The University of Iowa
Iowa City, Iowa 52242

General Catalog

1990-1992

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Copies of the General Catalog are available for examination in Iowa High Schools, offices of the county superintendent of schools, public libraries, and junior and community colleges; at the 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 dates, and the availability of courses can be found in the Schedule of Courses, which is available before each term begins. The publications This Is Iowa and The Graduates Experience also include information on admission, fees, scholarships, student financial aid, housing, and other 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 equal opportunity and equal access to University facilities without reference to affectional or sexual orientation. For additional information on nondiscrimination policies, contact the Coordinator of Title II and Section 504 in the Office of Affirmative Action, telephone 319-335-5173; 202 Iowa Memorial Union, The University of Iowa, Iowa City, Iowa 52242.
University Calendar

Fall Semester
- Registration begins: August 20, 1990
- Classes begin: August 22, 1990
- University holiday: September 5, 1990
- Homecoming: October 19, 1990
- Thanksgiving recess begins: November 26, 1990
- University holidays: November 22-23, 1990, November 26, 1990
- Classes resume: December 7, 1990
- Finals: December 10-14, 1990
- Commencement ceremonies: December 16-15, 1990
- University holidays: December 24-25, 1990

Spring Semester
- Registration begins: January 1, 1991
- Classes begin: January 15, 1991
- Foundation day: February 25, 1991
- Spring vacation begins: March 15, 1991
- Saturday classes only meet: March 16, 1991
- Classes resume: March 29, 1991
- Finals: May 3, 1991
- Examination week: May 6-10, 1991
- Commencement ceremonies: May 10-15, 1991
- University holidays: May 27, 1991

Summer Session
- Registration: June 10, 1991
- Classes begin: June 16, 1991
- University holiday: July 4, 1991
- Classes end: August 2, 1991
- Commencement ceremonies: August 5-23, 1991
- Independent study unit for law, graduate students: August 2-3, 1991

Campus Visits
The best introduction to The University of Iowa is a visit to the campus. Come first to the John G. Bowman House Admissions Visitors Center, located at 230 N. Clinton. Office hours: Weekdays 8:30 a.m. to 4:30 p.m., Saturdays 8-11 a.m. 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 1-800-553-4600, 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. Responsible for many historic firsts, it has won international recognition for its wealth of achievement in the arts, sciences, and humanities.

Founded in 1847 as Iowa's first public institution of higher education, the University brings together undergraduates, graduate, and professional students with distinguished teachers and scholars in a close-knit, intellectual community. The University was the first U.S. public university to admit men and women on an equal basis and the first institution of higher education in the nation to accept creative work in theater, writing, music, and art as theses for advanced degrees. It established the first law school west of the Mississippi, broadcast the world's first educational television programs, and developed and continues to hold prominence in educational testing. It also operates the nation's largest university-owned teaching hospital.

The home of pioneering space research, Iowa has designed and built research instruments carried abroad on many major U.S. space missions, including the Galileo spacecraft currently on a 10-year journey to Jupiter. Its research in hydraulic engineering is world renowned, as are its innovations in biomedical engineering, agricultural medicine, and pharmacology education.

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. Both are enhanced by Iowa's many centers and institutes and the University Libraries, one of the largest research libraries systems in the country.

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 cornerstone for most students, 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 development, research, and oversight of graduate programs.

The University of Iowa has a diverse and distinguished faculty, whose abilities bring outstanding backgrounds in research and education to their teaching assignments. Many have been recognized for their outstanding accomplishments with awards including Guggenheim Fellowships, senior fellowships from the National Endowment for the Humanities, and Fulbright scholarships for teaching and study abroad.

The University's Center for the Arts provides the stimulus and setting for professional-caliber theater, dance, and musical performances by University and community groups, as well as for visiting artists from all over the world. 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.

As the nation's largest university-owned teaching hospital, the University of Iowa Hospitals and Clinics serves more than 450,000 patients from Iowa and other states every year. Specialized care is provided by more than 1,450 physicians and dentists, 1,500 registered nurses, and 4,300 professionals and support staff. Teams of faculty, clinical support specialists, and students study and practice as they 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 enduring loyalty as leaders in basketball, wrestling, field hockey, swimming, and gymnastics. A member of the Big Ten athletic conference, Iowa offers ten intercollegiate sports for women and ten for men.

The University's 900-acre campus includes more than 100 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 1840s, Old Capitol served as the last capital building for Iowa territorial government from 1842 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 is Iowa Hall, a restored Art Deco gift shop gallery in the Museum of Natural History in Mecosta Hall that presents life-like exhibits of animals from Iowa's four billion years of natural history. The museum itself houses more than one million specimens of plant and animal life.

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

Iowa City

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

A community of some 11,000 people, Iowa City lies within 350 miles of Chicago, Minneapolis, and St. Louis. The city is accessible by surface serving Cedar Rapids-Iowa City airport, by major bus lines, and by car on major highways.
ACADEMIC PROGRAMS

The University of Iowa is a part of the state'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 six schools and more than 50 departments and programs. It is closely linked with the professional colleges of Business 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 1,500 full-time members, many of whom have established national and international reputations. Their effectiveness as teachers is enhanced by their involvement in scholarly and scientific research. Some faculty members from the University's professional colleges also teach undergraduate classes in a number of interdisciplinary courses, in the College of Liberal Arts.

The University's undergraduate student enrollment is about evenly divided between men and women. Approximately three out of four undergraduates are Iowa residents. The rest are students from the other 48 states and more than 100 foreign countries. About 73 percent of the University's entering freshmen had a B average or better in high school. Approximately 91 percent ranked in the upper half of their high school classes and about 23 percent ranked in the upper tenth.

The University of Iowa offers a comprehensive program of student financial aid. Half of the University's students have some form of employment, one-third have education loans, one of ten undergraduates and one of five freshmen have scholarships. All U.S. scholarships are awarded on the basis of demonstrated financial need and academic excellence, with a small number of scholarships awarded on solely academic achievement.

Reflecting a growing trend toward lifelong learning, the University, in recent years has expanded educational programs substantially, both on and off campus, for individuals who cannot enroll as regular full-time students. These learning opportunities include distance courses, continuing education programs for professionals, summer and evening classes offered on campus, and credit courses taught off campus. In 1971 the University, in cooperation with Iowa's other two state universities, initiated a new Bachelor of Liberal Studies (B.L.S.) degree program designed for adults who want to earn a college degree but are unable to enrol in traditional on-campus study.

Degrees Offered

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

Baccalaureate Arts, Bachelors of Science, Bachelor of Music, Bachelors of Fine Arts, Doctor of General 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, Doctor of Law, Master of Computer, 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, Educational 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 since the association's organization in 1913. The University is a member of the Association of American Universities and is associated with NorthEastern, Indiana, Purdue, Ohio State, and Michigan State universities and the Universities of Illinois, Minnesota, Wisconsin, and Michigan in the Western (Big Ten) Conference. Among the Big Ten universities, it is also associated with The University of California, the University of California at Los Angeles and 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 Collegiate Schools of Business Dentistry—American Dental Association, Council on Dental Education Education—National Council for Accreditation of Teacher Education Law—American Bar Association, Association of American Law Schools Medicine—Liaison Committee on Medical Education, representing the American Medical Association (AMA) and the Association of American Medical Colleges (AMCC)

Nursing—National League for Nursing, Iowa Board of Nursing Pharmacy—American Council on Pharmaceutical Education

Schools


Departments and Programs

The undergraduate engineering programs of Biomedical, Chemical, Civil, Electrical, Engineering, and Mechanical Engineering—Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET)

Chemistry—American Chemical Society Dental Hygiene—Commission on Dental Accreditation of the American Dental Association Dietetics—American Dietetic Association Hospital and Health Administration—Accrediting Commission for Education in Health Services Administration Leisure Studies—Council on Accreditation of the National Recreation and Park 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—Commission on Allied Health Education and Accreditation of the American Medical Association; both of the American Medical Association

Physical Therapy—American Physical Therapy Association Physican Assistant Programs—Commission on Allied Health Education and Accreditation of the American Medical Association Psychology—American Psychological Association Speech Pathology and Audiology—Educational-Developmental Board of the American Speech and Hearing Association

Academic Sessions

The University's academic year consists of two semesters of approximately 16 weeks each. The University also conducts an eight-week summer session and, beginning in 1980, a one-week spring session of four to five days' duration to accommodate students in the Graduate College and the College of Law.
Academic Recognition

The university recognizes high scholastic achievement for academic degrees as "with distinction," "with high distinction," and "with highest distinction," based on the following criteria:

All Undergraduate Degrees (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 or 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 grade-point averages of 3.50 or above during a given semester on 12 or more semester hours of graded work and who have no hours of I or F grades are recognized by inclusion on the Dean's List for that semester.

President's List

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

Undergraduate Scholar Assistantships

For students who rank in the top one percent at the University. Undergraduate Scholar Assistantships provide

- Undergraduates, including freshmen, a chance to do scholarly work with faculty members from all areas of the University as projects that range from art to Spanish, from music to medicine.

Depending on their interests and fields of study, undergraduate assistants might help in classrooms, do research in libraries, work in the field, perform laboratory experiments, gather and analyze data, program computers, or edit manuscripts.

The biggest reward from this ten- to twelve-week appointment is the working relationship students have with faculty members and the involvement they have in important teaching and research activities. As long as they maintain superior performance, assistants may be invited to continue their work through their college careers, allowing them to increase the breadth and depth of their scholarly work and to continue the mentor relationship with their faculty mentor.

Honorary and Professional Societies

Phi Beta Kappa, Sigma Xi, Mortar Board, and Omicron Delta Kappa are among the nation's honorary and professional societies that have active chapters on The University of Iowa campus.

University Marking System

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<th>Grade (Definition)</th>
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<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- (average)</td>
<td>2.67</td>
</tr>
<tr>
<td>C+ (average)</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+ (below average)</td>
<td>1.33</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>D- (failing)</td>
<td>0.67</td>
</tr>
</tbody>
</table>

*H-exempt
*E—incomplete
*W—no work
*P—passing
*R—audit
*S—satisfactory
*U—unsatisfactory (Graduate College only)
*W—withdrew

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, preceded by the number of the college, department, or program that administers the course. For example, "11" is the code for the course numbered 1 in the Department of Botany (2). The catalog "Introduction to Botany" course numbers below 100 designate courses primarily for undergraduates, numbers 100 to 199 designate courses for undergraduates and graduates, and numbers 200 and above designate courses primarily for graduates.

College of Business Administration
5A Accounting
6B Business Administration
6C Economics
6F Finance
6L Management and Organization
6K Management Sciences
6M Marketing
6S M.B.A. Programs

College of Dentistry
82 Operative Dentistry
83 Endodontics
84 Prosthodontics
87 Oral Pathology and Diagnosis
88 Oral and Maxillofacial Surgery
90 Dental Hygiene
99 Orthodontics
90 Pediatric Dentistry
92 Periodontics
111 Preventive and Community Dentistry
112 Dental Nondepartmental
114 Family Dentistry

College of Education
7C Counselor Education
7D Educational Administration
7E Elementary Education
7F Social Foundations
7H Higher Education
7P Educational Psychology, Measurement, and Statistics
7S Secondary Education
7U Special Education
7W Instructional Design and Technology
7X Instructional Psychological

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

College of Liberal Arts
700 Nondepartmental courses
completed the following set of high school courses (units) or their equivalents. These high school unit requirements apply to entering freshmen who graduated from high school after 1985, liberal arts transfer students with fewer than 24 semester hours of transferable credit who graduated from high school after 1986, and transfer students with 24 or more semester hours of transferable credit who graduate from high school after 1986. Certain liberal arts requirements vary for students enrolling in the College of Agriculture (listed below). Four years of English/language arts, with emphasis on writing, speaking, and reading as well as understanding and appreciation of the literature. At least two years (but preferably four) of a single foreign language.

At least three years of mathematics, including two years of algebra and one year of geometry; in addition, a course in higher mathematics—calculus, 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 higher mathematics.

At least three years of science, including biology, chemistry, physics, and at least two years of science other than biology, chemistry, or physics. Each of these courses must be taken with laboratory component.

Students graduating in engineering must complete two years of social studies.

At least three years of social studies, including two years of history and one year of social studies in another area. Each of these courses must be taken with a laboratory component.

Science courses taken in engineering, including the three years of science must include two years of chemistry and one year of physics, or equivalent. Physics and mathematics are recommended for students majoring in specific fields of engineering.

At least one year of study in the performing arts, visual arts, or humanities is recommended but not required.

Applying for Admission
Prospective students interested in enrolling in any of the ten colleges of the University of Iowa should contact the Office of Admissions in advance of the spring 1984 fall enrollment period. This office provides information about application procedures, deadlines, and other important information to prospective students. Prospective students are encouraged to apply to the University of Iowa in the spring or fall of their senior year or early in the fall of the year prior to the year of intended enrollment. For specific admission standards of the respective colleges, please refer to the appropriate collegiate sections of the Catalog.

ACT and SAT Scores
All entering freshmen and undergraduate transfer students are required to take the ACT (American College Test) or SAT (Scholastic Assessment Test). In addition, students are required to take the SAT prior to the beginning of classes. Four years of English/language arts, with emphasis on writing, speaking, and reading as well as understanding and appreciation of the literature. At least two years (but preferably four) of a single foreign language. At least three years of mathematics, including two years of algebra and one year of geometry; in addition, a course in higher mathematics—calculus, 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 higher mathematics. At least three years of science, including biology, chemistry, physics, and at least two years of science other than biology, chemistry, or physics. Each of these courses must be taken with laboratory component. Students graduating in engineering must complete two years of social studies. At least three years of social studies, including two years of history and one year of social studies in another area. Each of these courses must be taken with a laboratory component. Science courses taken in engineering, including the three years of science must include two years of chemistry and one year of physics, or equivalent. Physics and mathematics are recommended for students majoring in specific fields of engineering. At least one year of study in the performing arts, visual arts, or humanities is recommended but not required.

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Graduate and Professional College Examinations
Prospective Graduate College applicants should 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 College of Dentistry, Law, or Medicine are required to take admission tests in the respective colleges.

Application Fees
A $20 application fee must accompany applications submitted by prospective students not previously enrolled for full-time study at the University. The application fee for foreign students is $30. Graduate College applicants must pay the fee unless they have satisfied a degree from the University of Iowa. Application fees are not refundable to Iowa residents who are denied admission.

Application Deadlines
U.S. Citizens
Entering freshmen are urged to apply early in the fall of their senior year or early in the spring of their junior year to ensure timely consideration. Transfer students and graduate students are encouraged to apply well in advance of their college to ensure timely consideration. The deadlines listed below are provided for information only. For specific application deadlines for all colleges, please refer to the appropriate collegiate sections of the Catalog.

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Determination of Residence

For admission, likelihood, and purposes, the University registers classes of students enrolling in the University as residents or non-residents of Iowa according to criteria established by the State Board of Regents and on the basis of information provided by the student and other relevant information. The criteria may be found under "Iowa Administrative Code: Board of Regents," at the back of the Catalog.

English Proficiency

Non-Native Speakers

The University's English proficiency requirement ensures 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. All applicants to the University whose native language is not English are required to provide scores on the Test of English as a Foreign Language (TOEFL). Along with their application for admission and supporting academic documents, automatic waivers from this requirement may be given to those who provide evidence of proficiency in English as follows:

Graduates of Iowa high schools whose ACT composite score is 24 or above (SAT combined score of 1050 or above) and whose ACT English sub-score is 21 or above (SAT 600).

Graduates of Iowa high schools whose ACT composite score is 25 or above (SAT combined score of 1080 or above) and whose ACT English sub-score is 22 or above (SAT 630).

Non-Residents of Iowa whose ACT composite score is 26 or above (SAT combined score of 1140 or above) and whose ACT English sub-score is 22 or above (SAT 630).

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

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

Foreign Students

Undergraduates

Undergraduates who present TOEFL scores below 550 are not considered for admission to the University. Admitted applicants whose TOEFL scores are below 600 may begin academic courses with no restrictions.

Applicants who are native English speakers and indicate that they should be exempted but whose TOEFL scores fall below 550 and 600 may be offered admission to the University. However, placement in regular academic courses is made only after the student's English language proficiency has been evaluated through on-campus testing.

Graduates

A minimum TOEFL score of 500 is required for admission to the Graduate College. Newly admitted graduate students who present TOEFL scores below 600 are required to sit for an English proficiency test before their first registration for courses. Some departments may require students to enroll in courses in English as a Foreign Language until their English proficiency reaches the appropriate level.

Graduate students should consult their departmental advisory committee for information on English proficiency requirements.

Online Professor Evaluations

On-campus proficiency evaluations are conducted by the Department of Linguistics. In the first year of enrollment, students are required to take both an on-campus and on-line Professor evaluation test or their academic advisors, according to their first registration, and are responsible for the second semester. Students are encouraged to take the assessment test at the beginning of their second semester.

Orientation Services

With the aid of representative student advisors and alumni, the Orientation Services design and conduct a wide variety of off-campus programs to help new freshmen, transfer students, and foreign students make a transition to University life.

Medical Information

The Student Health Service provides health care for registered students. All students are admitted to the University and receive a medical history form, which must be 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. Students who have health problems, the University recommends that they visit a registered physician and send a report to the Student Health Service so that 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 weekday when classes are in session.

Camping Visits may include a visit with an administrative assistant, a group information session, a campus tour, and an appointment with a faculty member or academic advisor in a specific field. Visitors are provided with information about academic programs, admissions requirements, financial aid, campus life, housing, and the many student services available at the University. Students may explore UI museums, libraries, and downtown Iowa City.

Campus visits start at the John G. Bowman House, Admission Visitors Center, located at 230 North Clinton. The center is open from 8:30 a.m. to 4:30 p.m. Monday through Friday, and 9 a.m. to 11 a.m. on selected Saturdays.

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Services for Transfer Students

The Office of Admissions provides a variety of services to student who seek to transfer into the University. The advisors are trained to contact the student with questions concerning admissions criteria, programs of interest, and course equivalencies. Advisors are available Monday through Friday, except holidays.

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

The admissions office also maintains a transfer center equivalency guide that provides accurate and consistent information on how individual courses from specific transfer institutions fit various degree programs at The University of Iowa.

Admitted students receive a summary of this evaluation prior to their 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 other public institutions for credit. Eligible, degree-seeking students in good standing at any of the three Regents universities may attend another Regents university for a period of two semesters; the credits earned at the other university are counted as resident credits at the home institution.

Applicants for admission to the exchange program must be enrolled full-time at the university. Applicants must be in good standing at the institution from which the applicant is transferring or moving and must have completed a minimum of one year at the institution.

Tuition and Fees

The University's schedule of tuition and fees for the Fall semester and for the academic year 1990-91 is stated below:

- Undergraduate: Resident $1,110 Nonresident $3,100
- Graduate: Resident $1,113 Nonresident $3,242
- Dentistry: Resident $2,132 Nonresident $5,997
- Law: Resident $1,112 Nonresident $3,849
- Doctor of Pharmacy: Resident $1,218 Nonresident $3,849
- Medicine: Resident $2,362 Nonresident $7,675

General fees for the student's one-semester enrollment include fees for student body, student activity, special events, and theater productions and performances by visiting stage and concert artists. The student fees do not provide for the benefits listed above.

Registration

All persons who wish to attend the University must enroll in the University and be registered to carry the curriculum. Students in the Graduate College and the Colleges of Business Administration, Engineering, Liberal Arts, Pharmacy, Dentistry, Law, Medicine, and Nursing may audit courses with proper approval. Students who audit courses are assessed a fee based on the lowest number of semester hours for which the course is offered that semester.

Payment of Student Accounts

The University issues a monthly bill for each student to an approved address. The bill includes charges for tuition, room, board, and other expenses for residence halls and fraternities, library registration, parking fees, and other departmental charges. Tuition and fees are billed three times each semester and once during the summer session. Tuition and fee adjustments occur on a monthly basis.

Refund Schedule

Students who withdraw registration during a regular semester receive a refund of fees assessed, as follows: during the first week—100 percent, during the second week—75 percent, during the third week—50 percent, during the fourth week—25 percent. There is no refund or reduction of fees for withdrawal 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 Procedure

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

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 on their financial status. Students must submit the Free Application for Federal Student Aid (FAFSA) to the College Scholarship Service (CSS). The FAFSA is available from the Federal Student Aid (FSA) to American College Testing (ACT) as soon as possible, and they should have FAFSA or ACT send a copy of the need analysis to the UI Office of Student Financial Aid.

