spring semester, and May 1 for admission in the summer semester.

Since acceptance as a professional improvement student has no direct bearing on acceptance as a master's or doctoral candidate, students are required to follow the application procedure described in the previous section if they wish to seek admission as master's or doctoral degree candidates. Only 3 semester hours of the required nursing core must be taken under professional improvement status may be used to fulfill the M.A. requirements. P.I. students may not enroll in doctoral courses.

Continuing Education

Through its Office of Continuing Nursing Education, the college offers nonacademic, short-term programs for registered nurses. Programs are scheduled on campus and at community sites throughout Iowa. Self-study programs and learner-designed nursing continuing education modules are also available. Continuing education units (CEUs) are awarded for each program on the basis of one exit per 10 clock hours of instruction. The Office of Continuing Nursing Education is approved by
Courses

Primarily for Undergraduates

96:080 Cooperative Clinical Internship 1.0 cr.
Seminar and practice in the medical office.

96:100 Basic Development and Behavior 3.0 h.
Developmental stages in the human being from conception through adolescence: physiological, anatomical, emotional, social. Prerequisites: 31:1 or 31:2.

96:31 Adult Development and Aging

Primarily, organic, preparatory development of the adult organism. Emphasis on the aging process. Prerequisites: seniors or graduate students only. Credit will not be given for both 31:1 and 31:2.

96:30 Professional Nursing: An Overview 3.0 cr.
Practice of nursing and its roles, functions, and contributions to the health process. Prerequisites: enrollment in a nursing school.

96:42 Preclinical 4.0 cr.
Courses include: health promotion, psychosocial dimensions of nursing, knowledge base, development of communication skills, and completion of a community health project. Prerequisites: 96:43 or permission of instructor.

96:121 Fundamentals of Nursing Practice 4.7 cr.

96:122 Fundamentals in Nursing Practice Clinical and Theoretical Nursing Skills 1.0 cr.
Scientific principles, application of basic clinical and theoretical nursing skills. Open only to 96:120 Nursing students. Corequisite: 96:121.

96:123 Nursing Practice in Acute Illness 2.0 cr.
Phenomenological and psychosocial concepts and interactions of the acute and ill person. Prerequisites: 96:44 or 96:45, and 96:46.

96:124 Nursing Theory: Chronic Illness 2.0 cr.
Phenomenological and psychosocial concepts and interactions of the ill person with chronic illness. Prerequisite: 96:123. Corequisite: 96:123.

96:125 Integrated Approach to Professional Nursing Practice

96:126 Integrated Approach to Professional Nursing Practice

96:127 Nursing Practice: Theory and Application

96:128 Nursing Practice: Theory and Application

96:129 Professional Nursing: An Overview 3.0 cr.
Practice of nursing and its roles, functions, and contributions to the health process. Prerequisites: enrollment in a nursing school.

96:130 Professional Nursing: An Overview 3.0 cr.
Practice of nursing and its roles, functions, and contributions to the health process. Prerequisites: enrollment in a nursing school.

96:131 Fundamentals of Nursing Practice 4.7 cr.

96:122 Fundamentals in Nursing Practice Clinical and Theoretical Nursing Skills 1.0 cr.
Scientific principles, application of basic clinical and theoretical nursing skills. Open only to 96:120 Nursing students. Corequisite: 96:121.

96:123 Nursing Practice in Acute Illness 2.0 cr.
Phenomenological and psychosocial concepts and interactions of the acute and ill person. Prerequisites: 96:44 or 96:45, and 96:46.

96:124 Nursing Theory: Chronic Illness 2.0 cr.
Phenomenological and psychosocial concepts and interactions of the ill person with chronic illness. Prerequisite: 96:123. Corequisite: 96:123.

96:125 Integrated Approach to Professional Nursing Practice

96:126 Integrated Approach to Professional Nursing Practice

96:127 Nursing Practice: Theory and Application

96:128 Nursing Practice: Theory and Application

96:129 Professional Nursing: An Overview 3.0 cr.
Practice of nursing and its roles, functions, and contributions to the health process. Prerequisites: enrollment in a nursing school.

96:130 Professional Nursing: An Overview 3.0 cr.
Practice of nursing and its roles, functions, and contributions to the health process. Prerequisites: enrollment in a nursing school.

96:131 Fundamentals of Nursing Practice 4.7 cr.

96:122 Fundamentals in Nursing Practice Clinical and Theoretical Nursing Skills 1.0 cr.
Scientific principles, application of basic clinical and theoretical nursing skills. Open only to 96:120 Nursing students. Corequisite: 96:121.

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96:125 Integrated Approach to Professional Nursing Practice

96:126 Integrated Approach to Professional Nursing Practice

96:127 Nursing Practice: Theory and Application

96:128 Nursing Practice: Theory and Application

96:129 Professional Nursing: An Overview 3.0 cr.
Practice of nursing and its roles, functions, and contributions to the health process. Prerequisites: enrollment in a nursing school.

96:130 Professional Nursing: An Overview 3.0 cr.
Practice of nursing and its roles, functions, and contributions to the health process. Prerequisites: enrollment in a nursing school.

96:131 Fundamentals of Nursing Practice 4.7 cr.
Pharmacy

Undergraduate Program

Undergraduate students in pharmacy enroll in the College of Science program. They receive professional education in a number of areas, including pharmaceutical technology, pharmacokinetics, medicinal chemistry and natural products, pharmaceutical microbiology, 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 Bachelor of Science degree requirements in pharmacy consist of four-year prepharmacy study, four years in College of Natural Science at the University of Iowa or an accredited community college, and four years of pharmacy study in the College of Pharmacy.

It is possible to transfer into the College of Pharmacy with advanced standing after two years of college-level work at an accredited institution. Students entering the college after two years of professional study can complete the professional program in three years if the preprofessional study includes, in addition to the basic preprofessional requirements, at least 6 semester hours of organic chemistry, 5-6 semester hours of biology or zoology, 3-4 semester hours of quantitative analysis, and at least 15 semester hours of general education electives. Only a limited number of students are admitted with advanced standing.

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 licensure examination given by the Iowa Board of Pharmacy Examiners.

Graduates from the baccalaureate program in pharmacy require satisfactory completion of the required courses, 24 semester hours of general education electives, and a pharmacy grade-point average and a total cumulative grade-point average of at least 2.0.

Rules and regulations concerning academic probation, year-to-year credit, maximum load, earned credit, drop policy, and correspondence courses are provided in the Undergraduate Pharmacy Student Handbook.

Honors

The honor program gives students an opportunity to major in a small group of students who have met the academic requirements at the University. In the first semester, the upper 20 percent of students at the University may enroll in the honors seminar. A weekly discussion on topics from the humanities, sciences, law, and social sciences.

Honors students may elect to prepare a master's thesis or carry out a research project of limited scope during the honors seminar. Preprofessional course credits are accepted as part of the honors seminar. Fulfillment of these requirements does not guarantee admission to the College of Pharmacy.

Students are admitted to the College of Pharmacy if they meet the minimum academic requirements for admission to the College of Pharmacy.

Placement of these requirements does not ensure admission to the college. Admission to the College of Pharmacy is based on the best qualified applicants. Questions concerning satisfaction of degree requirements should be directed to the assistant dean for undergraduate affairs.

Propreessional Course Work

Rhetoric: 6 semester hours, or 6 semester hours of rhetoric to fulfill requirement in rhetoric, and 2 semester hours in speech.

General chemistry: 8 semester hours.

Mathematics: 3-4 semester hours of a satisfactory differential and integral calculus sequence.

Physics: may be satisfied with one year of high school physics.

General electives: 6 semester hours.

Each student must complete 24 semester hours of general education courses to meet graduation requirements. Transferred courses should be from the behavioral, social, and humanities areas of knowledge. Some courses in the College of Business Administration also may satisfy General Education Requirements.

Transfer Students

Students who transfer into the college after two years in a community college or liberal arts college may be able to complete the pharmacy program in three years if they have satisfactorily completed courses in organic chemistry, biology or zoology, quantitative analysis, and have satisfied general education electives. Students who plan to remain in a community college for two years before transferring to Iowa should contact the assistant dean for undergraduate affairs.

According to University policy, students who have earned more than one-half the total semester hours required for the B.S. in pharmacy cannot receive further credit for courses taken after the College of Pharmacy has determined that a student who has satisfied the academic requirements for a degree in pharmacy will not have permission to continue in the College of Pharmacy.

A minimum grade of C is required for work applied for transfer toward the pharmacy degree.

Professional Curriculum

Students must be enrolled in the College of Pharmacy before they may take any course of Pharmacy courses.

FIRST YEAR

First Semester

Anatomy

3.0 h.

Physiology

2.0 h.

Chemistry

3.0 h.

Math

3.0 h.

General education courses

4.0 h.

Total

15.0 h.

Second Semester

Anatomy

2.0 h.