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

The FAFSA or FSA may be obtained from high school and community college counselors. The FAFSA or FSA is good for only one academic year. Students must reapply for aid each year.

How Aid Is Determined

The University of Iowa determines eligibility for need-based aid by the same method of family financial analysis 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...

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Financial Aid ● Learning at Iowa 15

tuition, fees, books, room and board, and personal expenses.

Through the College Scholarship Service (CSS) or American College Testing (ACT) application, the University determines how much the student and his or her family should contribute, based on the family's income and assets.

Financial need is determined by subtracting the expected family contribution from the estimated costs for an academic year at the University.

Whichever 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 very unlikely to offer enough assistance to meet the financial need in full.

Eligibility for Aid

Students are eligible for Federal financial aid if they are U.S. citizens or eligible noncitizens and are enrolled at least half-time in a degree program, and if they demonstrate financial need as determined by the Free Application for Federal Student Aid (FAFSA). In order to maintain or establish eligibility for financial aid at the University, students must comply with the following reasonable Accumulated Progress (AP) standards:

- Minimum Semester Hours:
  - Undergraduates must earn 12 semester hours per academic school year (fall, spring, and summer semesters combined); graduates must earn 12 semester hours per academic school year.

- Minimum Grade-Point Average:
  - Undergraduates and graduates must maintain the minimum grade-point average requirement of the college in which they are enrolled.

- Duration of Eligibility:
  - Undergraduates must complete their bachelor's degree within six academic school years (12 semester hours) or 124 semester hours; graduates must complete the master's degree within four academic school years (eight semester hours) or 96 semester hours; graduates working toward combined master's/doctoral degrees must complete their program of study within eight academic school years (16 semesters) or 156 credit hours. Financial aid eligibility is canceled for six or more of the following reasons: exhausting one's duration of eligibility; failing to meet the requirements for satisfactory academic progress in terms of completion and/or grade-point average; or failing to meet the minimum requirements of probationary terms. These and other requirements and exceptions are outlined in detail in the publication University of Iowa Academic Progress Standards, available at the Office of Student Financial Aid.

Scholarships

Presidential, Alumni Association, and Dean's Scholarships

The University annually awards Presidential Scholarships to its high-school student students in 2,000,000 graduate students in the University.

Alumni Association Scholarships are awarded to selected seniors in the University in the Presidential Scholarship competition. They provide full-time resident tuition for four years.

Dean's Scholarships, also merit-based, are awarded to selected top-ranking students in the Presidential Scholarship competition. These are freshman-year, nonrenewable scholarships equivalent to the amount of resident tuition.

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

The Iowa Center for the Arts Scholarship

The Iowa Center for the Arts Scholarships are awarded on the basis of exceptional talent in the fine arts. Each department (art, dance, theatre arts, and music) awards a 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 4,900 nine-month, nonrenewable stipend. Application deadline for these awards is February 15. The award is made to the student of the most outstanding and promising talent.

LaVere Noyes Scholarships

LaVere Noyes Scholarships are the University's highest academic awards for entering freshmen. The scholarships include full-time tuition, as well as room and board, and are renewable for a maximum of four years, provided the student maintains a 3.0 grade-point average at the University.

Opportunity at Iowa Scholarships

Opportunity at Iowa Scholarships are awarded to selected top-ranking freshmen in the Opportunity at Iowa Academic Scholarship competition. Each scholarship carries an award of full-time tuition, which may be renewed for a total of four years provided that the student maintains a 3.0 grade-point average at the University. Application information is available from the University of Iowa Office of Admissions or from High school guidance counselors.

National Merit Scholarships

The University offers National Merit Scholarships to all entering freshmen who have achieved finalist status in the National Merit Competition. Students may receive it for up to four years. The minimum award is $7,500 Awards range from $1,200 to $7,500, based on financial need. The FAF or FFS determines need.

Freshman Honors Tuition Grants and Iowa Community College Transfer Grants

Entering freshmen in the College of Liberal Arts and Science and transfer students with Associates of Arts degrees from Iowa community colleges whose eligibility for the College of Liberal Arts Honors Program does not require letters of recommendation are eligible for $200 tuition grant. The limited funds are awarded on a first come, first-served basis.

Departmental Scholarships

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

University of Iowa Tuition Scholarships

The University of Iowa tuition scholarships are awarded on the basis of financial need and academic achievement. Entering freshmen must have an ACT composite score of 28 or above in the upper 10 percent of their high school graduating class. Up to 2,000 students are awarded a 3.0 cumulative grade-point average to qualify for the scholarship. The maximum amount of the scholarship is $6,000 twice, and the award is applied directly toward tuition. These scholarships are for undergraduates without a bachelor's degree who are enrolled full-time. The FAF or FFS determines financial need.

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Grants

Pell Grants

Undergraduate students without Inequity's degrees may apply for federal grants. Students must be enrolled at least half-time in a degree program in order to be eligible. Students may use the FAF or FIS to apply for Pell Grants.

Supplemental Educational Opportunity Grants (EOG)

The EOG 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 EOG is available for families who are eligible for financial hardship.

Educational Opportunity Program (EOP) Grants

Institutional funds are awarded to minority students with exceptional financial need. Financial aid and information must be reported. The FAF or FIS determines eligibility for this program.

Graduate Tuition Grants

Graduate Tuition Grants are institutional funds for graduate students in degree programs. The number of grants varies depending on financial need. Grants are based on financial need and are applied directly to tuition. The FAF or FIS determines eligibility for these grants.

Loans

Perkins Loans

Perkins Loans are long-term federal loans based on financial need. The amount of the loan varies depending on financial need. The student must be enrolled at least half-time in a degree program. Repayment begins after the borrower receives the loan, although the grace period may be granted for over 300 hours of work experience.

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 approved by a government agency and are administered by the federal government.

PLUS Loans and Supplemental Loans for Students (SLS)

PLUS loans are for graduate students; the SLS is for students. PLUS loans provide additional funds for educational expenses. PLUS and SLS applications are available from banks, credit unions, and savings and loan associations. The loan has a variable interest rate that is reevaluated each year. SLS borrowers must meet the FAF or FIS.

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. The interest rate is 5 percent. The FAF or FIS determines eligibility for this program.

Nursing Student Loans

Nursing Student Loans are long-term federal loans for students enrolled part-time in the College of Nursing. The interest rate is 5 percent. The FAF or FIS determines eligibility for these loans.

Jobs

Part-Time Jobs

Student part-time employment is provided at a rate that is established by the college and is dependent on financial need. Students employed in these positions must be enrolled at least half-time. The FAF or FIS 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.

College Work-Study Program

The College Work-Study (CWS) program helps students earn money to offset educational expenses. This program is funded by the U.S. Congress and the Iowa legislature. Students who are CWS eligible are limited to half-time in a degree program and must meet the University of Iowa's academic progress standards. Their work experience should contribute to their educational goals.

Other Sources of Aid

A guidance counselor or high school principal may have information on local scholarships. Individual schools or libraries are excellent sources for publications about financial aid. Major sources of employment include employers, educational associations, and labor unions. Alternative positions may include internships, research assistantships, and teaching assistantships.

Information about financial aid is available from the Student Financial Aid Office, 130 College Hall, Iowa City, IA 52242. Information about financial aid is also available from the University of Iowa's Office of Financial Aid.

Information about federal financial aid is available from the U.S. Department of Education, 1420 L Street, N.W., Washington, D.C. 20036. Information about financial aid is also available from the University of Iowa's Office of Financial Aid.
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 Block allocations, Fellowships, and Graduate Opportunity Fellowships. Scholarships, traineeships, and part-time employment also are available. Further information is available from academic departments or programs.

The resources of the University's Division of Sponsored Programs have information on student aid available from non-university sources, such as foundations and professional associations.
ACADEMIC SERVICES

Academic Advising Offices

Academic Advising

Each student is assigned an academic advisor to assist with educational planning, academic counseling, and registration. Most entering freshmen, including open majors, certain preprofessional majors, some declared majors, are assigned advisors in the Undergraduate Academic Advising Center. Other entering freshmen with declared majors are assigned to advisors in their major departments. Upon admission to professional colleges (Business, Administration, Education, Engineering, Nursing, Pharmacy, Dentistry, Law, and Medicine), students are advised by the college deans or their designated representatives. Graduate students are advised by their department heads and the Graduate College dean.

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

Undergraduate Academic Advising Center

The Undergraduate Academic Advising Center serves primarily freshmen and sophomores. Professional advisors provide extensive advising support, maintaining systematic and frequent contact with their advisees. They help students select a program of study and learn about career options that relate to their academic programs. They also advise students to request additional services in areas such as academic personal, and career counseling; academic skill development; and financial aid. The Advising Center's offices are located on the fourth floor of the Union Street student residence halls.

Collegiate Academic Offices

Each of the University's undergraduate colleges maintains an academic advisor for each of its students. These offices are available to all students in the respective colleges with open majors and declared majors, course requirements, graduation options, career and degree plans, and other matters. They assist students who want to change advisors or majors, and they act on student complaints.

International Education and Services (OIES)

The OIES is the focal point of the University's international activities. It has administrative responsibility for the University's foreign student scholar program and for other international services. It also has developmental responsibilities in international education, preprofessional education, and technical cooperation activities. The OIES works to enrich the campus by developing and promoting all aspects of its international dimension. The OIES promotes development of international educational exchange and international studies and promotes technical cooperation. It also assists faculty and students who seek grants or fellowships for study or research with an international perspective.

Through technical cooperation and faculty exchange programs, the OIES encourages the development of formal links between the University of Iowa departments and programs and their counterparts in foreign institutions.

The liaison officer for the Midwest Universities Consortium for International Activities (MUCIA) is located in the OIES. The MUCIA encourages involvement of University of Iowa faculty in MUCIA activities.

Foreign student advisors provide information counseling, and services related to orientation, financial aid, immigration regulations, and liaison with foreign governments and sponsoring agencies. They sponsor or support educational programs, such as the Friends of International Students, the International Presidents, and their function. This function fosters constructive relationships between students and scholars from other countries and their domestic counterparts. In short, they help with problems and questions in most areas except academic advising.

The OIES also serves as the major advisor for students and faculty. It maintains a library with references on study, work, and other countries, including information about foreign universities and study abroad programs open to UI students. The office helps students select study abroad programs to complete their university's academic program and helps ensure that they receive the correct credit for such activities.

It also helps students obtain information about and applications for the following scholarships: Fulbright, Marshak, DAAD (German Academic Exchange Services), IIE-American Foundation, International Student Identity Card, Tischler Exchange, Presidential Scholarships for Study Abroad, and the Stanley Fellowships for Graduate Student Research Abroad.

Students considering study abroad should consult the Office of International Education and Services. The following are University of Iowa study abroad programs. Depending on the program, some may be counted as semester hour as resistance or as transfer credit.

080188 Intramural and Exchange Programs

Placement Services

Placement Services is located in the Student Life Placement Office (SLPO) in Building 4. Staff at the SLPO assists students and graduates at every stage of their career counseling process. The placement team helps students discover what they do and enjoy, explore career options, and develop strategies for making effective career search efficient and successful.

The Office provides programs and services for students and graduate students seeking employment in business, industry, government, and nonprofit agencies. Students and alumni can attend on-campus interviews, take skill tests in the fall and spring, and can register for a subscription service.
to a weekly Job Bulletin (resumé referral) and a resume file service.

In cooperation with the Alumni Association, the Career Information Network provides Alumni, job seekers, and other interested individuals with: job seeking opportunities; information on employment in Iowa, the Midwest, and other areas; and job placement services.

The office offers programs on resume preparation, job hunting, and interviewing skills, and provides information on employment opportunities to seniors, graduate students, and other interested parties.

In addition to its services for students, the Career Information Network also offers assistance to businesses and community organizations with job placement needs.

Career Information Services
The Career Information Services office is located on the third floor of the Iowa Memorial Union. It is open to all students who are members of the University of Iowa, and provides assistance to students in obtaining employment opportunities, registering for classes, and making career decisions.

Career Information Center
The Career Information Center is located on the third floor of the Iowa Memorial Union. It is open to all students who are members of the University of Iowa, and provides assistance to students in obtaining employment opportunities, registering for classes, and making career decisions.

Cooperative Education
The UI Office of Cooperative Education, located in 315 Nishna Hall, is the primary campus resource for students interested in obtaining educational work experiences before they graduate. Undergraduate and graduate students may seek positions related to their academic and professional interests. Cooperative education assignments are available on a full-time, part-time, or summer basis, with opportunities existing throughout Iowa, the Midwest, and overseas.

Cooperative education assignments are designed to promote responsibility, support students in a supervised work situation, and develop qualifications needed for academic credit.

Information about cooperative education opportunities is available from the UI Office of Cooperative Education and from the Career Information Network.

Tutorial Labs
Mathematics Tutorial Lab
The Mathematics Tutorial Laboratory is integral to the junior college and freshman level mathematics courses. Students are encouraged to use the lab's programs and facilities, which include private and small group tutoring, self-instructional materials, computer-assisted instruction, and diagnostic testing and advising.

Students who have completed work at The University of Iowa can obtain an official transcript of that work upon request of the Office of the Registrar. Fees are $5 for the first copy and $1 for each successive copy on the same order. For an additional $2 charge, students' permanent identification can be added to the transcript service.

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The math lab holds tutoring hours throughout the day and on some evenings; no appointments are necessary. Students are encouraged to stop by the lab for help with assignments or to use the lab as a resource for supplemental materials; or study in the lab's reference environment, and to consult with their TAs concerning problems related to their math courses.

Reading Lab
The Reading Program's Reading Lab provides one-on-one assistance for University students who want to improve their reading and study skills. At the lab, students work with reading instructors as they practice reading material that is difficult for them or on elective reading, based on their own interests.

Students schedule two hours per week in the lab, usually Monday and Wednesday or Tuesday and Thursday, to work on their reading and study skills. At the lab, students work with reading instructors as they practice reading material that is difficult for them or on elective reading, based on their own interests.
and speech impairments, learning disabilities, mobility impairments, visual impairments, and others. The office's goal is to help students with disabilities enjoy the same rights and assume the same responsibilities as do other students.

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, safe and appropriate care, and health services. The center works with students individually to locate the type of assistance appropriate to their needs, from tutors or personal assistants to tape recordings in emergency-used wheelchairs.

Special Support Services
The Office of Special Support Services, located in Calvin Hall, interacts with the University's commitment to increase social diversity to the student body and provides essential services for academic, social, and financial support.

Special Support Services also includes the Upward Bound Project and New Dimensions in Learning.

GENERAL SERVICES

Campus Information Center
Located in the east terrace lobby of the Iowa Memorial Union, the Campus Information Center provides information on campus and community activities and University services and operations. The center also provides information on campus housing, student organizations, and accommodations. The center coordinates the University's housing, dining, and transportation services. The center is open seven days a week.

Campus Programs and Student Activities
The Office of Campus Programs and Student Activities (OCPSA) is located in the Iowa Memorial Union. It provides various services and educational programs and activities for the Iowa Memorial Union and The University of Iowa. The center is responsible for providing a variety of student services and organizations that enhance the student experience.

The center is open seven days a week.

Sports and Recreation

Intercollegiate Athletics for Men
The University of Iowa is a member of the Intercollegiate Conference of Faculty Representatives (Big Ten) and has athletic programs for football, basketball, track and field, baseball, wrestling, golf, tennis, cross-country, and gymnastics. Operating policies are determined by the Board of Control of Athletics, which is composed of 12 members from the University's teaching and administrative staff. The University's student-athletes are representatives from the University Staff Council, and two students.

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

Recreational Services
The Division of Recreational Services, located in the Iowa Memorial Union, is the largest provider of recreational programs in the country. The center provides services to more than 30,000 students, faculty, and staff. The center is open seven days a week.

The Intramural Program
More than 30 different intramural sports are offered, including basketball, volleyball, soccer, tennis, flag football, and ultimate frisbee. The center also offers various fitness programs, including weight training, swimming, and yoga classes.

Sports Clubs
Recreational services offices and families more than 30 sports clubs organized by individuals to further their interest in a sport or recreational activity. Clubs range from competitive sports clubs such as soccer and rugby to recreational clubs such as sailing and ice hockey.

Lesson Programs
Recreational services offers a variety of noncredit instructional classes for all ages groups throughout the school year. To defray the cost of providing instruction, the office charges a nominal registration fee for each program. Typical lesson programs include: 

- **Sports and Recreation**
- **Intercollegiate Athletics for Men**
- **Intercollegiate Athletics for Women**
- **Recreational Services**
- **The Intramural Program**
- **Sports Clubs**
- **Lesson Programs**
include gymnastics, golf, tennis, swimming, soccer, tennis, and various martial arts classes.

The division also offers fitness programs for people of all ages and fitness levels.

Informal Recreation

An informal drop-in recreation program is available for student use, including basketball, racquetball, pool, tennis, racquetball, squash, weight training, and jogging.

Outdoor Recreation

The division operates the Macbride Square Recreation Area, one of the finest university-managed outdoor programs in the country. The 43-acre Macbride area, located 15 miles south of the Iowa City campus and the Coralville Reservoir, offers canoeing and swimming activities, nature trails, an outdoor sports area, a nature center, and some of the finest cross-country and trails in the Midwest. It is the site of the outdoor recreation area for elementary school children.

The division also offers a weekend outdoor trip program that features a wide variety of activities such as white water rafting and canoeing, backpacking, bicycling, kayaking, rock climbing, horseback riding, cross-country and downhill skiing, and spelunking. An outdoor check-in service, located at 70 South Clinton Street, offers all types of outdoor equipment, including cross-country skis, picnics, equipment, canoes, backpacks, skates, and tennis.

Persons with Disabilities

Recreational and fitness activities are open to persons with disabilities, and exercise equipment is available specifically for persons with disabilities. In addition, recreation staff members are available to help disabled students who want to be mainstreamed into regular recreational services programs. The division offers a limited number of programs for persons with disabilities.

Summer Sports Camp

The University of Iowa has one of the largest summer camp programs in the Midwest. All popular team sports are offered, such as soccer, basketball, softball, volleyball, track, and field, and swimming. University summer camp programs are available at all the University of Iowa locations.

Iowa Memorial Union

The Iowa Memorial Union is the hub of student life. Its facilities include a coffee center, the Campus Information Center, the University Book Store, and the Goodwin Cafe. The Union also offers live entertainment, including concerts, comedy shows, and movies.

Women's Resource

The Women's Resource Center (WRC) provides services to meet educational, cultural, social, health, and personal needs of university and community women. WRC advocates for the removal of all barriers to equal access for women of all ethnicities, cultures, and religions, while working to provide women with resources, support, and training.

University Counseling Service

The University Counseling Service (UCS) is committed to fostering a multicultural environment. Its staff of professional counselors, social workers, and advanced doctoral students offers learning disability assessment and career counseling and therapy for students in individual, group, or seminar settings. UC Services also offers workshops, training, and consultative services. Most of its services are available to students without cost, but there is a minimal fee for psychological testing.

Veterans Services

The Office of Veterans Services is part of the Office of the Vice President for Student Affairs. It serves veterans, dependents of veterans, reservists, and servicemembers in matters relating to Veterans Affairs educational benefits, University registration, and study at the University.

University Residence Halls

The University's nine residence halls offer housing and dining accommodations and academic and student support for 5,200 single students. 768 families reside in apartments operated by the Department of Residence Services. University residence hall furnishings, facilities, and services are designed to

HOUSING

Fair Housing Policy

The following is the University's statement on fair housing practices: "It is and shall be the fair housing policy of the University that University students shall not discriminate on the basis of race, color, creed, national origin, sex, religion, or handicap, or any other basis against any individual or group...

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The University's nine residence halls offer housing and dining accommodations and academic and student support for 5,200 single students. 768 families reside in apartments operated by the Department of Residence Services. University residence hall furnishings, facilities, and services are designed to
provide a pleasant atmosphere conducive to effective study.

Single, double, triple, and quadruple rooms and a full or partial board are available in the Grand Avenue Residence Halls (west campus), which include Pollock, Quad South, and Suter halls, and in the Clinton Street Residence Halls (east campus), which include Burge, Currier, Deam, Mayflower, and Student halls. There are lounges, study areas, recreation or game rooms, common dining facilities, and small stores in or available to each residence hall. Computer terminals, reference materials, news libraries, and pre-printed group study sections are available in four monitored learning centers.

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

Students are offered on-campus guides and activities for opportunities for students to pursue social, recreational, cultural, and educational interests, many academic classes are taught in residence halls. An academic advising center is located in Burge Hall, and tutorial services are available there.