Physiology

2.0 h.

Chemistry

3.0 h.

Math

3.0 h.

General education courses

4.0 h.

Total

8.0 h.

Anatomy

2.0 h.

Physiology

2.0 h.

Chemistry

3.0 h.

Math

3.0 h.

General education courses

4.0 h.

Total

8.0 h.

Anatomy

2.0 h.

Physiology

2.0 h.

Chemistry

3.0 h.

Math

3.0 h.

General education courses

4.0 h.

Total

8.0 h.
SECOND YEAR
First Semester
46-02 Pharmacology I 4 s.h.
46-12 Biochemistry for Pharmacy 4 s.h.
46-12 Health Sciences Microbiology 4 s.h.
*61-1 Principles of Human Anatomy 3 s.h.
Genius-elective courses 0-3 s.h.
Total 15-18 s.h.
*May be taken in second semester of first year.

SECOND SEMESTER
46-24 Pharmacology II 4 s.h.
46-25 Pharmacological Sociobiology: Health Care Systems 4 s.h.
46-185 Medicinal and Natural Products Chemistry I 5 s.h.
72-150 Intermediate Physiology 4 s.h.
Total 17 s.h.

THIRD YEAR
First Semester
46-131 Medical and Natural Products Chemistry II 5 s.h.
69-103 Introduction to Human Pathology 4 s.h.
71-101 Pharmacology for Health Science, Pharmacy 5 s.h.
35-35 Pharmaceutical Sociobiology: Practice Management 3 s.h.
Total 17 s.h.

Second Semester
46-132 Medicinal and Natural Products Chemistry III 5 s.h.
71-103 Pharmacology and Toxicology 3 s.h.
46-38 Pharmaceutical Microbiology 3 s.h.
46-110 Therapeutics I 4 s.h.
General education electives 0-9 s.h.
Total 14-17 s.h.

FOURTH YEAR
First Semester
46-014 Internship 2 s.h.
46-24 Pharmacology IV 4 s.h.
46-01 Drug Information 3 s.h.
46-115 Research Techniques 3 s.h.
General education electives 0-4 s.h.
Total 13-17 s.h.

Second Semester
46-59 Hospital Pharmacy Internship 4 s.h.
46-60 Community Pharmacy Internship 4 s.h.
*Clinical pharmacy clerkship 4 s.h.
*Clinical pharmacy clerkship 4 s.h.
Total 16 s.h.
*Two clinical clerkships are selected from a large number of clerkship options.

PROFESSIONAL ELECTIVES
46-46 Community Pharmacy Retailing 3 s.h.
46-56 Non-Prescription Drug Therapy of 3 s.h.
46-101 Pharmacy Projects 12 s.h.
46-102 Pharmacy Store Seminar 1 s.h.
46-103 Physical Pharmacy 3 s.h.
46-104 Pharmaceutical Technology 3 s.h.
46-106 Industrial Pharmacy Survey 1 s.h.
46-105 Computer Applications in Pharmacy 2 s.h.
46-114 Advanced Clinical Pharmacy 4 s.h.
46-135 Perspectives in MCMC Research 3 s.h.
46-137 Enzymatic Basis of Drug Metabolism 2 s.h.
46-147 Introduction to Research Methods 3 s.h.
46-154 Communications Skills for Pharmacists 3 s.h.

PROFESSIONAL CLINICALS
46-80 Medicine Clerkship 4 s.h.
46-81 Family Practice Clerkship 4 s.h.
46-82 Pediatrics Clerkship 4 s.h.
46-83 Pharmacoeconomics Clerkship 4 s.h.
46-84 Psychiatry Clerkship 4 s.h.
46-85 Neurology Clerkship 4 s.h.
46-86 Surgery Clerkship 4 s.h.
46-87 Clinical Nuclear Pharmacy Clerkship 4 s.h.
46-88 Dental College Clerkship 3 s.h.
46-89 Elective Clerkship 4 s.h.

Graduation
Graduation from the College of Pharmacy with the B.S. in pharmacy requires completion of all required courses plus 24 semester hours of general education electives. In order to graduate, students must earn a 2.0 cumulative grade-point average of at least 2.0. The grade-point average is computed in the grades earned in all of the specifically required courses that students have completed while enrolled in the College of Pharmacy.

Graduate Programs
The college has graduate programs in each of its four academic divisions: Master of Science and Doctor of Pharmacy programs are available in pharmaceutical chemistry, medicinal and natural products chemistry, and pharmaceutical sciences. A Master of Science is available in clinical hospital 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 deadline, 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.

Doctor of Pharmacy (Pharm.D.)

The Pharm.D. program is a two-year professional academic postgraduate degree program that combines didactic course work and clinical clerkship. The program is accredited by the American Council on Pharmaceutical Education. The major goal of the program is to provide the health care system with pharmacists who are specifically prepared to undertake an expanded role in measurement, evaluation, and optimizing the drug therapy in hospitalized and ambulatory patients. This program is available to a limited number of highly qualified pharmacy graduates. Prospective students may obtain specific information on the Pharm.D. program by writing to College of Pharmacy.

Facilities

The Pharmacy Building is located in the heart center complex on the University’s main campus, in close proximity to the Colleges of Medicine, Nursing, and Dentistry. The University of Iowa Hospitals and Clinics, the Brown Science Building, and the Health 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 an auditorium, there are well-equipped separate laboratories for instruction at the undergraduate and graduate levels.

The building also houses the Learning Resource Center (LRC), with current texts and periodicals and provides library services. The LRC has several computer terminals available to students and provides on-line computer search for pharmacy students and faculty.

The Pharmacist Service Division of the college serves as a teaching unit as well as a service to the local community. The division includes: pharmacist training methods of large-scale pharmaceutical product development and production. The division’s role in the community is to encourage and provide opportunities for students in the health sciences to work and gain administrative experience in 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 serves nearly 400 subscribers throughout the world but plays an important educational role for undergraduates and graduate pharmacy students as well.

In the clinical pharmacy program, students work with other health professionals to have the opportunity to monitor drug therapy in hospitalized and nonhospitalized patients under the supervision of clinical instructors in pharmacy, medicine, and dentistry. The various clerkships/experiences 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 Dubuque; Iowa City Health Hospitals; Mercy and St. Luke’s hospitals in
44157 Clinical Nuclear Pharmacy Certification
Advanced clinical instruction in the use of radionuclides, pharmacokinetic and biodistribution, imaging and computerized monitoring.

44266 Dental College Certification
Advanced clinical experience involving general and local anesthesia, orthodontic restorative and periodontal, oral surgical procedures.

44387 Phlebotomist Certification
Advanced clinical experience in a noninvasive setting.
Continuing Education

Dean: Edward J. Vaughan
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 in 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 nearer to direct contact with the citizens."

The division’s organization and services include the following:

**Audiovisual Center**

**Director:** William Ogley

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.

- **Graphic Unit:** graphics, charts, maps, titles, layouts, posters, drawings, models, exhibits, and overhead transparencies
- **Photographic Service:** black-and-white and color photographs, negatives, two-inch slides, films, prints, microphotographs, many types of specialized photography, and still photographs: laboratory services
- **Audio Unit:** original audio tape recording (studio and location), tape duplication (open reel and cassette), sound editing, equalizing, mixing, and transfer
- **Multimedia Unit:** design and production of slide and multiple-screen slide programs, use to twelve projectors, manual and programmed control, operation of large-screen projection, and related equipment

The Audiovisual Center also markets and distributes audiovisual products originated at the University. Necoral Cinevision, Inc, is a co-sponsored unit. The center charges most University departments for materials only. Fees for services handled are charged to University departments. All services by the center are charged to University departments.

**Media Services**

**Director:** James Burt

The University Iowa Library provides no charge a major collection of 16-mm instructional films and videotapes for on-campus production and curricula-related activities. There is a rental fee for off-campus use. Smaller collections of slides, filmstrips, and slides plus facilities for student or faculty use also are available. Catalog of these collections are available on request. The library also maintains a reference collection of materials from other sources.

Equipment Services provides the following, for instructional use or no charge: projectors for films, slides, filmstrips, and video; opaque and overhead projectors; portable projection screens; audovideocassette recorders/players; portable wide-screen screens; and closed-circuit television equipment. Rent is available for audiovisual equipment.

**Center for Conferences and Institutes**

**Acting Director:** James C. Laspee

The Center for Conferences and Institutes is the University's principal agency for developing, coordinating, and conducting noncredit continuing education programs for nonscholarly adults and for administering the Continuing Education Unit (CEU) program. The center's primary goal is to enhance the University as a center of learning and to provide educational opportunities for people who are not full-time students but who wish new knowledge related to their work or special interests.

Each year more than 30,000 adults participate in the center’s varied programs; workshops, courses and seminars, continuing education credits, and courses in the University of Iowa Community Center of Iowa City. The University of Iowa Community College operates the center.