All students living in residence halls must contract for a food plan, with the exception of Mayflower residents, who may contract for a meal plan. Students who do not live in residence halls may purchase full or part-time contracts.

Applications and Assignments

Prospective undergraduate students should receive housing applications in their admissions package to apply for residence hall accommodations. Students applying for residence hall accommodations should read the terms and conditions of the housing arrangements, all information on the application form, sign the contract portion, and return the completed application/contract with a check for $100 to the University Housing Assignment Office, Burge Hall.

Applicants who want to room together should enter each other’s names on the social security number under “Roommate Request” on the application for residence hall accommodation. They should also list the same preferences—room type, building, guest policy, special housing options—and list “roommates” as their first-priority preference on the application.

Applicants do not receive room assignments until they have been admitted to the University. However, they may apply for housing at the same time they apply for University admission.

The residence hall application/contract and $100 advance payment constitute a contract offer. Applicants may withdraw by notifying the University Housing Assignment Office in writing before their application becomes a binding contract. The application becomes binding approximately ten days after the University Housing Assignment Office receives notice of acceptance of the contract and assignment of accommodation.

Upon written request, the $100 advance payment is refunded to applicants who are not admitted to the University or 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 1989-90 academic year are $2,580 for a double room and $2,090 for a triple, with full board (20 meals per week). Rates for rooms and board options vary according to accommodations. Rates are subject to change annually.

Family Housing

There are 74 University-operated apartments for married students or legally defined family units in the Hawkeye Drive, Hawkeye Court, and Parkville complexes. Monthly rents for 1989-90 academic year were $705 for efficiencies, $1,245 to $1,275 per month for one-bedroom units, and $2,275 to $2,875 for two-bedroom units. Rent includes utilities and costs associated with off-campus and local service, but not gas or electricity. All units are furnished. 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 residence is complete, but they are not accepted more than three years in advance.

Off-Campus Housing

The Housing Officelocated at the Campus Information Center in the Iowa Memorial Union, maintains a current listings of rooms available; on-campus listings for available; on-campus listings for University students and other off-campus rooms and local service in the housing units, the apartments, and the student community. To provide and maintain the right of every individual student to exercise this freedom to live 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 at its academic community. In order to foster a community where students learn in a reasonable manner, all students are expected to abide by the code and 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 in no aspect of its programs shall there be discrimination in the treatment of persons because of race, creed, color, national origin, age, sex, disability, and other classifications which deprive persons of consideration as an individual and as a person of worth and respect. This principle is expected to be
observed in the internal policies and practices of the university, specifically in the admission, housing, and relocation of students. 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 furthering these principles.

**Student Complaints Concerning Faculty Actions**

Student complaints concerning actions of faculty members are pursued first through the internal procedures established at 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.
- Failing a satisfactory outcome, the student should turn to the departmental executive officer or chair.
- If a satisfactory outcome still is not obtained, the student may take the matter to the college dean. In addition, graduate students should consult with the associate dean for academic affairs in the Graduate College concerning ways to resolve complaints.
- Students (Academic, Educators, Engineering, Law, Medicine, Nursing, and the Graduate College) also have established an ombudsperson system as an alternative mechanism for handling student complaints. Information concerning the informal mechanisms established in a specific college is available in the college dean's office or The University of Iowa Student Association (USA).

If a student complainant concerning faculty actions cannot be resolved through the informal mechanisms available, the student may file a formal complaint, which will be handled under the procedures established for dealing with alleged violations of the "Statement of Ethics and Academic Responsibilities," as specified in section 20.26 of the University Operations Manual. A description of these formal procedures, printed in section 20.26 of the University Operations Manual, can be obtained from each college's dean, the Academic Office of the Council of college ombudspersons, the Liberal Arts Office of Academic Programs, the Undergraduate Academic Advising Center, and the office of the Council of Associate Presidents.

**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 unreasonable through existing channels. The ombudsperson investigates claims of unfair treatment of employees, students, or visitors and provides an internal ombudsperson office. The ombudsperson considers all sides of a question in an impartial and objective way. The ombudsperson's office is an independent entity. It is not part of and does not report to the University administration. It treats all requests and consultations in strict confidence. It never dioxide a client's name or the nature of his or her complaint without the client's consent.

Before consulting the ombudsperson, students, staff, and faculty should try to resolve their problems by following procedures outlined by University rules and policies. Where practical, faculty and staff members should discuss problems with department chair and/or their supervisors; students should follow procedures in the Handbook Policies and Regulations Admitting Students, Students, Staff, and Faculty usually should consult the appropriate academic advisor, department head, supervisor, chair, dean, or other administrator before contacting the ombudsperson.

They may consult the ombudsperson at the outset, however, if using official channels would result in lengthy and damaging delays or a lack of confidentiality and/or impartiality detrimental to their case.

The ombudsperson has the power to order changes in rules, regulations, policies, procedures, or the behavior of others. Solutions reached through the Office of the University Ombudsperson and the Fostering of the responsibility of the parties involved to see that the solutions are implemented.

**Policy on Sexual Harassment**

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

**Division I. Sexual Harassment**

**Section 1. Reason**

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

(b) Sexual harassment is especially serious when it threatens relationships between teacher and student or supervisor and subordinate. In such situations, sexual harassment can create a situation where the student or employee feels they are the subject of harassment, and thus feel compelled to submit to the wishes of the teacher or supervisor.

(c) While sexual harassment most often takes place in a situation of a power differential between the persons involved, the University also recognizes that sexual harassment may occur between persons of the same University status. The University will not tolerate behavior between among members of the University community that creates an uncomfortable or offensive 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 verbal or physical conduct of a sexual nature when:

(a) Submission to such conduct is made explicitly or implicitly a term of condition or is an essential incident of employment or academic effort or activity.

(b) Submission to or rejection of such conduct is used as a basis for an individual’s academic judgment or employment or educational decision affecting an individual.

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

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

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

The University recognizes that its creative activity is indispensable if its teaching is to have the necessary freshness, relevance, and effectiveness expected of a distinguished institution of higher learning. The University holds that the term "research" is applied 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 institute and actively promotes the research mission of the University in many ways: it

- assesses the development of new knowledge;
- develops and maintains the infrastructure for proper conduct of research;
- helps individuals, groups, 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 institutional review of potential major research-based University initiatives as well as internal management for projects judged worthy of pursuit;
- fosters interdepartmental 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 acts in development of a University agenda to meet those needs;
- affects federal legislation and regulations enhancing the University's position as a major research institution; and
- promotes the development of the Oakdale Research Campus in support of the University's research mission.

It stimulates and manages technology transfer of intellectual property to the private sector;

- manages University efforts to improve to the university's image;
- promotes the Oakdale Research Park as a venue for University-industry interaction;

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

The University Research Council assists the vice president for research in a regular advisory capacity. The council consists of ten faculty members who are widely recognized for their principal involvements in basic research or creative activity, one representative of the University staff, and two student members. Faculty members include two each from the natural, 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 securing and allocating funds for support of research and creative activity, and additional matters related to the 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:

Interdisciplinary Research Assistantship Program

Support is available to faculty for hiring graduate student research assistants who help conduct interdisciplinary research in certain contexts. Eligible faculty members include tenure-track and tenured faculty involved in interdisciplinary research programs not authorized to award graduate degrees, those engaged in interdisciplinary research who are seeking funds to support research assistants in disciplines different from their own, and those involved in research with one or more faculty members, where the research spans their respective units.

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 instructor or assistant professor. The funds may be used for any purpose that will assist the faculty member in conducting an initial exploration of a hypothesis that he or she believes may lead to the development of a full-fledged program of research.

Incidental Grants

Limited funds also are available to faculty members to cover the costs of materials, supplies, equipment, proposal writing, travel and related technical and administrative expenses for specific research projects. For faculty 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 following services and support to individuals and groups involved in research and creative activities. They include the following:

- Central Research Facilities
  - To maintain state-of-the-art resources for key research activities within the University. Selected facilities are identified for centrally supported development. Such facilities are available to all interested graduate students and faculty and on a time-available, pro rate basis to those outside the University community. Some financial support is maintained by the Office of the Vice President for Research for use of the facilities by graduate students. Currently these facilities include the following:

  - Computer-Assisted Image Analysis Facility
    - The Image Analysis Facility, located in the Eckert Medical Research Building, provides instrumentation and technical assistance for research programs involving digital image processing and analysis, three-dimensional imaging and modeling, vector processing, and computer animation.

    - The facility has two silicon graphics Irix workstations and two Gould IM500 image processing systems that handle most graphics and imaging applications. Other hardware includes two VAX II minicomputer systems, a Macintosh network, an Ethernet terminal, a visual camera, and a variety of other peripheral devices.

    - The workstations provide a powerful means to display graphic data. There is microscopic software for creation of real-time, three-dimensional animations and Virtual View software for display of volumetric data and for three-dimensional data sets such as CT and MRI scans.

    - The facility has the capacity to digitize images from microscopic slides, automated image analysis devices, video tapes, and other film. The digital images can be processed in a number of ways, including pseudocolor coding, edge detection, and gray-scale enhancement techniques.

    - Two full-time staff engineers and one research assistant perform image analysis techniques, develop new image processing and graphics modeling applications, serve as software consultants, train novice or experienced users in the operation of facility systems, and develop new and
customized existing imaging and graphics software.

The facility is well equipped for molecular modelling by computer and has several packages available for studying molecular biology, protein, and biomolecular interactions.

In addition, the facility also provides access to the Cambridge and Brookhaven molecular databases.

**Electron Microscopy (EM) Facility**

The Electron Microscopy Facility provides instrumentation and technical assistance to researchers in the areas of scanning and transmission electron microscopy, X-ray microanalysis, and electron tomography.

**Equipment includes:**
- A Hitachi 7700 scanning electron microscope equipped with an energy-dispersive X-ray spectrometer.
- A Zeiss 902 TEM equipped with a field emission gun and a high-resolution image detector.
- A Zeiss 912 scanning electron microscope equipped with an Oxford Link energy-dispersive X-ray spectrometer.
- A FEI Tecnai 12 transmission electron microscope equipped with a Gatan imaging filters and a Gatan USP 6200 electron detector.

**Applications:**
- Structural analysis of biological specimens using high-resolution electron microscopy.
- Chemical analysis using energy-dispersive X-ray spectroscopy.

**High Field Nuclear Magnetic Resonance (NMR) Facility**

The NMR facility is equipped with two high-field NMR spectrometers: a Bruker 400 MHz spectrometer operating at 400 MHz and a Bruker 400 MHz spectrometer operating at 90 MHz.

**Applications:**
- Structure determination of complex molecules.
- Determination of molecular dynamics.
- Investigation of protein-protein interactions.

**High Resolution Mass Spectrometry (HRMS) Facility**

The HRMS facility is equipped with a LTQ Orbitrap Elite mass spectrometer for high-resolution mass measurements.

**Applications:**
- Determination of molecular masses and isotopic distributions.
- Structural analysis of complex mixtures.

**High Resolution Mass Spectrometry (HRMS) Facility**

The High Resolution Mass Spectrometry Facility, located in the Chemistry-Biology Building, provides high-resolution mass measurements for almost any experiment in modern mass spectrometry.

**Applications:**
- Determination of molecular weights.
- Elemental composition.
- Structure determination of organic, biorganic, and inorganic molecules.

**Gas Chromatography/Mass Spectrometry (GC/MS) Facility**

The GC/MS facility is equipped with both gas chromatography and mass spectrometry instruments for the analysis of complex mixtures.

**Applications:**
- Analysis of volatile organic compounds.
- Identification of environmental pollutants.

**Proteomics Facility**

The Proteomics Facility is equipped with advanced mass spectrometry instruments for the analysis of complex mixtures.

**Applications:**
- Analysis of protein-protein interactions.
- Identification of post-translational modifications.

**Large Scale Fermentation Facility**

The Large Scale Fermentation Facility, located in the Brown Science Building, provides large-scale fermentation of microorganisms.

**Applications:**
- Production of enzymes.
- Production of antibiotics.
- Production of vaccines.

**Microbial Genomics Facility**

The Microbial Genomics Facility is equipped with high-throughput sequencing instruments.

**Applications:**
- Genetic analysis of complex mixtures.
- Identification of gene regulatory networks.

**Protein Expression Facility**

The Protein Expression Facility is equipped with high-throughput protein expression systems.

**Applications:**
- Production of recombinant proteins.
- Identification of protein-protein interactions.

**RNAi Facility**

The RNAi Facility is equipped with high-throughput RNAi screening systems.

**Applications:**
- Validation of gene function.
- Identification of gene regulatory networks.
Laser Facility

The Laser Facility consists of a wide variety of modern laser instrumentation. In particular, state-of-the-art CW argon ion and krypton ion lasers (with ultraviolet capabilities) are employed either alone or to pump two tunable dye laser systems throughout the visible and near-infrared regions of the spectrum. Each CW Laser is routinely operated single mode with a line width of one thousandth of a reciprocal centimeter. Other CW lasers, including low power argon ion, helium-neon (with cadmium, and Alexandrite (tunable), are also available.

Major pulsed laser systems include a less than or equal to 30 pulse per second Nd:YAG laser system with harmonic generation (2S, 3x, 4x), which pumps two pulsed tunable dye laser systems and includes doubling and Raman shifting capabilities to completely cover the spectrum from vacuum ultraviolet to mid-infrared. An additional pulsed dye laser is pumped by a pulsed excimer laser (the output usually equal to 100 perrsec or less) or a pulsed neodymium laser. A 30 watt Nd:YAG laser (460)

A computer-controlled stage for laser microfabrication applications also is available. In addition, the facility is equipped with a variety of spectroscopic, ultrasonic, electrical, and vacuum devices. This instrumentation is installed in a single large laboratory in the southeast wing of the Chemistry-Biology Building. It includes a mechanically and thermally stable 4-tub-long enclosed optical bench with a variety of workstations for users. Holland computer control is available in a separate laboratory in the College of Engineering.

A separate Microfabrication Facility in the Chemistry-Biology Building includes a range of equipment for lasers and diagnostic equipment, including a tunable, pulsed mid-infrared laser system in the infrared; two CW CO2 lasers, one tissue-culture-compatible 150 watt and one 10 Hz 400 watt; a 28 watt CW argon ion laser with double interlocked with computer-controlled translation and a continuous optical system; electron probe microanalyzer; electron microscope; SEM; AFM; microspectral imager; atomic force microscope; scanning electron microscope; optical microscope; and several high-speed digital oscilloscopes and computers for experiment control. An ultramicrotome and scanning electron microscope is being installed on the Oldaker Research Campus. It will include capabilities for studying phenomena with pulsed lasers on a picosecond time scale.

Protein Structure Facility

The Protein Structure Facility provides instrumentation and expertise to assist investigators in all aspects of protein chemistry. The facility is equipped to carry out protein/peptide sequencing, peptide synthesis, and amino acid analysis for compositional information or physiological fluid profiling. Other services such as protein or peptide purification and peptide mapping also are available.

A number of instruments are available for use by investigators. Included in this group is an automated HPLC, a capillary electrophoresis instrument, a high-sensitivity fluorometer for fluorescence, and polaronization and lifetime measurements, a circular dichroism spectrometer; and a high-resolution uv/vis spectrophotometer. Three stopped flow instruments also are available for studying fast kinetics.

The director and staff are available for consultation on protein purification or analysis and for training users in the operation of facility instruments. Users are encouraged to take an active role in the use of the facility. The Protein Structure Facility is located in the Bowes Science Building.

Social Science Institute

The University of Iowa Social Science Institute (SSI) is a research and teaching facility that supports the work of faculty and graduate students in a variety of departments on campus. Located in Schaeffer Hall, the institute provides the capability for conducting interdisciplinary research using a state-of-the-art, computer-assisted telephone interviewing (CATI) system as well as large-scale mail surveys. The CATI hardware system includes a central server computer linked through a local area network to 12 interviewing stations. Features of the CATI system include automated dialing, automated execution of complex questionnaire skip patterns and logic branchers, call attempt disposition tracking, and automated verification of numeric and verbatim responses in machine-readable form.

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

The institute maintains an extensive Social Science Data Archive and acts as a central clearinghouse for SSI research by professional staff consults with faculty and graduate students as well as clients outside the University.

The University maintains membership in the Inter-University Consortium for Political and Social Research (ICPSR) through SSI, enabling members of the University community to obtain a vast array of social science data for secondary analysis. The archive presently includes more than 2,000 datasets and continues to grow each year.

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

Statistical Consulting Center

The Statistical Consulting Center (SCC), located in Maclean Hall, helps design experiments and surveys, analyzes data, and prepare grant proposals. Faculty and advanced graduate students in the Department of Statistics and Actuarial Science provide professional statistical consulting to the College of Liberal Arts and Sciences.

Deep-in consulting services are available free of charge for graduate students and to certain select form research problems. More extensive consulting is offered on a cost-recovery basis.

Sponsored Programs

Located in Gilmore Hall, the Division of Sponsored Programs maintains a repository of information on internal and external sources of funding for research projects by faculty, staff, and graduate students. The division searches for potential funding sources and students take advantage of funding opportunities. The division and students alike prioritize projects with potentially interested funding agencies. Its staff members specialize in major discipline areas.

The office maintains files on all internal and external agency programs, complete with proposal guidelines, application forms, competitive information, and directories of agency staff. Division staff members are well-acquainted with programs and requirements of agencies.

The division’s resource center, also located in Gilmore Hall, maintains extensive files on private foundations and corporations that support college and university programs. Among the many resources of the center are directories of available grants, fellowships, and scholarships. Directories of research programs and research and annual reports of private foundations, and directories of social science agencies and foundations with guidelines and application forms for program support. The division maintains its own computerized database of information on more than 3,000 social science programs of interest to University investigators. Customized searches can be performed to determine funding sources for proposed programs.

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

• Individual contact, either by telephone, mailing, etc.
• Research and Graduate News (RGN), published by the University's faculty/staff newsletter.
• Twice-weekly bulletin from the Community Business Daily, which lists all government proposals for proposals (RFPs) and requests for qualifications (RFQs); the division also obtains copies of RFPs in response to special requests from individual researchers, etc.

• Faculty interest profiles developed through surveys for the purpose of matching opportunities and potential collaborators with faculty members' interests and profiles remain current via periodic updating.

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

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

The Division of Sponsored Programs is responsible for interpreting regulations that affect research activities. It has major responsibilities for monitoring compliance documentation regarding the use of humans or animals in research. The staff's understanding and interpretative capacity helps ensure full compliance with established rules.

University of Iowa Research Foundation

The University of Iowa Research Foundation (UIRF) was established in 1975 to provide and conduct research for intellectual property and inventions generated at the University of Iowa which might lead to commercial applications, and to license such property and inventions to industry. When the federal government adopted a uniform government patent policy in 1980, allowing universities to retain ownership of patents based on federally funded research, the process of technology transfer at the University was greatly simplified. Communications between industry and the investor were enhanced as sponsors of university research contracts could be assured the opportunity to license resulting technologies from the University, even if federal funding had also been secured for the project.

The University of Iowa Library was established in the UIRF in January 1889 to help faculty and staff identify marketable technologies. Historically the UIRF had relied primarily on outside agents and firms to promote and license University-generated technologies to industry. Reflecting the University's increased commitment to commercialization of its technologies and economic development, the UIRF in July 1989 expanded its activities to include internally controlled marketing and licensing of its technologies to industry. Upon request, the UIRF provides to industry representatives a summary of all technologies currently or potentially available for licensing, and when appropriate, assists in the exploration of joint-venture or venture capital opportunities from University-generated technologies.

Oakdale Research Campus

The Oakdale Research Campus is affiliated with the Office of the Vice President for Research. Its 500 acres of land and 51 buildings are located within the corporate limits of Coralville, approximately seven miles north-east of the main University campus. The Oakdale campus is accessible by interstate and multi-lane divided highways. Appropriately, many researchers, students, patients, staff, tenants, conference, and visitors use the campus daily.

During the past decade, the campus has evolved from a provider of patient care to a diversified research and educational campus. Most of the programs and projects are subsidiaries or satellite programs of University colleges and major departments. Among these are the Center for Social Studies, Community Clinical Practice Center, Institute of Agricultural and Environmental Health, Institute of Child Behavior Development, Regional Laboratory for Innovative Services, Iowa Geotechnical Survey, U.S. Department of Agriculture, U.S. Department of Health and Human Services, U.S. Department of Education, Medical Sciences Research Center, and Veterinary Research Center.

New programs added during the past several years include the Institute of Public Affairs, Iowa Center for the Book, Center for Health Effects of Environmental Contamination, Biomedical Engineering Research Center for Laser Science and Engineering, Genetic Counseling Program, Iowa Drug Information Service, Iowa Liberal Arts Research Program, National Resource Center on Family-Based Services, and Health Promotion Office.

Also located on the research campus are the Technology Innovation Center, University Museum, and the State Hygienic Laboratory, all of which are described in this section of the Catalog.

Oakdale Research Park

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

Located on a 12-acre parcel of land on the Oakdale Research Campus, the park includes a multiuse building designed to meet the needs of growing companies emerging from the Technology Innovation Center, small or medium-sized research and development firms, and research units of larger, established firms.

The University also leases land at the park to organizations that want to construct and occupy separate facilities. Sites of varying size and prominence are available to meet individual corporate needs.

For more information contact the Office of the Vice President for Research.

Technology Innovation Center

The University of Iowa Technology Innovation Center (TIC) offers a range of services and facilities designed to foster the development of new business ventures—particularly those that make use of advanced technology. Many services at the center are tailored to the needs of entrepreneurs just starting up. However, the center also serves established companies eager to innovate and commercialize.

The strength of the center lies in its ability to couple the scientific and technical capabilities of the University with the entrepreneurial spirit of the surrounding community. Located on the University's Oakdale Research Campus, TIC provides a collaborative work space where entrepreneurs can communicate, share ideas among themselves and with academic researchers, and those in business can flourish. It often opens the University's computing facilities, research equipment, and laboratories and, as such, is a key ingredient in making the University's Center for Excellence in Biotechnology a reality.

University House

University House, established in 1977, is a place and program dedicated to the support of independent and collaborative scholarship. Occupying 35 offices and meeting rooms in Oak Hall on the University's Oakdale Research Campus, University House provides a productive environment where faculty members can work on scholarly tasks and meet in easy interchange. Many University House scholars are supported by University faculty development awards or by grants and fellowships from foundations and federal agencies.

Faculty members in all disciplines and institutions are eligible to request
appointments at University House. University of Iowa professors enjoy the relative exclusion of University House and the opportunity to meet faculty from other disciplines. Visiting professors come to University House to gain easy access to University Library resources and to meet University scholars working in related areas of research. Collaborations from different departments and institutions find University House a productive environment.

University House has a particular interest in promoting collaborative efforts. The Interdisciplinary Research Grant program, unique in the nation, supports scholarly projects conducted by two or more University faculty members from different disciplines. University House also frequently sponsors research and curriculum development projects of faculty members from liberal arts colleges in the Midwest, often in collaboration with University faculty members.

More informal opportunities for collaboration are offered by University House seminars and lunches in the cafeterias.

In addition to promoting faculty development generally, University House seeks to bring together University centers, institutes, committees, and other groups and to create interdisciplinary arrangements that foster the acquisition of external support for research and educational development.

All scholars at University House are provided with a faculty suite, a personal computer, and secretarial assistance, and have access to conference rooms, a kitchen, and a lounge. Also available in Oakdale Hall are a copy center, cafeteria, and a library and reference office. Parking is free, as is the frequent campus shuttle service that connects University House with the main campus. All visiting scholars enjoy full borrowing privileges at University Libraries and access to University research facilities.

Center for Global and Regional Environmental Research

The Center for Global and Regional Environmental Research is being developed to expand current knowledge of the effects and interactions of global climate change. The center fosters interdisciplinary study of the physical, chemical, and biological processes that influence the earth's climate and trends by bringing together the University's special strengths in the health sciences, large-scale ecological, and climatic systems, and ecological systems and dynamics. It interacts with other University research groups, each as the Public Policy Center.

Center for Health Effects of Environmental Contamination

The Center for Health Effects of Environmental Contamination determines levels of environmental contamination that can be associated specifically with human health effects. The center's activities encompass a wide variety of research involving exposure and risk assessments, including performing pertinent laboratory data; using data from the existing statewide cancer and birth defect recording systems; developing registries of persons known to be exposed to environmental hazards; developing highly sensitive biomedical assays; performing epidemiologic studies; fostering relationships and ensuring the exchange of information with other teaching institutions or laboratories in the state; implementing programs of professional education and training and implementing public education programs.

Public Policy Center

The Public Policy Center conducts interdisciplinary research on public policy issues and options in areas such as transportation, environmental quality, health care, and economic growth and development. It helps faculty secure funds for research on public interest topics and organizes symposia on public policy issues.

Research and Development Consortium

The Research and Development Consortium is an arm of the University of Iowa House and the University's Department of Special Resources at Iowa. It exists to provide a plan for University participation in Iowa's economic growth; planning for selected technology transfer projects; developing of marketing strategies for attracting businesses to the area and the state; and commission of a program to make information about University research readily available to Iowa State University and the University of Northern Iowa, as well as those in the private sector. The consortium is part of an interinstitutional network of similar groups at Iowa State University and the University of Northern Iowa.

Office of the State Archaeologist

The Office of the State Archaeologist (OSA) conducts archaeological work that leads to development, documentation, and preservation of knowledge about Iowa's prehistory and history. OSA is responsible under Iowa State University for discovering, excavating, and preserving archaeological remains in Iowa. Protection of ancient burial sites and human remains is one of its major functions.

The OSA conducts research, educational, and service activities throughout the state and provides consulting services for agencies, municipalities, and firms that need archaeological expertise. In field work, emphasis is placed on archaeological survey and evaluation of development areas, new highway corridors, and their sites at threatened sites. It also conducts field schools, teacher workshops, and cooperative research projects with other departments and agencies. Through OSA, University of Iowa students engage in a variety of laboratory and field work.

Last summer, the Office of the State Archaeologist coordinated research projects with the Departments of Anthropology and Geology and with their colleagues in the Iowa Quaternary Studies Group. Several have attended faculty appointments and teach courses in the anthropology department.

OSA's role in Iowa's heritage includes developing new educational opportunities; conducting research on prehistoric sites; developing new teaching and learning opportunities; and curating and documenting sites and artifacts. The Office of the State Archaeologist also curates the OSA's collection of American Indian artifacts and other archaeological materials.
WCC maintains systems capable of en extremely wide variety of applications. These facilities are accessible through network terminals and work stations distributed around the campus.

WCC's campus and external network connections provide University users with convenient access to national computing and information resources. On the University of Washington, WCC maintains memberships in the CENET, MIRNET, and RENET networks.

WCC's Network Services Group offers planning, consulting, installation, and management services for departmental networks. It also provides consulting and wireless network services for campus network applications.

WCC's Personal Computing Support Center provides production, distribution, and purchase of equipment, operating systems, and software. The faculty/staff and student Microcomputer Purchase Program, provides hardware and software support to campus microcomputer users.

Personal computer are available for use by University students, faculty, and staff at several Instructional Technology Centers on campus. These are jointly supported by WCC and by academic and service units.

Noncredit educational seminars and consultation on general computer use are available on an ongoing basis. Specialized consultation is also provided for equipment and software. A network directory database, and Instructional design applications.

Detailed information on computing facilities and services is available from the Information Technology Support Center.

Evolutionary Ecology and Behavior

Chade Stephen Henshaw

Professor: Richard C. Baker (Ecology); Robert W. Draber (Biology); John T. Schlueter (Biology); Holmes A. Stainton (Ecology); David Winter (Chemistry); Dawn B. Young (Geology)

Associate Professor: Russell L. Covacs (Anthropology); Ann B. Hold (Geology); Stephen Henshaw (Biostat); Travis Horton (Biology); George Ravelos (Geography)

Assistant Professor: Janna Grier (Chemistry)

Programs and Facilities

The Department of Biology and Botany offers undergraduate and graduate study leading to the M.S. and Ph.D. degrees with specialization in ecology and evolutionary biology, emphasizing adaptation, population ecology, and community ecology.

Particular strengths of the program are quantitative methods in ecology and evolutionary biology, plant-plant interactions, and population biology and tropical biology. There is real and strong emphasis on balance between controlled experimentation and field observation. Laboratory research may include controlled breeding experiments in which heritability, behavioral, life history, or other traits are investigated. Field research emphasizes the adaptive significance of traits, interactions between species, and populations and community dynamics.

Opportunities for field research are provided largely by the Machame Nature Recreation Area just outside Iona City, with lakes, temperate forested areas, and old fields. The Iona Laisiade Laboratory on Lake Kivu, with year-round laboratory facilities, housing, and a research vessel, provides the opportunity to study undisturbed prairie, marshland, and lake ecosystems.

Field work by faculty and students also takes place worldwide. Recent studies have been conducted in East Africa, England, the Caribbean, Brazil, Mexico, Central America, the Great Smoky Mountains, the Mohave Desert, the American Rocky Mountains, and the Florida Keys. The Smithsonian Institution Laboratory on Barro Colorado Island in Panama and the Parque Nacional de Santa Rosa in Costa Rica are among sites used by staff and students.

The University of Iowa is a member of the Organization for Tropical Studies and regularly works students to the Tropical Biology Course in Costa Rica. In addition, the University has a cooperative program with the University of the Andes in Merida, Venezuela.

Institute facilities provide a wide range of studies, with varied equipment for observation and analysis, such as video-recorders, movie cameras, walk-in environment chambers, computer terminals, a GC-MS, and a GIS-12 computer. There is ample space for housing a variety of organisms, and a recently constructed 3,600 square-foot greenhouse provides room for research projects. The botany greenhouse contains a large collection of diverse, aquatic, vernal, and economic forms. The botany herbarium contains more than 60,000 specimens. The Museum of Natural History, an institutional member of the American Association of Systematic Collections, houses more than 100,000 natural science specimens, with birds and mammals particularly well-represented among the vertebrates.

The atmosphere at Iowa is friendly and cooperative and the approach multidisciplinary.

Students may design their graduate programs to take advantage of collaborative, contract, course work, and co-supervisory opportunities with members of the Department of Biology, Botany, Chemistry, Computer Science, Geography, Geology, Mathematics, Microbiology, Physiology, and Statistics and Actuarial Science.

Students are encouraged to participate in departmental affairs and may hold positions of responsibility on faculty committees.

Financial Support

All graduate students are offered financial support. Teaching assistantships, research assistantships, tuition scholarships, and professional training fellowships are available. The Norco Fund assists student travel for study. Institutions students may apply for the Professional Assistant-in-Instruction Program or the NFS fellowships for students in the humanities, and may compete for need-based money from the University. Computer hours are available for graduate students, postdoctoral researchers, and faculty members.

Iowa Quaternary Studies Group

Professor: Richard C. Baker (Ecology); Lois D. Driscoll (Geology); Mark R. Grenander (Geology); Don C. Grotz (Geology); John T. Schlueter (Biology)

Associate professor: James B. Hold (Geology); Russell L. Covacs (Anthropology); Diane E. Johnson (Biology); George R. McManus (Geology); Frank W. Worden (Geography); George E. Houghton (Geology)

Assistant professor: Mary Whelan (Archaeology)

Adjunct professor: William Green (Anthropology); George H. Bellanger (Geology)

Adjunct associate professor: R. Sanders Holle (Geology); Donald F. Schwartz (Ecology)

Programs and Facilities

Students working towards master's and doctoral degrees in the Department of Paleontology, Geology, Geography, and Statistics and Actuarial Science may develop programs of study that fulfills the requirements of the Quaternary studies aspect of the Quaternary studies. Students with interests in Quaternary studies are encouraged to broaden their programs with coursework in the biological sciences as they progress toward a degree in their chosen field.

Research by faculty and students includes paleoecological and paleoenvironmental studies using pollen, vascular-plant macrofossils, biophytos, molluscs, insects, and vertebrates; studies of fluvial geology, geomorphology, and stratigraphy; stratigraphy, soil stratigraphy, and geomorphology; pollen-eospecies of reeds and shrubs; studies of wetland distribution, productivity, and ecology; studies of hunter-gatherer societies and their environments; and studies of cultural development and its relation to environmental changes.

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

Facilities available on campus include both trailer-mounted and hand-held X-ray devices, laboratories for fieldwork, and terrestrial remote-sensing devices, laboratory for radiocarbon analysis, pollen preparation, vegetation preparation, artificial preparation, X-ray equipment, optical microscopy, and scanning electron microscopy. Both archaeologists and the University's Wieg
Computing Center are accessible to graduate students and faculty. The Museum of Natural History and individual departments have a number of important reference collections, including the Palaeontological Repository (two million specimens including both vertebrates and invertebrates) and the Herbarium (over 250,000 specimens in vascular plants and about 45,000 specimens of bryophytes). The Office of the State Archeologist houses the State Archeological Repository, with over half a million specimens. Other specialized collections of more than 2,000 birds and fruits and more than 1,600 pollen types are available in the geology department. Departmental branches of the library have extensive holdings of books and journals in the botany, zoology, and geology departments, and the Office of the State Archeologist has a library as well. Students may design programs that result in a degree from one of the cooperating departments but that involve considerable course work, research, and consultation with one or more other departments. A weekly seminar, the Quaternary Brown Bag, provides a forum for discussion of research topics in Quaternary studies.

Financial Support
Teaching and research assistantships are available on a competitive basis from each of the departments involved. To apply, students should contact the department directly for more information.

Related Units
Although not directly connected with the Office of the Vice President for Research, these units have a special role in the conduct of research at the University.

Institutes
Downs Institute for Dental Research Contact the College of Dentistry for information.
Financial Markets Institute Contact the College of Business Administration for information.
Industrial Relations Institute See the College of Business Administration section of the Catalog.
Institute for Economic Research See the College of Business Administration section of the Catalog.
Institute for Insurance Education and Research See the College of Business Administration section of the Catalog.
Institute of Agricultural and Occupational Health See "Preventive Medicine and Environmental Health" in the College of Medicine section of the Catalog.
Institute of Hydraulic Research See the College of Engineering section of the Catalog.
Institute of Public Affairs See the Continuing Education section of the Catalog.
Isa B. McClendrey Institute of Accounting Research Contact the Department of Accounting in the College of Business Administration for information.

Centers
Alzheimer's Disease Research Center Contact the College of Medicine for information.
Allergy and Asthma Disease Center Contact the College of Medicine for information.
Cancer Center See the College of Medicine section of the Catalog.
Cardiovascular Research Center See the College of Medicine section of the Catalog.
Center for Health Services Research See the College of Medicine section of the Catalog.
Center for International and Comparative Studies See the Graduate College section of the Catalog.
Center for Laser Science and Engineering Contact the College of Engineering for information.
Center for Materials Research Contact the Department of Biomedical Engineering in the College of Engineering for information.
Center for New Music See "Music" in the College of Liberal Arts section of the Catalog.
Center for the Book Contact the Office of the Associate Vice President for Cultural Affairs for information.
Center for the Study of Recent History of the United States Contact the College of History in the College of Liberal Arts for information.
Centers for Computer Aided Engineering See the College of Engineering section of the Catalog.
Clock Pulse Research Center Contact the College of Medicine for information.
Clinical Research Center See the College of Medicine section of the Catalog.
Cochlear Implant Research Center Contact the College of Medicine for information.
Comparative Legislative Research Center See "Political Science" in the College of Liberal Arts section of the Catalog.
Cosmic Bella National Center for Gifted Education Contact the College of Education for information.
Core Center: Diabetes and Endocrinology See the College of Medicine section of the Catalog.
Craniofacial Anomalies Research Center Contact the College of Medicine for information.
Cystic Fibrosis Research Center Contact the College of Medicine for information.
Dietetic Disease Core Center Contact the College of Medicine for information.
Iowa Center for Communication Study See "Journalism and Mass Communication" in the College of Liberal Arts section of the Catalog.
Iowa Geriatric Education Center Contact the College of Medicine for information.
Iowa Urban Community Research Center See "Geology" in the College of Liberal Arts section of the Catalog.
Manufacturing Productivity Center Contact the College of Business Administration for information.
Mental Health Clinical Research Center Contact the College of Medicine for information.
Midwest AIDS Training and Education Center Contact the College of Medicine for information.
National Maternal and Child Health Resource Center Contact the College of Law for information.
National Resource Center on Family Based Services Contact the School of Social Work in the College of Liberal Arts for information.
Oral and Maxillofacial Implant Center Contact the College of Medicine for information.
Science Education Center Contact the College of Education for information.
Small Business Development Center Contact the College of Business Administration for information.
PROJECT ON RHETORIC OF INQUIRY

Project directors: Donald N. McCloskey, John S. Niles.

The Project on Rhetoric of Inquiry (PORO) involves students and faculty from across the campus in studies of rhetoric throughout scholarship and culture. PORO regards rhetoric as its ancient sense, as the whole art of argument. Its purpose is to improve persuasion in the arts, humanities, sciences, and professions.

PORO's executive committee coordinates the project initiative, working with faculty in University of Iowa colleges. In addition, an international board of distinguished scholars advises the committee about its programs, which include the Faculty Rhetoric Seminar, conferences and workshops, and publications, and fellowships for Iowa postgraduates and visiting scholars.

The biweekly Rhetoric Seminar was founded in 1960 by a small group of Iowa faculty. The group grew to include some one hundred colleagues, who participate in a year-round interdisciplinary dialogue and other seminars in philosophy and engineering. Before each seminar, PORO distributes discussion papers to faculty from many University of Iowa departments and from other colleges in Iowa.

The National Endowment for the Humanities has funded a series of five workshops for 1960-1992, and other workshops are planned. The project in print is published as "The University of Wisconsin Press" (some 15 volumes in print) and the University of Chicago Press.

The project also sponsors lectures and research projects by local and visiting faculty. Iowa faculty associated with PORO's various projects teach both undergraduate and graduate courses in rhetoric at the University. A graduate certificate program is being planned. More information, including summer course lists, is available from the Office of the Project on Rhetoric of Inquiry.

IOWA LAKESIDE LABORATORY

The Iowa Lakeside Laboratory, a field station for the biological and physical sciences on Lake Okoboji, Iowa, is the site of a cooperative program in teaching and research carried out under the auspices of Iowa State University, The University of Northern Iowa, and The University of Iowa. Two terms of five weeks each are held during June, July, and August. Facilities for undergraduate research are available. (See listing for "Iowa Lakeside Laboratory" in the Iowa City sections of the Catalog.)

UNIVERSITY LIBRARIES

University librarian: Claudia C. Clark

Librarian: Barbara I. Dewey, Wayne Ridley, C. Edward Stresser

Facilities and budget: William S. Skaggs, Robert B. Wachtel, Janet Elizabeth A. Ford, A. Jolly Templeman

Bibliographic staff: Ann M. Allen, Janie N. Brown, David T. Lowrey, Cassandra Meris, Donna O. Thune, Nancy L. Wettke, Elizabeth Wettke

Journals coordinator: Nels B. O'Brien, John R. Mahoney

Cataloging: David A. Amundson, John D. Dodds, Grace A. Fitzgerald, Lawrence R. Gartman, Judith K. Horne, Karl E. Keller, Janet S. Lewis, Bevers S. Mitch, Mary E. Miller, George P. Mulderrig

Mary F. Mills, Thelma R. Neece

Christian Isaac Morris, Avard Maggert

Richard G. Anderson, Donald W. Roberts, Ansel B. Robinson

Government publications: Carol M. Webber, Steve Davis, John W. McManus


Serials: Burt E. Christ, Mary Hubbell, Charles E. Leitman, Michael G. Way

Special collections: Robert A. McCloskey, Joan Redman, Richard H. Reil, Far L. Rogers, David E. Robey

Departmental libraries: Helen L. Sellard, etc.


The University's Main Library and its 11 departmental libraries, plus the Law Library, contain more than 3 million volumes. Departmental library buildings:
at: art, 72,000 volumes, biology, 37,000; business administration, 24,000; chemistry-biology, 77,000; engineering, 86,000; geology, 44,000; mathematics, 44,000; music, 74,000; physics, 43,000; and psychology, 52,000.

The Harvard Library for the Health Sciences contains 220,000 volumes, and the Law Library, which opened in the College of Law, contains 484,000.

Special Resources

With more than 3 million volumes, the libraries at The University of Iowa make up the largest library system in Iowa. Among 196 university research libraries in the United States and Canada, the system ranks twenty-eighth in number of volumes held and thirtieth in expenditures for library materials.

The Main Library, its 11 departmental libraries, and the Law Library, contain more than 11 acres of space, provided seating for more than 1,000 readers, and have more than 70 miles of shelving for collections.

Recent statistics show that library staff annually check out nearly 1 million items to faculty, staff, and students; record 1,252,000 in-building uses of library facilities and other materials; and answer nearly 150,000 questions.