The center also provides interdisciplinary programs for faculty and department.

**Center for Credit Programs**

**Director:** Wes V. Fitzus

The Center for Credit Programs is responsible for offering University of Iowa credit courses to part-time students in Iowa City and throughout the state. In cooperation with the University’s colleges and radenic departments, the center offers courses through several formats and delivery systems.

**Correspondence Courses**

More than 180 Guided Correspondence Study courses are available in the College of Liberal Arts, Business Administration, Education, Engineering, Medicine, and Nursing. These courses represent 42 University departments.

Students may enroll at any time, and they have nine months in which to complete a course. A catalog of course listings, procedures, and enrollment forms is available from the Guided Correspondence Study office.

**Off-Campus Classes**

The Center for Credit Programs offers University courses of credit at University locations and at the request of public school offices. Classes are scheduled where they best serve off-campus students, at the request of public school officials, and, where professional, industrial, or other qualified groups express a need for instruction. The center also offers courses through audioconferencing and interactive television. In addition, it provides a variety of telecourse programs in cooperation with Iowa Public Televisions.

Enrollment in each course must be sufficient to meet the cost of offering the course. Information is available from the Center for Credit Programs.

**Saturday and Evening Classes**

The Saturday and Evening Class Program offers University courses at times convenient for nontraditional students. All classes meet at the University of Iowa campus. Enrollment for each course must be sufficient to meet the cost of offering the course. The Saturday and Evening Class Program bulletin is available from the Center for Credit Programs.

**Bachelor of Liberal Studies Degree**

The Bachelor of Liberal Studies (B.L.S.) degree is offered by each of the three State Board of Regents universities (The University of Iowa, Iowa State University, and the University of Northern Iowa). It serves adults 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.

Credit applicable toward the degree may be earned through Saturday and evening classes, correspondence and independent study courses, off-campus courses at sites throughout Iowa, televised courses, and distance on-campus courses.

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. For a detailed program description, see “Liberal Studies” in the College of Liberal Arts section of the Catalog.
Labor Center

Director: Robert T. Tiller

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 L. 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 programs 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 goals to helping managers develop, management systems, and quality circles to serving on statewide government committees that deal with major concerns of state and local governments.

Video Center

Director: David C. Langel

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. Toward 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 systems design and maintains guidelines for equipment standardization.

Using the Iowa Foil Printer in the School of Art and Art History
State Board of Regents

The State Board of Regents governs The University of Iowa, Iowa State University of Science and Technology, the University of Northern Iowa, the Iowa River and Sight Saving School, and the Iowa School for the Deaf. The board consists of nine members, as follows:

President: Martin A. Fuentes, West Des Moines
Martin S. Beneshek, Sioux City
John R. Fitzgerald, West Des Moines
Betsy Lee Forsgren, Waterloo
John M. Craig, Bettendorf
Elizabeth D. Hatch, Cedar Rapids
James E. Tillis, Atlantic
Vivian-Westwood, Hudson
Mary C. Williams, Des Moines
Executive secretary: B. Wayne Biechler

Central Administration

President: Honore B. Rawlings III
Vice president for academic affairs and dean of faculties: Peter E. Nathan
Assistant vice president for research: Derek Willard
Interim vice president for finance and university services: Douglas True
Vice president for university relations: Ann M. Rhodes

Academic Affairs

Vice president and dean of faculties: Peter E. Nathan
Dean of students: Phillip E. Jones
Dean of Business Administration: Dean: George Day
Dean of Dentistry: Dean: James H. Minton
Dean of Education: Dean: Steven R. Yussen
Dean of Engineering: Dean:
Graduate College: Dean: University of Iowa
College of Law: Dean: N. William Hinke
College of Liberal Arts
College of Medicine: Dean: James A. Gilchrist
College of Nursing: Dean: Gwendolyn Peterson
College of Pharmacy: Dean: Gilbert G. Skibber
Division of Continuing Education: Dean: Elizabeth J. Vaughn
Iowa Lakeside Laboratory
Acting director: Robert W. Clenden
Libraries
University information: Sheila Cook
Museum of Art
Director: Stephen S. McAllister
Office of International Education and Services
Director: Stephen M. Anstrom
Summer Session
Director: Linda Davis
Research
Acting vice president: Derek Willard
Center for Advanced Studies
Director: Jay Kernen
Center for Health Services Research
Acting director: Robert E. Luecke
Division of Sponsored Programs
Director: Brian Harwell
Health Protection Office
Acting director: James C. Wilson
Occupational Health Service
Director: Lawrence F. Jones
Office of Information Technology
Director: W. Lee Sipe
Suee Archaeologist
William Green
Technology Innovation Center
Director: W. Bruce Wheaton
University of Iowa Press
Director: Paul Demmer
University Veternarian
Paul S. Cooper
Wong Computing Center
Director: Linda Boyes

Student Academic Services

Admissions
Director: Michael Bierman
University Registrar
Jared W. Duveren
Undergraduate Academic Advising Center
Director: Julie Kucharski
University Examination and Evaluation Services
Acting director: Joyce B. Moore

Student Administrative Services

Associate vice president: Phillip E. Jones
Campus Programs and Student Activities
Director: Iowa Memorial Union
Director: Juan Kendall
Office of Services for Persons with Disabilities
Coordinator: Donna Chennault
Residence Services
Director: George T. Emblett
Special Support Services
Director: Rosalyn B. Green
Student Financial Aid
Director: Mark Warner
University Counseling Service
Director: Gerald L. Stone
Women's Resource and Action Center
Coordinator: Maria Marisita

Finance and University Services

Interim vice president: Douglas True
Business manager: Michael P. Finnegan
Controller and secretary: Douglas M. Young
Treasurer: Douglas True
Physical Plant
Acting director: George Klein
Planning and Administrative Services
Director: Richard G. Gobin
Public Safety
Director: William F. Furlonger
Recreational Services
Director: Henry A. Crown
University Personnel Services
Director: Martin L. Lynch

University Relations

Vice president: Ann M. Rhodes
Alumni Association
Director: Richard Beamer
International Athletics for Men
Director: Robert Swant
International Athletics for Women
Director: Christine Grant
Radio Station WHO-BC
Acting director: John Monick
State Relations
Director: Ted Yackel
University Relations
Director: Joseph Fritz

University Health Services

Assistant to the president for statewide health services: John W. Collins
Psychiatric Hospital
Director: George Whaley
Regional Child Health Specialty Clinics
Director: Richard P. Molina
The following is extracted from the Board of Regents' action of the Iowa Administrative Code as of April 15, 1993.

**Admission Rules Common to the Three State Universities**

681 - 1.2(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 $10 application fee, and have their secondary schools 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) if required, 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 approval of their parents as recommended by the 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, but have a review of their academic and test records, and the discretion of the admissions offices.

b. be accepted conditionally;

c. be required to enroll for a summer period during a preceding summer semester, or

d. be denied admission.

1.2(2) Graduates of accredited high schools in other states may be admitted under the same conditions as graduates of Iowa high schools. The options for conditional admission or suspension of credentials may not necessarily be offered to others.

1.1B(3) Applicants who are graduates of non-Iowa high schools will be considered for admission in a manner similar to applicants from approved high schools, but additional procedures may be required to determine standard rates of equivalency.

1.1B(4) Applicants who are not high school graduates, but whose classes have graduated, may be considered for admission. That will be required to submit all academic data to the extent that it exists and accurate 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 part-time students to a regent university before completing high school. Early admission to a regent university is provided to serve persons whose academic achievements and personal and intellectual maturity clearly suggest readiness for college level study. Each university will specify requirements and conditions for early admission.

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 $10 application fee, and request that each college from which they have transferred send an official transcript of record to the admissions offices. 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(3) Transfer applicants with a maximum of 24 semester hours of graded credit from regionally accredited colleges or universities, who have achieved for all college previously attempted the grade point required by such university for specific programs, will be admitted. Higher academic standards may be required of students who are not residents of Iowa.

Applicants who have not maintained the grade point required by each university for academic programs or who are under academic suspension from the last college attended 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 summer period during a preceding summer semester, or

d. be denied admission.

1.2(4) Admission of students with fewer than 24 semester hours of college credit will be based on high school academic and standardized test records at the discretion of the college.

1.2(5) Transfer applicants who, under disciplinary suspension will not be considered for admission until information concerning the reasons for the suspension has been received from the college assigning the suspension. Applicants granted conditional admission under these circumstances will be admitted on probation.

1.2(6) Transfer applicants from colleges and universities accredited by another regional association will be considered for admission on an individual basis taking into account all available academic information.

681 - 1.2(262) Transfer credit policies

The regents' universities endure the Board of Regents Graduate Council 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 (COAP). The current issue of Transfer Credit Practices of Select Educational Institutions, published by the American Association of Collegiate Registrars and Admissions Officers (AACRAO), and publications of the Council on Postsecondary Accreditation (COAP) 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 credit is not directly involved, may not be accepted, or may not be accepted to a limited extent. Transfer credit from a two-year college will not reduce the minimum number of credit hours required for a baccalaureate degree if that credit is earned after the number of credit hours accumulated by the student at institutions attended exceeds one-half of the number of credit hours required for that degree.