University Libraries has recently embarked on a comprehensive user education program to improve awareness of its resources and services and instruction in their use. In 1988, more than 1,200 people participated in programs such as subject-based faculty workshops, course-related instruction, on-campus training, and reference consultations. Special programs included workshops for international students, programs for faculty in the Iowa National University Institute for Forensics, and programs on
library use for student activities. The Hardin Library for the Health Sciences provides Medicine training for individuals who want to do their own computer searches.

In addition to holdings of books, periodicals, and access to numerous electronic databases, the libraries provide some 4 million microfilms (microfiche, microcards, and microfilm) and microfiche (as well as various other formats, including maps, video recordings, and sound recordings. Also available are information resources in compact disc form, six CD-ROMs containing text and facsimile data, and facsimile data can do computer searches on a wide variety of topics. Information online database searching is available by appointment.

The Muskie Library serves as the principal repository for the social sciences and the humanities. Located within this building are four various special collections. The Government Publications Department holds nearly 15 million microfilm copies and more than 10 million microform items. At a full U.S. Government Depository Library, it automatically receives thousands of items published by the federal government. This department is also a state of Iowa depository, a European Communities (Common Market) repository, and a United Nations Depository. The Map Collection contains more than 100,000 map sets and 150,000 special topographies, and 10,000 cataloged manuscript centers. This department also manages the University's Special Collections Department, which has over 146,000 items, including works on the culinary arts, a major collection of Lincoln material, a rare collection of the history of hydrostatics, and a large collection of maps of the United States.

The Health Sciences Libraries house a special collection of rare and classical medical and dental works in the John Martin Rare Book Room. Named after the principal donor, the collection includes rare works that are not in the main library, rare research facilities, and service agencies to prepare, refine, and to serve the wide variety of human needs ranging from basic needs and the care of advanced diagnostic and treatment procedures—and to search for new knowledge.

As soon as they have secured basic knowledge in their field, health profession practitioners begin to focus on training the excellent examples and directions of skilled practitioners who teach vital wellness and health care for thousands of patients from the community, state, and region. University of Iowa Hospital and Clinics is approximately a center of learning and service. It is one of the most advanced, comprehensive health science centers in the United States. It shares many skills of the comprehensive care system with other Iowa colleges and community colleges and through a variety of continuing education programs for health practitioners—many of whom also come to the Iowa campus to update their knowledge by enrolling in continuing education, courses, and workshops. The University's programs, facilities, and courses of the Colleges of Medicine, Nursing, Pharmacy are described in other sections of the Catalog. Other health center and related programs are described below.
to care for approximately 2,200 patients each day. The hospital’s clinical staff includes 515 faculty physicians and dentists, and the house staff numbers 615 resident and fellow physicians and dentists. The hospital’s Department of Nursing is studied by more than 1,500 professional nurses.

Other hospital staff members annually provide more than 200,000 X-ray examinations and treatments, conduct nearly 5.5 million laboratory tests, fill more than 2.5 million prescription orders, provide more than 65,000 physical therapy treatments, and prepare more than 33,000 blood and component transfusions. Recent modernization provided new intensive care, cardiology, roentgen, and urology units. The seventh-floor, Boyd Tower addition went into service in 1976, providing expanded and replacement facilities for a variety of inpatient and outpatient services. The Roy J. Caver Pavilion, named in recognition of a gift from the late Muscatine industrialist, provides facilities for a multispecialty trauma and emergency treatment center, physical therapy department, orthopedic, urologic, and neurosurgical inpatient units, clinics, and faculty offices; surgery and internal medicine inpatient units; cardiology and psychiatry clinics; and laboratories of the Department of Pathology.

The John W. Cockerill Pavilion—named for the hospital’s current director—opened in 1982. It consolidates services of the Department of Pediatrics in the Iowa Children’s Health Care Center and provides clinical space and facilities for the Department of Surgery. The Cockerill Pavilion also houses a new center for the study of diabetes, diabetes research center, cardiac care center, and outpatient surgery center. In 1989, a Patient and Visitor Activities Center, including a library, medical museum, lounge area, and inpatient dining area, began services. A phase of the Cockerill Pavilion, which included inpatient and outpatient construction, will provide new surgical suites. The John Pappajohn Pavilion, currently under construction, will provide adult and child psychiatric care accommodations as well as a new psychiatric emergency diagnostic and treatment center, and a new ambulatory care clinic inpatient and ambulatory patient clinic and inpatient accommodations for some 257 cancer patients daily.

Clinical departments of University Hospitals and Clinics collaborate in conducting, accredited health professional education programs in dentistry, radiologic technology, medical technology, nuclear medicine technology, hospital pharmacy, physical therapy, occupational therapy, and cytotechnology. University Hospitals and Clinics have developed a number of clinical settings for Keough Community College programs, including clinical nursing and respiratory medicine for the ambulatory care clinic, and the University conducts inpatient and outpatient programs with the public health dental hygienists of the Iowa Department of Public Health. These programs include instruction in oral hygiene, good dental health practices, a fluoride rinse program, and nutrition related to dental health. The bureau also supplies dental referral cards to schools to remind parents of the need for regular dental care for children.

**Dental Service**

The College of Dentistry Dental Clinic provide comprehensive dental care in conjunction with dental education and research. Private care by faculty and graduate students is available in addition to clinic care. Anyone, including employees and students of the University, may receive dental treatment at the college. However, the College of Dentistry is not affiliated with the University Student Health Service and does not render services under the student health hospitalization fund.

The Dental Clinic operates on a fee-for-service basis payable at each visit. Payment can be made by cash, check, or credit card. Because clinic treatment takes longer than private treatment, the patient’s contribution is in the amount, and the fees have been adjusted downward accordingly.

**Health Occupations Education**

Through this program, the University collaborates with the State Board of Education to provide comprehensive curriculum and instructional materials for health occupations programs conducted for the first time in Iowa’s area community colleges, but by also a growing number of high schools. The Health Occupations Education staff also assists these institutions in their important role in continuing education.

**Hardin Library for the Health Sciences**

The Hardin Library for the Health Sciences serves the educational and research needs of the colleges of Dentistry, Medicine, Nursing, and Pharmacy; the Graduate Program in Hospital and Health Administration; and the Department of Speech Pathology and Audiology. The largest of the departmental libraries in the University library system, the Hardin Library contains more than 220,000 volumes and receives more than 2,200 periodicals. In addition to providing ample space for these collections, the interior allows for enough reading and study space to accommodate approximately 1,100 people. Special features of the library range from comprehensive health sciences literature, via self-service terminals and librarian-mediated searches of
University (State) Hygienic Laboratory

As the state of Iowa's environmental and public health laboratory, the University Hygienic Laboratory offers diagnostic, surveillance, analytic, training, and consulting services in areas such as infectious disease, immunology, parasitology, industrial hygiene, virology, bacteriology, health physics, mycology, and radiation chemistry. It prepares comprehensive laboratory programs to the State Department of Health, Bureau of Labor and Department of State, and Geological Survey.

In the environmental area, the laboratory provides a wide variety of services related to water, wastewater, hazardous waste, and air-quality monitoring and analyses; pesticide and biocides analyses; mineral and metal analyses.

The Hygienic Laboratory services Iowa's entire primary laboratory for drinking water analyses and is one of only 35 laboratories in the nation certified to perform analyses for biohazardous waste sites under the USEPA Superfund Program. It is an accredited industrial hygiene laboratory and holds anlicensee license for the diagnostic services involved in blood lead screening and screening for blood and tissue metals in the newborn and for the AIDS virus.

Within the University of Iowa, the Hygienic Laboratory provides instruction and training in diagnostic microscopy and cytology as part of regular academic courses, as well as in environmental engineering studies. In addition, the Hygienic Laboratory provides classroom and individual training to University students and to laboratory and medical personnel interested in learning specific laboratory procedures. Laboratory staff members also are available to University faculty, health care workers, and students for technical consultation.

Specialized Child Health Services

The Iowa Specialized Child Health Services is an organization that administers several statewide health services for children. Among these are the Genetic Consultation Service, Cerebral Palsy Prevention Program, Cystic Fibrosis Program, Childhood Cancer Diagnostic and Treatment Program, and Regional Comprehensive Care Program for Neionia's Patients. The Statewide Perinatal Care Program, Iowa Medicar Screening Program, and Community Child Health Center Program, and a program of Regional Child Health Specialty Centers.

At Regional Child Health Specialty Clinics (CPC) rendered in conjunction with other hospitals, residents are provided with diagnosis and evaluation services in pediatric infectious diseases, cytology/syphilis, pathology, audiology, physical therapy, nutrition, and clinical and educational psychology. CHSC also supplements a University of Iowa graduate training program in anatomy and speech pathology and provides consultation and follow-up services on special health problems related to handicaps such as muscular dystrophy, mental retardation, phenylketonuria, and hemophilia.

University Hospital School

A University-affiliated program that deals with the problems of developmentally disabled children and young adults, the University Hospital School serves as the point of activity for the Division of Developmental Disabilities within the Department of Pediatrics. It is an integral part of the tertiary-level health services available through The University of Iowa Hospitals and Clinics.

The interdisciplinary team approach provides services involving the fields of medicine, dentistry, nursing, nutrition, speech and language pathology, and occupational therapy, recreational therapy, psychology, social work, special education, and vocational and technical activities.

Outpatient services provide comprehensive evaluation and follow-up of infants, children, and young adults who have problems and disabilities that affect their development. Programs or education and therapy are planned in conjunction with the patient, when appropriate, and with the parents. Inpatient services are provided through the inpatient services providers. The outpatient services include a number of special clinics (Child Development, Autistic Spectrum Clinic, Metabolic Disorders Management Clinic, Infant and Young Child Clinic, Child and Young Adult Clinic) in which specialty trained staff address specific problems.

Infants, children, and young adults may be admitted to the inpatient unit as a result of recommendations from one of the outpatient services. Short-term admissions are for medically specific problems that can best be accomplished on an inpatient basis. The staff coordinates educational services with the child's local school system in order to maintain continuity of services while the child is in this unit.

Training activities include pre- and in-service lectures, workshops, practicum, and seminars for a variety of care providers working in other health care community programs. These activities take place in the University and community setting.

University Hospital School cooperates closely with the state Developmental Disabilities Council and other state agencies to provide training and technical assistance to their programs.

Laboratories of the Division of genetics and biochemistry of the Department of Pediatrics are used extensively in University Hospital School research, training, and service programs.
Wendell Johnson  
Speech and Hearing Clinic

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

Veterans Affairs Medical Center

Medical students and residents receive much of their clinical training in the 527-bed medical center, a comprehensive health care facility in Iowa City. Veterans Affairs Medical Center facilities utilized by The University of Iowa Health Center include, but are not limited to, laboratories for the transplantation program; highly specialized laboratories in surgery and medicine to support on-site research; and extensive support for the study of metabolic and gastroenteric diseases. The Veterans Affairs Medical Center, which is closely affiliated with all four University health sciences centers, provides an excellent training opportunity in clinical pharmacology, gastroenterology, cardiology, nephrology, oncology, and applied immunology.

The Iowa Center for the Arts

Located along the west bank of the Iowa River on the University of Iowa campus, the Iowa Center for the Arts is a major cultural attraction not only for the University community, but for the people of the state and region. The center, which celebrated its 50th anniversary in 1986-87, realizes a University dream of many generations: to bring the arts together in a single campus setting, near the geographical heart of the University.

The arts center facilities include many of the academic arts units in the Colleges of Liberal Arts, together with performance and exhibition space on the Theatre Building, Music Building, School of Art and Art History, the Museum of Art, and University Auditorium, the center's largest performing arts venue.

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

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

School of Art and Art History

The University of Iowa School of Art and Art History has been a pioneering force for art in America for more than half a century. The original art building dates from 1896. Major additions were added in 1960-61, greatly extending classroom and studio space and providing a new wing for ceramics, metalsmithing, and sculpture.

A small gallery within the building, used primarily for the display of works by students and visiting artists, named for artist Eva Drezlowski, who in 1951 became the first recipient of the Master of Arts degree in studio art at The University of Iowa.

The school's Corliss Gallery, multimedia studio, and video art studio are located in the Internationist Center. New and experimental works are presented through exhibitions, lectures, live concerts, and performances that emphasize new concepts and directions in contemporary art. Visitors and artists are thus brought a wide range of ideas to students and artists.

Museum of Art

As one of the two largest art museums in Iowa and the major art institution supported by the state, The University of Iowa Museum of Art (UMA) recognizes its responsibility to serve a varied state-wide audience. Although its primary constituency is the University community, the museum's comprehensive collection attracts both national and international audiences as well as visitors and young people from across the state.

The UMA collection of more than 10,000 objects has three notable strengths: the nineteenth- and twentieth-century European and American paintings and sculpture; works on paper, and African art. Paintings and sculptures number some 600, including Pollock's M自动, Rockefeller's Ararat, and Matisse's 1909 (Draped Woman) Falling from the Wings of a Bird. Important works by American, Mexican, Latina, Muret, Noguchi, Judd, and Rody. The museum's 4,000 prints include impressions by Whistler, Cassatt, Rembrandt, Poussin, LaMont, and Goya; its collection of drawings represents artists from Boucher to Rubens.

The Stanley Collection, which features more than 500 examples of art from central, east, and west Africa, represents the entire sub-Saharan continent. A gift of the late Barbara and Stanley Moeller, the collection is one of the most prized collections of the museum.

Secondary categories of the museum's permanent collection include 375 pieces of European and American contemporary ceramics, 400 fifteenth- and sixteenth-century European paintings, 20 Oceanic, 900 Middle Eastern, and 250 New American objects; and a small but significant collection of Oriental art.

The museum presents an average of 15 special exhibitions per year as well as continuous rotation of the permanent collection. At any one time, the galleries provide a variety of substantive and educational experiences for viewers of all ages offering shows that range from the scholarly and aesthetic to the popular.

Museum special events include slide-talks by visiting artists, scholars, and collectors; "Music in the Museum," a monthly concert series, and "Perspectives," a weekly program of performances, demonstrations, discussions, and debates. Museum docents lead groups on guided tours. The museum's exhibitions, catalogues and many of its publications are available for purchase. Memberships are available in a private support group, sponsors reception, openings of exhibitions, and active print, drawing, and ethnographic study clubs.

The University of Iowa Museum of Art provides an outstanding example of enrichment of the arts through generous private support.

In the early 1960s, Owen and Louise Elliott of Coralville, Iowa, provided the University its extensive collection of nineteenth- and twentieth-century paintings, prints, and sculpture, numbering more than 1,000. The Eli Lilly Foundation and a private support group, sponsors reception, openings of exhibitions, and active print, drawing, and ethnographic study clubs.

The University of Iowa Museum of Art provides an extraordinary example of enrichment of the arts through generous private support.

The museum opened in 1969 and quickly earned recognition as one of the nation's finest university museums. A gift from the late industrialist Ray Kroc, the museum's permanent exhibit space. The museum opened in 1969 and quickly earned recognition as one of the nation's finest university museums. A gift from the late industrialist Ray Kroc, the museum's permanent exhibit space.
University Theatres

University Theatres is the production unit of the Department of Theatre Arts, a pioneer in the study of all aspects of theatrical production. Emphasis is placed on the development and production of new and experimental works.

University Theatres welcomes all persons wishing to participate in the theatrical production. Information about the productions is available at the departmental office in the Theatre Building.

The Theatre Building is one of the finest educational theatre complexes in the country, housing three theatres and up-to-date facilities for rehearsal, laboratory, shop, and performance work. The E.C. Mazer Theatre, a continental-tent, 417-seat proscenium playhouse, is one of the finest small theatres in its type in the United States. Theatre A is a "black box" production space with flexible seating units that accommodate from 140 to 220, permitting quick modification of voice-audience relationship. The third theatre, seating 144, is an open-stage theatre dedicated primarily to the production of new and experimental works from the Playwrights Workshop.

All three theatres are equipped with state-of-the-art lighting and sound reproduction systems. Several shops for building, painting, maintenance, and costume design are also available for student use.

School of Music

Opened in 1971-72, the School of Music is spacious and convenient. The broad range of teaching and performance facilities includes two recital halls and to the stage of Hancher Auditorium.

In a given year, faculty artists and student ensembles present about 155 major concerts and recitals. Workshops and instrumental recitals are presented by students.

Clasp Racial Hall, with its hard-covered Casparian track organ, seats 720 for classic concerts. The Sharon Hayes Hall is both a classroom and the setting for many recitals. The school's largest ensemble, the symphony orchestra, bands, Opera Theatre, and chorus perform regularly in Hancher Auditorium. The Opera Studio, opened in 1983, is the scene for smaller productions of the Opera Theatre.

The school has produced six operas since 1918. Like other major stage presentations, opera is interdepartmental in its opportunities for educational and performance experience, utilizing the talents and resources of other units of the Iowa Center for the Arts, particularly dance.

The School of Music is at the forefront of innovation in the arts, creating and performing works in new forms. Its Center for New Music, originally founded by the Rockefeller Foundation, is a laboratory and ensemble of the compositions of student and member students of the Center for New Music, free from restriction for the performance of both new compositions and masterworks of the twentieth century.

Two experimental music studios provide a wide range of technical capability for creative audio-electronic work, including computer-generated music. Works created in the studios are presented with other student compositions in an annual series of performances by the Composers' Workshop, a program of the School of Music. Outstanding recording facilities link the various performance spaces of the School of Music/Hancher Auditorium complex with a reference recording studio in the School of Music.

Hancher Auditorium

Hancher Auditorium is a regional cultural resource of the first magnitude. The 2,675-seat facility opened in 1972 and in its first 17 seasons has hosted audiences of more than 2.5 million people. The auditorium is fully accessible to the handicapped and provides wheel chair seating. Hancher also has installed a hearing augmentation system, which is available free of charge to patrons who are hearing impaired.

The diversity of Hancher's programming appeals to the broad range of tastes in the region and within the University community. In recent years such world-famous artists as Isaac Stern, Shlomo Mintz, David and Katharine Battle have performed at Hancher. As have stars of opera and dance, including Eugene Ormandy, Laura Anderson, and Philip Glass. National touring companies regularly perform the Broadway hits. In 1987 1988 performances of Les Arts Merveilleux toured as Hancher boxed office records.

Hancher has highlighted international performers, including the electrolytic Japanese drummers for the Okei Company of Bengal, and the North African play lya Sine from the West African to the Peking Opera and the Peking Arial. Hancher presents the full range of the world's performing arts.

Hancher also has been an active catalyst for artistic creativity. In 1987, the auditorium co-produced the Jeffrey Arthur's new production of The Antichrist, which had its world premiere at the Hancher stage. The auditorium also has commissioned important new works for The David Parsons Dance Company, The Paul Director Ensemble, Nevada quartz, and the Laura Dean Dance. It has been the primary sponsor of the Iowa Dance Residency Program, which has brought important dance companies for extended residencies including workshops, master classes, and performances in communities throughout the region.

The auditorium has a Midwestern eyebrows. Various comedy, a café and gift shop, excellent acoustics, and a surprising intimacy in its interior design make it one of the foremost concert halls in America. But it is much more than a showcase. It also is a splendid educational plant, designed as an extension of the classroom and laboratory facilities of all of the performing units of the Iowa Center for the Arts.

For students of the various theater arts, the auditorium has a spacious scene construction and costume shops, nearly 50 sets of rigging for scenery changes, and a state-of-the-art lighting and control system. For music students, Hancher is an on-the-premises concert hall.

The stage itself is an excellent educational resource. Its proscenium is 70 feet wide. With its adjustable wings, the stage area is 175 feet long, 55 feet deep, and right stories high. Modular units of a concert shell can be installed quickly on stage for various concert requirements. University students are entitled to purchase tickets at reduced prices. Non-Resident patrons regularly attend auditorium events, from a wide region in Iowa and western Illinois.

Arts Education/Outreach Program

Cultural projects and programs that utilize the talents of faculty or student artists and other resources of the Iowa Center for the Arts are available to Iowa communities through the Arts Education/Outreach Program. Intended to share the University's cultural and educational resources with the state, the program is designed to encourage and enable communities to serve a variety of constituencies, including colleges, schools, arts councils, concert associations, museums, churches, centers for senior citizens and the handicapped, service organizations, and other special community organizations.

Consistent with the University's resources, the educational outreach programs are tailored to meet local needs and interests. In addition to programming throughout the state, the Iowa Education/Outreach office schedules on-campus conferences, workshops, performances for area audiences, and other educational projects.

Dance Department

The Dance department, housed in Hancher Hall, enjoys some of the finest facilities in the nation. It maintains two classrooms, an audio/video computer room, a library, and a 250-seat theatre in North Hall. Teaching
responsibilities are shared by seven full-time faculty and four to five professional assistants. Nearly 80 percent of the technique classes are accompanied by a staff of two full-time and four part-time professional assistance members and a full-time technical director attends to all of the department’s production needs.