1.3(2) Students from colleges and universities which have candidate status

Credit earned at colleges and universities which have been 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 levels for students attending an approved out-of-state college which has received approval by a regional accrediting association for change to a four-year college may be accepted by a regent university.

**Iowa Administrative Code: Board of Regents**
1.23 Students from colleges and universities not recognized:

When students are admitted from colleges and universities not regularly accredited, they may validly possess the degrees of such institutions 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 student committee on educational relations, upon request from the institution, evaluates the nature and worthiness of the academic program, faculty, enrollment records, library, and equal qualities.

In determining the acceptability of transfer credit from private colleges in 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. Institutions not listed in the publication, guidance is requested from the designated reporting institution of the appropriate state.

1.24 Students from foreign colleges and universities

Transfer credit from foreign educational institutions may be granted when a determination of the type of institution received 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 specifically for a particular course, or it may be assigned to general areas of study. Extension use is made of professional journals and references which establish the comparability of the program of the foreign institution to the program of the university.

Residence

461-1.4.23(6) 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 some other designee designated by the registrar. The decision shall be based upon information furnished by the person 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 visiting, or holding an Iowa driver's license, and not meet the residency requirements established by the board of regents for admission, tuition, and fee purposes.

c. The registrar, or designee of the registrar, is authorized to request written documents, affidavits, warrants, 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 resident may be required to leave or go elsewhere for the following:

1. A statement from the student describing employment and expected sources of support.
2. A statement from the student's employer verifying employment and the fact that the student is working full-time for the past year and will not be so located in future years.
3. Supporting statements from persons who might be the student's family situation.
4. A statement from the student that the student's room and board are paid by the person.
5. Change of classification from nonresident to resident will not be made retroactive beyond the term in which application for resident classification is made.

6. A student who gives incorrect or misleading information to evade payment of nonresident fees shall be subject to disciplinary action and must also pay the nonresident fees for each term previously attended.

1.4.(2) Guidelines

The following guidelines are used in determining the resident classification of a student for admissions, 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. When deciding why a person is in the state of Iowa, the person's domicile will be considered. A person who comes to Iowa for another purpose and subsequently relocates in 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.

1. 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 reasonably ascertainable. 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.

2. 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. If, however, circumstances may require extended absence of the person from the state. It is required that a person with claims Iowa domicile while living in another state on a country will provide proof of the continued 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 income tax returns during absence from the state.

A. 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, is not enrolled for more than 4 credits in a quarter term for any classification, and provides sufficient evidence of the establishment of an Iowa domicile.

b. A student who has been a continuous student and whose parent moves to Iowa may become a resident at the beginning of the next term provided the student is dependent upon the parent for majority of financial assistance.

c. A person who moved to 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 required to reside in Iowa. However, if the arrival of the person under orders is subsequent to the beginning of the term in which the student first enrolled, nonresident fees will be assessed from the beginning of the next term in which the student is enrolled. Legislation, effective July 1, 1977, requires that all persons who claim residence in Iowa (home of record) will be required to the Iowa resident tax return.

d. A person who has been certified as a refugee or granted asylum by the appropriate agency of the United States who resides in Iowa for a university governed by the Iowa state board of regents shall not be required to establish an Iowa domicile for tuition purposes.

1. Come directly to the state of Iowa from a refugee facility or port of debarkation; or
2. Be resident of Iowa for a period of 90 days within a reasonable time and has not established domicile in another state.

Any refugee or individual granted asylum not meeting these standards will be presumed to be a nonresident for admission, tuition, and fee purposes and subject to the usual method of proof of establishment of Iowa residency.

e. An alien who has immigrated status establishes Iowa residency in the same manner as a United States citizen.

1.4.(2) Facts

a. The following circumstances, although not necessarily conclusive, have presumptive value in support of a claim for resident classification:

1. Residence in Iowa for 12 consecutive months, and
2. Being employed in Iowa, other than those of a full-time student, immediately prior to the beginning of the term for which resident classification is sought.
Supplemental Specific Rules for The University of Iowa

681.2.2(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 any 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 any institution or any affiliated organization for which an institution acts as fiscal agent have been paid.

681.2.2(262) College of Business Administration

2.31 Application for admission
Applications for admission to the college of business administration shall 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.