Students in the department have many opportunities to perform during the year. The University of Iowa touring company Dance to Go (in collaboration with the Arts Education/Outreach Program), the Iowa Dance-Gala held in Hancher Auditorium, locally, student and student concerts in the Dance Department’s SpacePlace, theater, the School of Music spring opera, summer musical theater in cooperation with the Department of Theatre Arts, and community performances.

Teaching opportunities for graduate and undergraduate students can be found within the Arts Outreach Program Young Dancers Program, Saturday Dance Forum, Saturday and Evening Class Program, and graduate teaching assistantships.

By scheduling nearly every nationally known company to perform in its theater, Hancher Auditorium is an invaluable resource for dance students, enabling them to see performances, observe rehearsals, and take master classes from touring companies.

For the past eleven years, the department has participated in the American College Dance Festival Association (ACDA) and has hosted them in 1983 and 1986. The University of Iowa is a host for the U.S.-China Exchange Program, which brings Chinese dancers and dance educators to the campus, and for that period has been host to the Swiss Swiss Choreographic Competition for emerging Midwest choreographers.

Broadcasting and Film

A division of the Department of Communication, Broadcasting and Film fosters creative work in the visual arts, its instruction with the Department of Theatre in other units of the Iowa Center for the Arts, and they enjoy a national audience. For example, a music video based on the School of Music production of Schubert’s “Winterreise” has been shown on the Fox/ESPN cable television channel; other videos have been produced for jazz artists.

Writing Programs

A longtime program of special distinction is the Department of English, the Writers’ Workshop provides opportunities for talented writers to work and learn from established poets and novelists. The International Writing Program brings accomplished writers of many nationalities to the University for extended periods of new writing and translating their works into English and other languages. These writing programs are renowned in many countries and have won widespread private support from Americans and from corporations, individuals, and the U.S. State Department.

Winthrop Press

The arts of making books by hand—such as handmade paper, hand-drawn illustrations, hand-set type, and hand-operated presses—may be learned in the workshop of the Winthrop Press. The Winthrop Press is one of the nation’s small company of distinguished hand presses. Its limited editions are frequently cited for their excellence by the American Institute of Graphic Arts, whose prestigious competitions include all of the major publishers in the country.

MUSEUM OF NATURAL HISTORY

The museum, located in MacBride Hall, is an outgrowth of the Cabinet of Natural History, established in 1809 by an act of the Iowa General Assembly. It is the oldest university museum west of the Mississippi River.

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

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 multimedia exhibits linked by space, theme, and time, illustrating Iowa’s natural heritage—its geology, native cultures, and ecology. Exhibit highlights of Iowa Hall include the Glacial-knife joints diorama, Des Moines River, Mississippi River, and a life-size reconstruction of an Ice Age giant ground sloth.

In First Hall, the Lavan bird display is a large and well-known bird habitat exhibit comprising a complete representation of a bird island of the Hawaiian group. Other habitat exhibits include the Bering Sea, Lake Superior, the migration, and coves of the South Dakota prairie. The crane exhibit includes both the sandhill crane and the red salping crane as they appear on the prairie during migration. Mammal Hall exhibits feature wildlife, bees, prototype, undecorated bone, and giant panda, as well as the bird’s eye view of the ancient American right whale.

Other exhibits include examples of the life cycles of plants. A historical exhibit is a history of the natural history of the world. The exhibits focus on the history of natural history from America, Asia, and Europe.

The Museum of Natural History also supports informal outreach programming to area schools and sponsors a weekend lecture and field trip series for the general public.

OLDCAPITAL

Iowa’s Old Capitol, a National Historic Landmark, is central to the University campus. It was the capital of the Territory of Iowa from 1836 until 1885, and the capital of the state of Iowa from 1846 until 1877, when the government moved to Des Moines and gave Old Capitol to the University as its first permanent building.

Various University offices and departments have been located in Old Capitol through the years. It housed the office of the University president continuously from 1860 to 1950, when the president’s office was relocated in preparation for the construction of the new Old Capitol as a historic site.

The structure retained the structure of the three periods of its use: the territorial government period, the state government period, and the University’s long use of the building, represented in rooms of 1920s decor. Old Capitol was reopened in 1979 as a “living museum.” Guided tours and a public presentation are offered daily without charge. Reservations are required for group tours.

OTHER SERVICES

Evaluation and Examination Service

The Evaluation and Examination Service’s assessment program and examination unit are designed to assist testing students in course selection. The Examination Service also provides registration information and administration of local and national test programs including the American College Testing Program (ACT), College Level Examination Program (CLEP), Medical College Admission Test (MCAT), Graduate Record Examination (GRE), Aptitude Test,
University of Iowa Foundation
The University of Iowa Foundation was organized in 1926 to help the University obtain the greatest possible educational benefit from giving. The foundation is the principal channel for private gifts to The University of Iowa through annual giving programs, endowment, and capital gifts. The foundation is the principal channel for private gifts to The University of Iowa through annual giving programs, endowment, and capital gifts. The foundation is the principal channel for private gifts to The University of Iowa through annual giving programs, endowment, and capital gifts. The foundation is the principal channel for private gifts to The University of Iowa through annual giving programs, endowment, and capital gifts. The foundation is the principal channel for private gifts to The University of Iowa through annual giving programs, endowment, and capital gifts. The foundation is the principal channel for private gifts to The University of Iowa through annual giving programs, endowment, and capital gifts. The foundation is the principal channel for private gifts to The University of Iowa through annual giving programs, endowment, and capital gifts.

The University of Iowa Press
The University of Iowa Press was established in 1957 to publish significant works of original scholarly research and outstanding creative writing. The press operates voluntarily by the University Editorial Advisory Board, composed of faculty members and students approved by the vice presidents for educational development and research.

Office of University Relations
The Office of University Relations (OUR) works to promote understanding of, participation in, and respect for 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 coordinates the University administration on University relations matters and serves 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 President's Office, University News Service (UNS), and University Relations Publications. Unsuspectable staff who specialize in coverage of the performing arts, the health sciences, and women's interdisciplinary arts as well as general news, broadcast news, and photography units. These units supply Iowa, photos, and information in 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 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 unresolvable through existing channels. The ombudsperson investigates claims of unfair treatment or errors, 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
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Dean: Gerhard Lienert
Associate Dean for Academic Programs: James R. Lavorga
Associate Dean for Development and Research: Paul S. Harty
Associate Dean for Faculty: Judith P. Alls
Director of Libraries: Ivan L. Leche
Liberal Arts

Honors Program

The College of Liberal Arts 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 levels, most departments offer honors seminars, independent research, and the opportunity to pursue a senior project under the guidance of a faculty mentor. Successful completion of a senior honors project leads to a baccalaureate degree "with honors" in the major (see "Graduation with Honors" in this section of the Catalog).

The Sherborne House Honors Center is a meeting place and study center for students in the honors program. It houses a reference library, study rooms, and computer terminals. Each year the Associate Dean Honors Students plan a variety of activities—recreational, social, cultural, and academic. Honors students with strong academic records are invited to join the honors program, but any student whose grade-point average meets the required minimum (3.30) may join at any time. For further information, contact the College of Liberal Arts Honors Program, Sherborne 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.), and Bachelor of Music (B.M.) degrees.

Major Fields

The college permits degrees as indicated in the following: B.A. and B.L.S. degrees are awarded with no major designations.

Academic courses—B.S.*

African-American world studies—B.A.

American studies—B.A.

Ancient civilization—B.A.

Anthropology—B.A.

Art—B.A., B.F.A.

Asian and African studies and literature—B.A.

Asian studies—B.A.

Astronomy—B.A., B.S.

Biochemistry—B.A., B.S.

Biology—B.A., B.S.

Biology—B.A., B.S.

Classics—B.A.

Communication studies—B.A.*

Comparative literature—B.A.
Computer science—B.A., B.S.*
Dance—B.A., B.F.A.
Dental hygiene—B.S.
Economics—B.A., 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 occupations education—B.A., B.S.
History—B.A.
Interdepartmental studies—B.A.
Italian—B.A.
Journalism and mass communication—B.A., B.S.*
Latin—B.A.
Leisure studies—B.S.*
Linguistics—B.A.
Literature, science, and the arts—B.A.
Mathematics—B.A., B.S.
Microbiology—B.S.
Music—B.A., B.M.
Philosophy—B.A.
Physical education—B.A., 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.
Science education—B.S.
Social studies—B.A.
Social work—B.A.*
Sociology—B.A., B.S.
Soviet and East European studies—B.A.
Spanish—B.A.
Speech and hearing science—B.A., B.S.
Statistics—N.S.
Theatre—B.A.

*Students who wish to major in actuarial science, athletic training (as option within the B.S. in physical education), communication studies, computer science, elementary education, exercise science, journalism and mass communication, leisure 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 majors to one of these fields at any time after enrollment. In order to be allowed in the courses for an education major or certification, the student must be admitted to the teacher education program (TSP).

To be admitted to the TSP, a student must have attained sophomore standing (30 semester hours) and must have earned a total cumulative grade-point average of at least 2.50. Transfer students who meet these standards may apply to the TSP upon admission to the University. In order to remain in the TSP, a student must maintain a 2.50 total cumulative grade-point average and a 2.50 grade-point average at The University of Iowa.

Application forms for admission to the TSP are available from the Office of Registrars, Services in the College of Education. For more information, see the College of Education section of the Catalog.

Double Majors

A student may meet 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., B.A. in history and English or B.S. in psychology and 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, broadcasting and film is offered in the Department of Communication Studies, and urban and regional planning is offered in the Department of Geography. Specializations in Chinese, French, Japanese, or Spanish are available to students seeking a B.A. in Asian languages and literatures. The School of Art and Art History and the School of Music have many different tracks leading to bachelor’s degrees. Studio emphasis, art history emphasis, and art education, performance, composition/ theory, music history, jazz studies, music education, and music therapy. These are only a few examples of the many options within degree programs. Other specializations can be developed with 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 specialization, 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 various social sciences departments.

For more information on specializations within and between programs, see the program descriptions in the Catalog and advisories in the appropriate departments.

Certificates

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

Certificates require from 18 to 27 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 of the University. Most minors require a minimum of 15 semester hours of course work. The general requirements for minors are described under “Requirements for 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), African-American studies (B.A. or minor), aging studies (minor or certificate), American studies (B.A. or minor), ancient civilization (B.A. or minor), comparative literature (B.A. or minor), global studies (minors, certificate, or honors interdisciplinary major), interdepartmental studies (I.D.), international business (certificate), Latin American studies (minor or certificate), literature, science, and the arts (B.A.), philosophy and ethics of politics, law, and economics (certificate), science education (B.A.) Soviet and East European studies (B.A.) and women’s studies (minor).

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

Honors Interdisciplinary Major

Honors students may pursue an individually planned major in an area of study that draws on courses in two or more academic departments, as approved by the honors advisor from the departments concerned and the director of the College of Liberal Arts Honors Program. The major consists of 36 semester hours of credit, including a semester hour 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 interdisciplinary programs developed by honors students are environmental studies; European studies; international development studies; literature, history, and philosophy; and methodological social sciences.

Baccalaureate with Early Admission to Medicine or Dentistry

Students who are working toward a baccalaureate degree from the College of Liberal Arts may apply early admission to The University of Iowa College of Medicine or College of Dentistry if they plan to enter accredited medical or dental school in the United States that offers advanced degree.

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

- Satisfied the General Education Requirements;
- Completed the requirements for a major. Earned at least 90 semester hours as an undergraduate;
- Satisfied the residency requirement of the College of Liberal Arts;

Students who have successfully completed the first year of medical or dental school are admitted to the College of Liberal Arts. Students who plan to enter an advanced degree program at The University of Iowa are considered for admission to the College of Liberal Arts. The College of Liberal Arts has an Early Admission Program for students who plan to enter an advanced degree program at The University of Iowa.

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. (Bachelor of Science in Engineering) by the College of Engineering and a B.A. (Bachelor of Arts), B.S. (Bachelor of Science), B.F.A. (Bachelor of Fine Arts), or B.M. (Bachelor of Music) by the College of Liberal Arts.

Students in this combined program usually are able to meet the baccalaureate degree requirements of both colleges in about five academic years. The exact length of time necessary to complete the program is determined by the major area of study selected in each college. Students who enter the combined degree program are assigned two faculty advisors, one by 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 assistant in 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 General Education Requirements and the requirements for the major in the College of Liberal Arts. It is crucial that students enroll in the proper mathematics and engineering courses early in their study to ensure the completion of their programs. The specific engineering courses selected by students vary according to the engineering major selected. Students are advised to keep abreast of new scientific, mathematical, humanistic, and social science courses that are available regularly for credit by two colleges. Students may be able to satisfy the requirements of both colleges by taking a particular course.

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

Combined Degree Program: Medicine and Liberal Arts

Students may earn two University of Iowa baccalaureate degrees in a combined curriculum program in the Colleges of Medicine and Liberal Arts. Although students begin their academic program in the College of Liberal Arts, they must be eligible by admission to College of Medicine upon completion of courses in medical technology, nuclear medicine technology, or physician assistant.

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

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

Two Bachelor's Degrees

Students who wish to earn two different bachelor's degrees at the same time in the College of Liberal Arts must complete 30 semester hours beyond the 158 required for a single degree, for a total of 184 semester hours, besides satisfying the requirements for both degrees. The B.G.S. and B.L.S. may not be awarded simultaneously with another degree.

Students who already have been awarded a bachelor's degree from the College of Liberal Arts and are not enrolled in a graduate or professional program may earn an additional, different bachelor's degree. The degree will be awarded by the college and must complete at least 30 additional semester hours of study in residence in the college beyond the first degree.

Students may not earn a second B.A. if they already have a B.A. from the College of Liberal Arts, but may earn a second B.S. if they already have a B.S. from the college. Instead, these students should consider completing a second major (see "Returning for a Second Major," below).

Holders of B.A. or B.S. degrees in liberal arts disciplines are considered to have satisfied all or General Education Requirements except foreign language. Holders of other degrees must satisfy the General Education Requirements.

Students with bachelor's degrees from other colleges or universities may earn a baccalaureate degree from the College of Liberal Arts by meeting the requirements described above.

Total Hours Earned

Students who enter as beginning freshmen shall earn a minimum of 124 semester hours of credit. The number required of a transfer student is indicated on the student's admission graduation progress report.

Satisfactory Grade-Point Average

The general requirements for graduation are based on the quality as well as the quantity of work completed.

Candidates for the B.A., B.S., B.F.A., and B.M. degrees shall be graded on the following requirements for graduation by earning a minimum grade-point average of 2.00 in all college work attempted, all work unuplicated at The University of Iowa, and all work attempted in the major field, including 2.00 in all University of Iowa major work.

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

Candidates for the B.I.S. degree must earn a grade-point average of at least 2.00 in all college work supplemented with grades in the major field of course work completed after admission to the program, and all upper-level course work.

Residence

Students must satisfy the College of Liberal Arts residence requirement. This may be met by earning the final 20 semester hours in residence, or by earning all 90 semester hours in residence, or by earning 45 of the final 60 semester hours in residence, or the student must complete the last 30 semester hours in residence.

Nonresident instruction includes course work at other colleges and universities, course work done while the student is enrolled in other undergraduate colleges of The University of Iowa, and all work by correspondence, including courses of the University of Iowa, for the Grade Correspondence Study course.

B.I.S. students are not subject to the residence requirement but must earn at least 30 semester hours of credit at The University of Iowa after they are admitted to the program.

Students in the combined degree programs in the Colleges of Engineering and Liberal Arts must complete at least 90 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.I.S., and B.M. degrees. Unit score follows the prescribed course of study that fulfills most General Education requirements. See "Unified Program," below.

Rhetoric: one or two COMP 144 (4.5 hrs.)
Mathematics: for students who first enrolled at the University before fall 1999, see "Mathematics," below.

Physical Education: four courses (4.5 hrs.) B.I.S. students are exempt from this requirement.

Foreign Language: fourth semester level in college language or fourth-year level of high school language (0-4.5 hrs.)

Foreign Civilization and Culture: one approved course (3 hrs.)

Historical Perspectives: two approved courses (6 hrs.)

Humanities: literature and two approved courses (9 hrs.)

Natural Science: two approved courses, one of which shall have a laboratory component (7.5 hrs.)

Quantitative or Formal Reasoning: one approved course (3-4.5 hrs.)

Social (science) two approved courses (6 hrs.)

The Unified Program

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

Rhetoric

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

All transfer students, regardless of the number of hours they transfer, must satisfy the Rhetoric requirement. The Rhetoric requirement may be completed in one of the following ways:

By passing 101 and 102 Rhetoric (8 hrs.)
By passing 105 Rhetoric (4 hrs.)
By passing the speech test and 106 Rhetoric (3 hrs.)
By passing the essay test and 126 Principles of Speech Communication (3 hrs.)

By passing both the essay and speech tests.

Proficiency Examinations

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

Students with Documented Learning Disabilities

Students who have undergone formal medical testing by the Office of Services for Persons with Disabilities and who are found to be learning disabled in Rhetoric may request reasonable accommodations in order to complete the Rhetoric requirement satisfactorily. Such accommodations must be arranged by the Office of Services for Persons with Disabilities and approved by the Department of Rhetoric.

Mathematics

Students who enrolled at The University of Iowa for the 1987-88 or 1988-89 academic year must satisfy a mathematics requirement. The requirement may be met 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, 117 Schottner Hall.

Physical Education

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

By completing four 1-semester-hour courses in physical education skills (1041 or 1042), for a total of 4 semester hours,
By completing 1045 (3 hrs.) and two 1-semester-hour courses in physical...
education skills, for a total of 4 semester hours.

Students also may earn exemptions from part or all of the requirement by passing tests in specific physical education activities (See below).

Only courses 10.42, 10.43, and 10.45 may be used to satisfy the requirement. Each course is graded satisfactory/unsatisfactory. 10.41 and 10.44 are skills courses, and scores under these numbers reflect activity or sports titles and levels of proficiency. 10.41 designates courses that meet for the first half of the semester or for the first eight-week summer session; 10.42 designates those that meet for the second half of the semester or for the second eight-week summer session. 10.45 Fitness and Wellness for Life (2 cr.), a lecture-discussion course, meets for the entire semester. Students who take it (and more than likely satisfy the remainder of the requirement by taking two 1-semester-length skills courses or exemption tests.)

If a student repeats the same skills course or takes a 10.10 elementary one, the Office of the Registrar assesses a penalty for extra duplication or regrading. It recommends incompletes or using the second-grade-only option. students must complete or retake the same activity or sport at the same level.

Exemption Tests

Students may be awarded exemption from part or all of the physical education requirement for successful completion of 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 1 semester hour of the physical education requirement. Academic credit is not awarded, only completion. The test, see "Physical Education Tests" in the nearest Schedule of Classes.

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 (lab sports, rec activities).
By achieving Junior Eligibility (60 sch.) before admission to The University of Iowa in physical education.
By earning enough credit in physical education at love 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 the twenty-eighth birthday before the day of their graduation are excused from the physical education requirement.

Veterans

Veterans may be exempted from this requirement by permission of the Office of the Registrar official evidence of having completed a basic training program in one branch of the armed forces.

B.L.S. Students

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

Foreign Language

The foreign language requirement may be satisfied by high school courses, college courses, continuation of high school and college courses, or satisfactory performance on a proficiency examination. All degree candidates who enter the University in fall 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.

By earning an achievement test measuring proficiency equivalent that usually attained after four semesters of college study.

B.L.S., B.F.A., B.G.S., and B.M. candidates who entered The University before fall semester 1990 and who will graduate by August 1994 may satisfy the fourth-semester requirement described above or a second-semester requirement, whatever is available in the Office of Academic Programs, 116 Schaeffer Hall.

B.L.S. candidates who entered at The University of Iowa for the first time after fall semester 1990 and who will graduate by August 1997 are exempt from the foreign language requirement.

Foreign Language Placement

Entering transfer students are required to take a University of Iowa foreign language language placement test in high school. The requirement is waived for students who have completed a 1-semester-long course in a language that is the major language of a country in which students study. This requirement may be waived for students with a foreign language major or minor. Students who have learned a foreign language for personal reasons are exempt from this requirement.

Students may be exempted from the foreign language requirement by submitting evidence of previous language study, such as a standardized test score, a foreign language test score, or a letter from a former teacher or language instructor. Students may also be exempted from the foreign language requirement by demonstrating proficiency in a foreign language through a foreign language proficiency test administered by the Office of Academic Programs. These tests may include written and oral language proficiency examinations, which may be administered by the appropriate department.

Students must register for an appropriate course on the basis of their foreign language placement test results.

Effective Fall Semester 1991

Students who register for the first-time at the University in fall 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.

By earning an achievement test measuring proficiency equivalent that usually attained after four semesters of college study.

B.L.S., B.F.A., B.G.S., and B.M. candidates who entered The University before fall semester 1990 and who will graduate by August 1994 may satisfy the fourth-semester requirement described above or a second-semester requirement, whatever is available in the Office of Academic Programs, 116 Schaeffer Hall.

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Students must register for an appropriate course on the basis of their foreign language placement test results.

Effective Fall Semester 1991

Students who register for the first-time at the University in fall 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.

By earning an achievement test measuring proficiency equivalent that usually attained after four semesters of college study.

B.L.S., B.F.A., B.G.S., and B.M. candidates who entered The University before fall semester 1990 and who will graduate by August 1994 may satisfy the fourth-semester requirement described above or a second-semester requirement, whatever is available in the Office of Academic Programs, 116 Schaeffer Hall.

B.L.S. candidates who entered at The University of Iowa for the first time after fall semester 1990 and who will graduate by August 1997 are exempt from the foreign language requirement.

Foreign Language Placement

Entering transfer students are required to take a University of Iowa foreign language language placement test in high school. The requirement is waived for students who have completed a 1-semester-long course in a language that is the major language of a country in which students study. This requirement may be waived for students who have learned a foreign language for personal reasons are exempt from this requirement.

Students may be exempted from the foreign language requirement by submitting evidence of previous language study, such as a standardized test score, a foreign language test score, or a letter from a former teacher or language instructor. Students may also be exempted from the foreign language requirement by demonstrating proficiency in a foreign language through a foreign language proficiency test administered by the Office of Academic Programs. These tests may include written and oral language proficiency examinations, which may be administered by the appropriate department.

Students must register for an appropriate course on the basis of their foreign language placement test results.

Effective Fall Semester 1991

Students who register for the first-time at the University in fall 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.

By earning an achievement test measuring proficiency equivalent that usually attained after four semesters of college study.

B.L.S., B.F.A., B.G.S., and B.M. candidates who entered The University before fall semester 1990 and who will graduate by August 1994 may satisfy the fourth-semester requirement described above or a second-semester requirement, whatever is available in the Office of Academic Programs, 116 Schaeffer Hall.

B.L.S. candidates who entered at The University of Iowa for the first time after fall semester 1990 and who will graduate by August 1997 are exempt from the foreign language requirement.

Foreign Language Placement

Entering transfer students are required to take a University of Iowa foreign language language placement test in high school. The requirement is waived for students who have completed a 1-semester-long course in a language that is the major language of a country in which students study. This requirement may be waived for students who have learned a foreign language for personal reasons are exempt from this requirement.

Students may be exempted from the foreign language requirement by submitting evidence of previous language study, such as a standardized test score, a foreign language test score, or a letter from a former teacher or language instructor. Students may also be exempted from the foreign language requirement by demonstrating proficiency in a foreign language through a foreign language proficiency test administered by the Office of Academic Programs. These tests may include written and oral language proficiency examinations, which may be administered by the appropriate department.

Students must register for an appropriate course on the basis of their foreign language placement test results.
Transfer Credit in Natural Sciences

Students may transfer up to two semester hours of acceptable course work at another college or university for the requirement.

Credit by Examination in Natural Sciences

Students who wish to take the requirement for credit must pass a satisfactory examination at the University of Iowa. The examination will consist of a 2-hour exam and must be taken during the Fall semester of the first year of enrollment.

Quantitative or Formal Reasoning

This requirement may be satisfied by completing one of the courses listed below or by completing a more advanced course at another college or university. Students must complete the requirement within the first three years of enrollment. Students who do not complete the requirement within this time frame may take an exam to demonstrate proficiency.

General Education Requirements

This course is required for all majors in the College of Liberal Arts and Sciences.

Restrictions and Waivers

No course may satisfy any General Education Requirements in the College of Liberal Arts and Sciences.

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 any one department to satisfy the General Education Requirements in the area except physical education and foreign language.

Course descriptions:

Course titles and descriptions are available in the current Schedule of Courses and in the departmental sections of the Catalogue.
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 the following: mathematics, physics, chemistry, or foreign language requirements. Academic credit is not awarded.

Exemption or waiver of academic credit may be awarded for any exempt course or examination announced by the College-Level Examination Program (CLEP) in the following General Education Requirement areas: Psychological, foreign language, historical perspectives, humanities, natural science, quantitative or formal reasoning, and social studies. Specific information about the duplication of credit for APP and CLEP is available from the Office of the Registrar and Placement Services.

Transfer Students

Transfer students who have taken courses elsewhere that are similar to those approved for general education at Iowa may count toward the General Education Requirements. Acceptance of these courses is based on the student's minimum graduation program requirements. Students who transfer less than enough hours to meet a General Education Requirement may use only-approved courses to complete the minimum of the requirement.

Students with A.A. Degrees

Students who receive A.A. degrees from Iowa Area Community Colleges or any other approved Iowa Community College program are considered to have met all General Education Requirement requirements. However, the program of study for which the A.A. degree was awarded must include the following:

A minimum of 66 semester hours (90 quarter hours) in courses acceptable toward graduation; mathematics courses compare with 22M1 Basic Algebra I, 23M2 Basic Algebra II, and 23M3 Basic Geometry are not acceptable toward graduation.

Completion of the agreed-upon group of courses at the community college.

A grade-point average of at least 2.00.

Students who use the provisions of the articulation agreement must meet a maximum of 62 semester hours of credit from Iowa Area Community College toward the 124 semester hours required for a bachelor's degree at Iowa. If a student has earned more than 62 semester hours of credit in completing the A.A. degree, the student's credit is used in computing the grade-point average and may be used to satisfy credit requirements, but the credit does not count toward the bachelor's degree.

Representatives from the community colleges and the Regents universities meet annually to review the provisions of the articulation agreement.

Restrictions and Limits on Semester Hours Applied Toward a Degree

A maximum of 16 semester hours of credit with a grade of 'D' (pass) and 18 with a grade of 'D-' (credit/no credit) is accepted toward the 124 semester hours required for graduation.

Students who studied at The University of Iowa for the first time before summer session 1987 may count a maximum of 16 semester hours of credit through the second-semester-only option toward graduation, but only through May 1992. After that, they will be limited to a maximum of three courses.

Students who completed the University of Iowa for the first time during summer session 1987 and after may apply any semester hours of credit by correspondence from all approved sources toward the 124 semester hours required for graduation. B.S. students are not subject to this restriction.

A maximum of 52 semester hours of credit by correspondence from all approved sources is accepted toward the 124 semester hours required for graduation. B.S. students are not subject to this restriction.

A maximum of 30 semester hours of credit earned in other colleges of the University of Iowa may be accepted toward the 124 semester hours required for graduation from the College of Liberal Arts. Undergraduate courses in the College of Education are exempt from this rule.

A student has earned 62 semester hours of college 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 studied more than 62 semester hours of college credit from a two-year college, the credit and grades are used in computing the grade-point average and may be used to satisfy course requirements, but the credit does not count toward the total hours needed for graduation.

A maximum of 50 semester hours of credit from one academic department is accepted toward a B.A. or B.S. or toward the B.G.S. or B.A. in interdisciplinary studies. This includes less University of Iowa and transfer course work.

Courses towards the required major in the major.

A maximum of 16 semester hours of credit by examination may be applied toward the major.

Double Majors

Students may earn a single bachelor's degree with two or more majors if they meet the requirements for each major and if the department or program offers the double-degree in the College of Liberal Arts. For example, a student may earn a B.A. in history and English or a B.S. in psychology and sociology.
When a single department offers a degree in more than one subject area (such as physics and astronomy in Spanish and Portuguese), students may earn a major, a minor, or two minors providing these degree programs. All students must earn a minimum of 56 semester hours in courses taken outside that 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 56 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.A. 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 on their application, and register as seniors (A4).

Students who return to the University to complete a second major must meet only the requirements of that second major; they need not meet the residence requirements. It is the student's responsibility to apply to graduation 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 may return to the University to complete the requirements for a second major developed outside of their liberal arts minor.

Minors

Liberal Arts Minors

Students graduating from the College of Liberal Arts may earn a minor or minors in any degree-granting program in the college outside of their major field or at another college of the University. The minor may relate directly to the major or may allow a student to follow an interest entirely different and separate from the major.

Requirements

The requirements outlined below are the general requirements for a minor in the College of Liberal Arts. Requirements for specific minors are described in the departmental sections of the Catalog. A minimum of 15 semester hours must be taken in the minor department or program.

At least 12 of the 15 semester hours must be taken at The University of Iowa in advanced courses acceptable to the academic unit granting the minor. Neither transfer credit nor credit by examination is accepted toward the 12 semester hours of advanced work. 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.

No course accepted toward the minor may be taken pass/unsigned.

Guidelines

Each academic unit determines which courses are advanced. Undergraduate students seeking information about acceptable courses should consult 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 may inform the Office of the Registrar of their 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 the permanent record.

Students who already have earned a bachelor's degree from The University of Iowa and have not completed another 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 also be used to satisfy the General Education Requirements.

Course work applied toward the minor also may be used to satisfy core cognate requirements for the major. Cognate requirements are those courses outside of the major department that are required as part of the major.

University of Iowa Guided Correspondence Study 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 6 semester hours from their major department towards the minor.

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

Candidates for the B.G.S., B.A. in interdisciplinary studies, or B.S. are not eligible to earn minors.

The following degree-granting programs do not offer minors in humanities: English, German, history, philosophy, world civilization, political science, pre-law, and interdisciplinary studies in urbanism, science, and the arts; art education; social studies; and speech and hearing science.

Liberal Arts Minors for Students in Business Administration, Buttoning, 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. Engineering students interested in minors in physics, chemistry, or enamet with may add the courses required in the engineering curriculum to satisfy the minor requirements in these three areas. For other restrictions, see appropriate college sections of the Catalog.

Minor in Business Administration

Students in the College of Liberal Arts who pursue a minor in business administration. The courses listed below satisfy all requirements for the minor. At least 15 academic hours must be completed at The University of Iowa. Students are encouraged to take a maximum of a 2.00 in all courses taken for the minor. In all these courses taken at Iowa.

A computer programming course (88, 70, 282, 232C, 125-126, 282C, 157, 157E) 3 s.h.

Business calculus course (22M 145, 22M 17, 22M 25, 22M 50) 3 s.h.

Statistics (27145, 27125, 125, 125); (271, 225, 225, 120, or 317-142) 3 s.h.

62:1 Principles of Microeconomics 3 s.h.

62:6 Principles of Macroeconomics 3 s.h.

64:1 Introduction to Financial Accounting 3 s.h.

64:2 Managerial Cost Accounting 3 s.h.

64:2 Market Behavior 3 s.h.

64:10 Introduction to Marketing 3 s.h.

64:10 Introduction to Financial Management of 57-14 3 s.h.

64:10 Administrative Management 3 s.h.

*Must be taken in Junior or senior year.

Accelerated Professional Track

For superior students in the College of Liberal Arts who plan to continue for a Master of Business Administration (M.B.A.) degree at The University of Iowa, the accelerated professional track offers an alternative to the business minor. Students pursue an undergraduate degree in a field of business interest while taking M.B.A. foundation courses. Upon receiving the bachelor's degree, students enter the Graduate College to complete the 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. For specific requirements, call or visit the Office of Student Services in the College of Education.

Registration

Registration Period

The fall two weeks of the fall and spring semesters are the designated periods for registration. Students register according to a rotation based on the last digit of their identification number and on the number of semester hours earned. The first day of the rotation is reserved for students who have earned 72 or more semester hours; students with fewer than 72 semester hours earn registered during the remainder of the period.

Late Registration

Students are not permitted to register after the second day of instruction. Students may register according to a rotation based on the last digit of their identification number and on the number of semester hours earned. The first day of the rotation is reserved for students who have earned 72 or more semester hours; students with fewer than 72 semester hours can register during the remainder of the period.

Classification of Students

Students are classified according to the following schedule:

<table>
<thead>
<tr>
<th>Rank</th>
<th>Hours Earned</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freshman</td>
<td>0-29</td>
<td>A1</td>
</tr>
<tr>
<td>Sophomore</td>
<td>30-59</td>
<td>A2</td>
</tr>
<tr>
<td>Junior</td>
<td>60-89</td>
<td>A3</td>
</tr>
<tr>
<td>Senior</td>
<td>90 or more</td>
<td>A4</td>
</tr>
<tr>
<td>Special</td>
<td>nondegree</td>
<td>A9</td>
</tr>
</tbody>
</table>

Changes in Registration Initiated by the Student

Adding and Dropping Courses

During the registration period, students need only a advisor's approval to change courses selected earlier in the registration period. Once classes have begun, courses may be added during the first three weeks of the semester (or the first one and one-half weeks of the summer session) with the signatures of both the advisor and instructor on a Change of Registration form. Courses may be dropped at any time during the first two weeks of the semester (or first one and one-half weeks of the summer session) without the approval of the advisor and the instructor.

Changes in Variable and Arranged Courses

Students who have earned credit for courses entitled for variable or arranged credit may change the number of semester hours according to the rules for adding and dropping courses. Students may increase the number of semester hours during the first three weeks of the semester (or first one and one-half weeks of the summer session) and may decrease the number during the first three weeks of the semester (or first two weeks of the summer session) by a maximum of five semester hours, a student drops the course and adds it for the desired hours.

Withdrawal of Registration

Students may withdraw registration at any time before the end of the fifth week of the semester or sixth week of the summer sessions. No credit is given for the semester or session. Students who withdraw registration may be removed after the deadline for that session. Withdrawal cards may be obtained in the Office of the Registrar.

Student Responsibility

Students must initiate changes in registration, obtain the proper signatures on the proper forms, and submit the forms to the Registration Center. Before the deadline the confirmation that charges have been made is the revised Course-Selection printout generated at the Registration Center.

Instructor's Option to Drop for Nonattendance

To provide vacancies in crowded classes, instructors may drop students who have not attended any class session during the first eight calendar days of the semester (or three calendar days of the summer session), unless the student has offered acceptable reasons for not attending the class. The provision is for the benefit of students who otherwise would be unable to enroll in certain crowded classes. It should not be used when these circumstances do not exist. These drop requests must be made to the Office of Academic Programs, 1st Schaffer Hall. The Registration Center notifies each student dropped from a course and the student's advisor.

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 without paying the regular tuition for the number of semester hours. Audit permission is granted by the instructor of the course and the adviser.

Instructors assign the mark of R (registration) if the student's attendance and performance are satisfactory. If they are unsatisfactory, the mark of W (withdrawal) is assigned. Courses offered only for zero credit are graded R/W. Courses offered for zero credit as well as for credit hours, when elective, are graded A/W. Audited courses not completed with a mark of R do not count toward requirements and carry no credit toward graduation.
Policies for Plus-Minus Grading

The grading system was expanded to include plus and minus grades effective with the grades of fall 1987 and spring 1988. The following policies govern the use of plus minus grading in the College of Liberal Arts.

The use of plus and minus is optional. Departments and individual instructors are free to use the old system (with the 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 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 used must be the same in all sections of a multi-section 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 points;
(b) dividing the grade points earned to date, and
(c) dividing the sum in (b) by the number of grade attempts, excluding courses in which grades of I, N, O, P, R, S, or W have been earned.

Grades of F are included in hours attempted and are used in computing the GPA. Although grades of A+ have a value of 4.33 in calculating a study GPA, the course GPA displayed at the bottom of the permanent record is rounded so as not to exceed 4.0.

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 independent study, is small; the work is unfinished for reasons acceptable to the instructor; and the student's standing in the course is satisfactory. Courses may not be repeated to remove incompletes. Incomplete grades must be removed, by completing the unfinished part of the work.

The work must be completed and submitted to the course instructor three and one-half weeks before the close of the examination 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 that date results in an F being assigned for each incomplete.
No Grade Reported (O)
A grade of O is assigned by the Office of the Registrar to a student whose failure to turn in his or her schedule to report a grade or report an invalid grade.

The O designation is a student's permanent record and is changed to a valid grade according to the procedures for incompletes described above. Failure to remove the O on the designated deadline will result in an F being assigned for that course.

Pass/Nonpass Option (P/N)
Students in the College of Liberal Arts have the option of taking elective courses on a P/N basis. The instructor assigns a standard grade on all courses, which is converted automatically in the Office of the Registrar. Grades of A, A-; B, B+; B-, C, C- are converted to P, grades of D+, D, D-, and F are converted to N.

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

Students may register for P/N beginning the first day of classes through the end of the third week of the semester (not one and one-half weeks of the semester session). For courses that start or end at times other than the beginning and end of the semester, students may register for P/N at any time during the first one-fifth of the duration of the course. The signature of both the instructor and the advisor must be obtained on a P/N form, and the form must be submitted to the Registration Center before the deadline. A P/N registration may not be changed after the deadline.

Restrictions
Students on academic probation may not use the P/N grading option.

P/N grading may be used in elective courses only. Credit earned for grades of P/N is not counted toward the major.

A maximum of 12 semester hours of P/N grades from all colleges is accepted toward the baccalaureate degree. Transfer students admitted to the University with fewer than 60 semester hours of credit are limited to a maximum of 16 semester hours of P/N grades. Those students completing 60 or more semester hours are limited to 8 semester hours.

A maximum of two P/N courses may be taken in any session.

Satisfactory/Fail Grading (S/F)
Certain courses in the College of Liberal Arts are offered S/F and are 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 the 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 forms are not necessary to register for S/F courses, since all students enrolled in such courses automatically receive either an S or an F.

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

Second-Grade-Only Option
Students may repeat courses taken at The University of Iowa, unless those courses are designated as having only the grade and credit of the second grade. The marks for such courses must be submitted to the Registrar's Office 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.

P/N grading may be used in elective courses only. Credit earned for grades of P/N is not counted toward the major.

A maximum of 12 semester hours of P/N grades from all colleges is accepted toward the baccalaureate degree. Transfer students admitted to the University with fewer than 60 semester hours of credit are limited to a maximum of 16 semester hours of P/N grades. Those students completing 60 or more semester hours are limited to 8 semester hours.

A maximum of two P/N courses may be taken in any session.

A course taken through regular registration may not be replaced through Correspondence Studies (CSS) under the second-grade-only option. A course taken through CSS may be replaced through CSS or regular registration.

Students who enrolled at The University of Iowa for the first time before summer session 1989 may apply this provision to a maximum of 16 semester hours until May 1992. After that, they will be limited to a maximum of three courses.

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 advisers and to individual students, but delinquent grades are not recorded on the permanent record.

Grading Greviances
Grading grievances should be resolved with the instructor who assigned the disputed grades. If the student and instructor cannot resolve the matter, the student should discuss it further with the departmental executive officer or faculty members supervising a multisection course. The departmental executive officer will review the unresolved grading grievance with the dean of academic programs. The Office of Academic Programs publishes a handbook on grading grievances, which describes the procedures and restrictions.

Academic Probation and Dismissal
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 lose graduation unless their academic performance improves.

Probation
Through Summer 1992
Students must achieve the following minimum University of Iowa and total cumulative grade-point averages or they are placed (or continued) on probation.

Freshmen, (15-30 sh.), 1.60
Sophomores, (30-50 sh.), 1.75
Juniors, (50-69 sh.), 1.90
Seniors (5 sh. or more), 2.00

Beginning Fall 1992
Effective fall semester 1992, all liberal arts students will be held to the following standards:
Freemans (0-29 sh.) 1.70
Sophomores (30-09 sh.) 1.85
Juniors (40-49 sh.) 2.00
Seniors (90 or more sh.) 2.20
Special students (A&S) 2.00

Students on academic probation are required to good standing if their University of Iowa and total cumulative grade-point average equal or exceed the grade-point averages designated above. The pass/fail (P/F) grading option may not be used for students on academic probation; however, 5F courses are allowed.

Exempting freshmen and transfer students may be at their discretion if they fail to meet the minimum stated standards for admission (see "Admission Requirements," below).

Dismissal
Freemans admitted unconditionally (not on probation) are subject to dismissal from the college after one semester on academic probation. Freemans admitted on probation are subject to dismissal after two consecutive semesters on academic probation. Continuing students are subject to dismissal after two consecutive semesters on academic probation. Variances in poor academic work in any semester; however, may result in dismissal at the close of that semester.