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.

Applicants 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 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.

Applicants for admission to the college of dentistry are encouraged to complete a program leading to a baccalaureate degree before entering dentistry. Applicants should consider a combined program in 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 all official transcripts 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 six less than 90 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 shall attain a cumulative grade-point average of 2.50. Since the quality of college work in professional school is basic to success in dentistry, special consideration to each college work is given by the admissions committee. The grade-point average is based upon the University of Iowa’s grading 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 the college of dentistry may apply for admission to the college of dentistry.

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 test 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 application 60 days prior to the opening of the college. Applicants are urged to begin the application process 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 acceptance. The application is not refundable but is transferable to another academic year. 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 satisfactory dental examination reports 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.

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 standing in graduating class, and successfully completed all prerequisite courses. The university will use the average of the three board of regents shall establish this accurately review specific minimum requirements for admission to the college of engineering. Among the items to be so determined are test scores, 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 alter a review of the applicant's record. (a) Admit conditionally. (b) Admit on probation. (c) Require enrollment for a period during a preceding summer session, or (d) Decline admission.

2.5(2) Admission of undergraduate students by transfer
The applicant must submit a formal application and the 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 in all college work undertaken.

From applicants who do not meet recommended requirements, the director of admissions will review individual records and may offer provisional admission.

681 - 5.4(262) Graduate College
Graduates of any college or university accredited by regional accrediting associations may apply for admission to the graduate college. Admission to the graduate college is not the equivalent of acceptance as a candidate for an advanced degree. Each applicant 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. A student applying for admission to the graduate college is not the equivalent of acceptance as a candidate for a degree in the individual case.

A student who is within four year term hours of completing an approved 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.

Submission of the specific requirements for admission listed below does not ensure admission to the college of law. The applicant may be asked to submit additional data, and the admission committee will not consider applications from students who fail to take the test peek to the first year in, the June 1 preceding the fall semester in which they wish to enter.

681 - 5.8(262) College of Medicine
2.8(1) Application for admission
Address all inquiries regarding admission to the Director of Admissions, University of Iowa.

Applications are urged to apply as early as possible, since this will give the admissions committee more time to review each application. Closing dates for receiving applications will be announced well in advance of the opening date of any session.

Submission of the specific requirements for admission listed below does not ensure admission to the college of medicine. From the applicant meeting the specific requirements the admissions committee of the college of medicine will determine whether those applicants who in their judgment appear to be best qualified for the study and practice of medicine. The college of medicine will be reserved to the college of medicine. Applications who have completed the bachelor's degree and required courses five or more years prior to seeking admission to the college of medicine will be considered by the admissions committee only under exceptional conditions.

The college curriculum must include at least thirty hours of credit in the sciences, including specific required science courses as prescribed by the college of medicine.

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. 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 admission in medical, special attention will be given by the admissions committee to grades in science. The grade-point average is based upon the University of Iowa's semester system in which a grade of A is equivalent to four points. Other marking systems will be evaluated by the office of admissions. The
681—2.9.2(62) 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 bachelor's degree program in nursing must present a minimum of 33 new units 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 Testing Program.
3. Submitted satisfactorily on all courses undertaken.

Applications from students who have minor deficiencies in meeting grade-point requirements specified above will be reviewed by the admission committee of the college, and, upon favorable recommendation of the committee, such students may be granted conditional or provisional admission.

Fullfilment 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—2.10.2(62) College of Pharmacy

2.10(1) General basis for admission

Eligibility for 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 the 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 54 semester hours of college level work exclusive of credit in military and aeronautics and physical education. The 32-semester hour 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 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.

The minimum for 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 deadlines

To be considered for admission to the college of pharmacy, students must have earned a 2.00 or C average on all college work undertaken. The minimum grade-point average of 2.00 is based upon the grade of A is equivalent to a

4.0; B is equivalent to a 3.0; C is equivalent to a 2.0; D is equivalent to a 1.0; F is equivalent to a 0.0; and P is equivalent to a Pass.

Applications for admission to the required official transcripts should be filed five months before March 1 for the class to enter pharmacy in September.

2.10(4) Required tests

Applicants for the doctorate are required to take the American College Testing Program tests.

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—2.11.2(62) College of Liberal Arts

Applicants for admission to liberal arts must meet the rules that are common to the three state institutions in Iowa as listed in 1.12(62), Ia. Code 1977, 1.13(62), and 1.14(62).

681—2.12(62) 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 master's-level courses are listed in the university catalog.
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