Right to Appeal
Students who can document that their unsatisfactory academic records were the result of extenuating circumstances may appeal for a revocation of a dismissal. A student dismissal in January must appear in writing no later than 10:30 a.m. on the second day of spring semester classes. A student dismissed in May must 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 addressed to the Student Appeals Committee, Office of Academic Programs, 116 Schmitt Hall. The decision of the committee is final. No appeals are considered for revocation of a dismissal that would permit 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, Office of Academic Programs, 116 Schmitt Hall. An appointment with an administrator must be made and the interview must take place in person not later than 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.

Students who are permitted to register after the specified interval following a dismissal are registered on academic probation and ordinarily are allowed two semesters to achieve good standing. Very poor academic work in the first semester of a reinstatement, however, may result in dismissal at the close of that semester.

Notification and Records
Students placed on academic probation, continued on academic probation, or dismissed from the college are notified in writing of these actions by the associate dean for academic programs. Students admitted on probation have the notation "admitted on probation" entered on their permanent records. The notation "on academic probation" is placed on the permanent records of those students who have been placed on or continued on academic probation. "Not permitted to register" is entered on the permanent records of students who have been dismissed from the college. When reinstatement has been granted, "permitted to register" for a particular semester or session is entered on the permanent record.

Class Attendance, Final Examinations, and Student Conduct

Class Attendance

Individual instructors, course chairs, or departments determine the policy on class attendance. Students are required to observe the regulations as announced for the course. However, University policy requires that students be permitted to make up examinations missed because of ill health, mandatory institutional obligations, or other unavoidable circumstances or University activities.

Excused Absences

For permission to be absent from class to participate in authorized University activities, students are expected to present each to the instructor before each absence a written statement signed by a responsible official specifying exactly the dates and times it is necessary to miss class. Excused absences are granted to members of athletic teams, the marching band, debate teams, and other recognized University groups and to participants in University field trips. Participation in the National Guard also is considered an authorized activity.

Students who are absent for medical or personal reasons are expected to present evidence to verify the reason. Students report absences from class of five days or less by completing an "Explanatory Statement of Absence from Class" form available at the Registration Center, and by presenting the form to instructors. Students who are absent for more than five days must notify the Registration Center to avoid notification of the absence to each instructor.

Final Examinations

A suitable period for the administration of examinations is set each week at the end of each semester, during which time no classes are held. With the exception of any changes authorized by the associate dean for academic programs, all final examinations must be given as announced in the Schedule of Courses. During the summer session, there is no designated final examination period. final examinations are scheduled before the official end of the summer session, either during a regular meeting time or at a time determined by the instructor of the course in consultation with the student in the class.

For more complex discussions of policies concerning final examinations, see the college's Classroom Manual.

Student Conduct

Plagiarism and Cheating

All cases of plagiarism and cheating in the college should be reported to the Office of Academic Programs. The associate dean for academic programs or the committee on Student Academic Conduct may, in the case of severe or repeated offenses, recommend to the instructor and the student Academic Conduct Conduct may impose, as offense may warrant, the following or other penalties: disciplinary probation, suspension from the college, or recommendation of expulsion from the University by the president.

Forgery

The Code of Student Life prohibits forgery of University documents, such as the student identification cards. The Office of Academic Programs investigates students suspected of forgery and takes disciplinary action based on its findings and recommendations provided by the instructor or instructor.

Misconduct

Students who are disruptive in a classroom or laboratory may be dealt with summarily by the instructor or referred to the dean of student services. The instructor reports in writing to the dean of student services any disciplinary action undertaken against a student.
Recognization for Academic Achievement

Dean's List
Liberal arts students who achieve grade-point averages of 3.50 or above during a given semester or 12 or more semester hours of graded work (excluding University of Iowa Guided. Correspondence Study courses) and who have no hours of 'I' (incomplete) or O (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 grade point; 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.

To be eligible for either form of recognition, students must complete the full 30 semester hours in residence in the College of Liberal Arts of the University of Iowa, of which at least 40 semester hours must have been completed prior to the student's 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 two highest three percent, and "with distinction" to the next highest five percent. Rankings based on students' grade-point averages for all college-level study undertaken prior to the final registration.

Graduation with Honors
The director of the College of Liberal Arts 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 are recommended 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 requirements; high school class rank or combined SAT score; 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 who present fewer than 24 semester hours of transferable credit to complete either the American College Test (ACT) or the Scholastic Aptitude Test (SAT) before they register for classes. These examinations are used as a criterion for admission, for placement purposes, for scholarships, and for awards.

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 at the University. Students who enter with a strong college preparatory curriculum have a better chance to succeed academically and are more likely to be admitted to the degree program of their choice.

To qualify for unconditional admission to the College of Liberal Arts, applicants are required to have completed the following set of high school courses or their equivalents, in addition to the other requirements listed below. These high school unit requirements apply to entering freshmen who graduated after 1980 and transfer freshmen with fewer than 24 semester hours of transferable credit who graduated after 1985, and transfer students with 24 or more semester hours of transferable credit who graduate from high school in 1990 or after.

Four years of English language arts, with emphasis on writing, speaking, and reading as well as understanding and appreciating 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 biology, chemistry, and physics).

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

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

One year of the visual arts, performing arts, or both; and either a humanities (cinema, dance, drama, music, photography, studio art, theater, visual art, or music) or survey courses in the arts and humanities.

A fourth year of mathematics (analytic geometry, trigonometry, or calculus) and an additional two years of the same foreign language.

Students whose high school course work did not provide the courses necessary to meet the entrance requirements of the College of Liberal Arts may be admitted as candidates for the degree requirements if they meet the high school class rank or test score requirements for admission. As a condition of admission, such students are required to complete specified college-level courses with a grade of C- or better. With prior approval of the Office of Admissions, these courses may be taken at an accredited college, university, or community college. Credit earned in these courses does not count toward graduation from the University of Iowa. If the courses are taken at The University of Iowa, it is usually during the summer session immediately preceding fall semester to all costs, courses taken to remove deficiencies must be completed by the beginning 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 test score requirements. They must complete without delay one college-level foreign language course with a grade of C- or better.

Courses taken to remove deficiencies do not count toward the General Education Requirements, with the exceptions of rhetoric and foreign language.

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

Transfer Students
Transfer students with A.A. degrees from Iowa community colleges participating in the Iowa Community College/Regional Articulation Agreement are considered to have fulfilled the unit requirements.

Other students may use college courses taken previously to make up high school deficiencies. Courses must be completed with a grade of C- or better and the credit does not count toward graduation from The University of Iowa. Courses taken to remove deficiencies do not count toward the General Education Requirements, with the exception of rhetoric 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 may also remove deficiencies in English, mathematics, natural sciences, or social studies by earning acceptable scores on standardized tests.

Entering Freshmen

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

Graduates of approved 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 meet the high school class rank criteria are admitted if they meet a minimum admission index, which is calculated by multiplying the ACT composite score by 2 and adding the SAT instead of ACT scores. The minimum index for each entering class is fixed by the university. For Iowa residents it ranges from 981 to 100 and for nonresidents from 100 to 110.

Applicants who do not meet these standards may be considered for admission based on other characteristics that indicate definite promise of success. At the discretion of the admissions office, such students may be admitted unconditionally, admitted on probation, required to enroll for a one-semester period, or denied admission.

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

Admission without High School Graduation

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

Transfer Students

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

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

Transfer applicants who have a minimum of 24 semester hours of credit from regionally accredited colleges or universities and who have maintained a grade-point average of 2.00 (based on a 4.00 system) at all college work previously attempted, are admitted.

Students with fewer than 24 semester hours of college credit are considered for admission based on a combination of high school and college academic records and scores on the ACT or SAT. In general, transfer applicants under academic suspension from the last college attended are not considered for admission during the period of suspension, or if suspended for an indefinite period, are not considered until the suspension 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 disciplinary convictions. 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 accept credit from a nonaccredited college or may admit the applicant on a conditional basis and provide a means for the validation of some or all of the credit. The validation period is not less than one semester, ordinarily in the fall academic year. 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 applications for admission and supporting academic documents.

Automatic waivers from this policy are granted to persons who already have received a baccalaureate or equivalent degree from a university in the United States, the United Kingdom, Canada (excluding French Quebec), Africa (English-speaking), Australia, or New Zealand.

Foreign Students

Foreign applicants for the TOEFL scores below 500 are not considered for admission to the College of Liberal Arts. Admitted applicants whose TOEFL scores are 500 or higher may begin academic course work with no restrictions. Applicants whose academic credentials indicate that they should be admitted but whose TOEFL scores fall between 500 and 599 may be offered admission to the College of Liberal Arts. However, placement in regular academic courses is made only after the student's English language proficiency has been established on campus testing.

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 critical score of 1100 or above) and whose ACT English subscore is 21 or above (600 or above).

Nonresidents of Iowa whose ACT composite score is 25 or above (SAT critical score of 1190 or above) and whose ACT English subscore is 21 or above (600 or above)

Admitted applicants whose TOEFL scores are 500 or above may begin academic course work without restrictions. Those whose TOEFL scores fall below 600 are required to take an English language proficiency testing before they register for courses.

Applicants 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 Linguistics. If such evaluation warrants, students who required to enroll in credit-granting courses in English as a Second Language or in noncredit Iowa Intensive English Program until their language proficiency reaches the appropriate level. Once such proficiency has been established, students are allowed to take a full academic course load, exclusive of English as a Second Language courses. Such students may begin their academic work only upon the written recommendation of the coordinator of English as a Second Language. (Courses for non-native speakers of English are described under “Linguistics” in this section of the Catalog.)

Special (Nondegree) Students

Students may be admitted to the college as nondegree candidates. These students are classified as special students (SS) and may enroll in courses for personal enrichment, to prepare for admission to professional or graduate college, 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 dismissal. 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 are not required to file an application for re-entry, they should report directly to the Registrar's Center to begin the admission process.

Students who have been enrolled in another college or university after leaving The University and wish to transfer official transcripts along with their application for re-entry. Completed application materials must be received within 2 weeks before the opening of classes. Applicants accepted after that date are considered on an individual basis.

Students who have been dismissed from the college for unsatisfactory scholarship have earned a degree or the prior approval of the Academic Probation and Dismissal section of the Catalog.

Credit for Military Service

The admissions office is authorized to evaluate transcripts from the military services according to the recommendations contained in the American Council on Education's Guide to the Evaluation of Experiences in Military Service. Students are encouraged to contact their military service to arrange for a summary of their military service to be forwarded to the college.

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 used as elective credit or it may be applied toward the General Education Requirements or requirements in the major or minor. Credit awarded through the Foreign Language Incentives Program is considered credit by examination.

Placement and Exemption Examinations for General Education

Full or partial exemption from the requirements in rhetoric, mathematics, physical education, or foreign language may be awarded for satisfactory performance on tests administered at The University of Iowa. In addition, exemption and academic credit may be awarded in most general education areas for satisfactory scores on examinations administered by the Advanced Placement Program (AP) and the College-Level Examination 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 64 semester hours. Credit toward graduation is awarded to foreign language majors only for passing examinations covering the third-fourth and fifth-sixth levels above.

Credit by examination may not be applied to the 12 semester hours of advanced courses required for the major.

Advanced Placement Program (APP)

Students who pursue college-level learning while still in high school may use the APP testing program to demonstrate the level of achievement. This program was designed by the College Board to provide a means for colleges and universities to evaluate the college-level preparation of participating students and to provide opportunities for high school students to begin college-level study while still in high school.

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

Specific credit policies and further information is available from the University's Evaluation and Examination Service.

College-Level Examination Program (CLEP)

CLDP is an advanced placement testing program offered by the College Board that allows students to demonstrate college-level competence they have achieved outside of formal college instructional programs. General examinations cover broad content areas such as the humanities, natural sciences, and social sciences; subject examinations cover more narrow ranges of content, as typically dealt with in a single college course. Scores on the general examinations may be used to determine whether students have satisfied all or a portion of the General Education Requirements in the area(s) covered by the examinations taken. Those who earn a high enough score on a subject examination are eligible to receive credit for the corresponding University course. The CLEP program is administered by The University of Iowa Evaluation and Examination Service. Students who wish to participate in CLEP are encouraged to do so prior to the final exam period so that results can be used to plan their first semester schedule.

Specific credit policies and further information is available from the University's Evaluation and Examination Service.

Transfer Credit by Examination

The College of Liberal Arts accepts transfer credit that includes APP and CLEP credit awarded by another institution. Although the 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 noncredited institution or in a formal training program in which there is no standardized procedure for evaluation of credit may request the validation of this credit. The Office of Academic Programs and the department concerned should be consulted for approval to take the appropriate examinations.
Nondepartmental Courses
- 00030 Conditioning for Competition 0.0 h.
- 00031 Intracellulare Athletic Participation 1.0 h.
- 00032 Intercellular Athletic Participation 1.0 h.
- 00033 Intercellular Athletic Participation 1.0 h.

014, 015, 016 Physiology Lab 1.0 h.
Basic and advanced instruction in the students' chosen field, with a wide variety of lab and related topics and exercises. Provides necessary laboratory experience and permits. See current Schedule of Courses for titles and location.

10-011) Fitness and Wellness for Life 2.0 h.
Basic knowledge of the physiological bases of fitness and wellness programs and effects on laboratory session. GIS: physical education.

10-17 Human Biology (Lab) 1.0 h.
Basics of human biology as a basis for understanding the functioning of human biological systems. Course includes lectures and participation in the activities found in lectures. Laboratory work includes participation in the activities found in the lecture and participation in the activities found in the laboratory.

11-02 Ecology and Evolution 3.0 h.
Overview of the evolution and diversity of living things, their patterns on Earth, their organization in ecosystems, and the role of environmental processes: lectures, discussion. GIS: natural sciences.

AEROSPACE MILITARY STUDIES
Head: Lt. Col. Gary S. Sponaugle
Professor: Lt. Col. Gary S. Sponaugle
Assistant professor: Capt. Mark Dettl, Capt. John Booras

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. AFROTC students are not required to participate in AFROTC academic work that may be applied toward a degree, varies from college to college at the University.

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. Prior to commissioning, all AFROTC cadets must complete a course in the mathematics curriculum. Cadets on AFROTC scholarships must satisfy a requirement for an English composition course and for two or more seminars in a major field of study or American or Asian linguistics. The College of Liberal Arts General Education Requirements must be completed.

AFROTC offers two, three-, and four-year programs. Joining the program early gives students the opportunity to try AFROTC without obligations. It also gives them an advantage in the selection process for scholarships and POC membership.

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

Professional Officer Course
The professional officer course (POC) consists of four 3-credit-hour AFROTC courses. Students accepted into the POC make a commitment to serve a minimum of four years at the U.S. Air Force. To enter the POC, students must be selected to attend and must successfully complete field training. Students generally take the POC during their last two years in school.

Leadership Laboratory
The leadership laboratory is cadre centered and largely cadet planned. It provides leadership training that improves a cadet's ability to perform as a U.S. Air Force officer. To be considered a cadet, students must have completed at least one academic year as a cadet and in academic year Leadership Laboratory.

Field Training
All POC cadets must successfully complete field training at a U.S. Air Force base during the summer, usually between the sophomore and junior years. There are two types of field training: a six-week course for cadets who have applied to the three-year and three-year programs and a six-week course for two-year program applicants.

Field training consists of aircraft,crew, mission, and survival orientation and officer training; physical training; small team training; and equal opportunity training. The six-week field training provides 60 hours of academic work that a student normally would have taken as a freshman and sophomore.

Students receive authorized pay and allowances when they attend field training.

General Military Course
The general military course (GMC) consists of a 1-credit-hour course and a 2-credit course titled Leadership Laboratory during which cadets are introduced to the fundamentals and senior year college. Any student who meets AFROTC commissioning requirements and is in good academic standing with the University is eligible to participate in the GMC.

Special Activities
The Cadet Corps sponsors many social events, involving intramural sports, dinners, and a military ball.

Cadets can join the Arnold Air Society, a national professional honor society dedicated to developing leadership qualities and skills that are relevant to the community.

The advanced training program is a volunteer program in which selected cadets may go on active duty for two to three weeks during the summer following their junior year. Cadets get "hands-on" experience and receive authorized pay and allowances.

Cadets in AFROTC cadet may attend air force training and upon completion wear the air force parachute "jump wings."

Financial Aid
Scholarships are available, based on merit, for eligible AFROTC cadets. Scholarships include four-year and three-and-one-half 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 studies.

All cadets in the last two years of AFROTC receive $100 per month, tax-free. AFROTC books and uniforms are furnished.

Education Delay
Cadets may request an education delay before active duty until after completion of an advanced degree or professional training program.

Courses
2144 AFROTC Leadership Laboratory (GMC) AS 108-1 0.0 h.
A sequence of experiences designed to develop leadership ability, includes; leadership exercises, supervision, and commissioning, professional military leadership and drill and ceremony, and a student leader in a position, supervised military leadership training and training session. Complete. 2254.
2144 AFROTC Leadership Laboratory (GMC) AS 208-1 0.0 h.
See 2144. Offered field training. Complete. 2254.
2344 AFROTC Leadership Laboratory (GMC) AS 308-1 0.0 h.
See 2144. Offered spring semester. Complete. 2351.
2544 AFROTC Leadership Laboratory (GMC) AS 301-1 0.0 h.
See 2144. Offered fall semester. Complete. 2254.
2744 AFROTC Leadership Laboratory (GMC) AS 304-1 0.0 h.
See 2144. Offered spring semester. Complete. 2351.
2944 AFROTC Leadership Laboratory (GMC) AS 304-1 0.0 h.
See 2144. Offered spring semester. Complete. 2351.
2544 AFROTC Leadership Laboratory (GMC) AS 301-1 0.0 h.
See 2144. Offered fall semester. Complete. 2254.
2844 AFROTC Leadership Laboratory (GMC) AS 304-1 0.0 h.
See 2144. Offered spring semester. Complete. 2351.
2544 AFROTC Leadership Laboratory (GMC) AS 301-1 0.0 h.
See 2144. Offered fall semester. Complete. 2254.
2544 AFROTC Leadership Laboratory (GMC) AS 208-1 0.0 h.
See 2144. Offered spring semester. Complete. 2351.
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See 2144. Offered spring semester. Complete. 2351.
AFRICAN-AMERICAN WORLD STUDIES

Chair: Dawn T. Turner
Professorship: Print Matters (English/African-American World Studies); Dawn T. Turner (English/African-American World Studies)
Associate professor: Abe Kendilen (English/African-American World Studies), Alber Roberts, Eun Young Park (History/African-American World Studies), Francis Woods (English/African-American World Studies)

Undergraduate program offered: B.A. in African-American World 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 in African in other lands. Because a thorough understanding of African-American culture cannot be achieved through study restricted to the perspective of a single discipline, all students in the program are required to pursue coursework in humanities and social sciences. Although the program at present emphasizes history and literature, the African-American World Studies Program continually expands program 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 intended to foster awareness of the role of African-Americans in the development of the United States and designed to promote understanding of the present conditions and concerns of Black Americans. Since then, these courses have been organized into a curriculum that includes a program leading to an undergraduate major in African-American world studies, an undergraduate minor in Afro-American Studies, a Master of Arts degree in Afro-American studies, and concentrations of Afro-American studies programs leading to a B.A. degree, M.A., and Ph.D. degrees in Afro-American studies. Students seeking B.A. degrees in English or history also can organize courses in Afro-American literature or Afro-American history into a special field or cognate area.

Originally called the Afro-American Studies Program, the program was renamed the African-American World Studies Program in 1986. This new name more accurately describes the philosophy and the breadth of the program. Although most of the students in the Ph.D. program are preparing to work in colleges and universities as teachers and administrators, the B.A. and M.A. programs provide valuable backgrounds for many other students seeking positions in community work, public school teaching, religion, government, and political science. In short, the African-American World Studies Program offers training important to any individual whose career will involve understanding and knowledge of Blacks.

Undergraduate Program

Bachelor of Arts

Students earning a Bachelor of Arts degree with a major in African-American World Studies will follow either of two programs of study: the African-American studies option (63 semester hours) or the African-American world studies option (87 semester hours). A minor program of Afro-American studies option is being planned. The African-American studies option focuses on Blacks in the United States and gives some attention to their culture and history in relation to the cultures and histories of Blacks elsewhere in the world. The African-American world studies option places greater emphasis on the interrelationships of Black history and cultures in various places in the world. Students may earn a grade-point average of 2.00 or higher in all courses in their major program. The curricula are as follows:

AFRICAN-AMERICAN STUDIES Option

Total of 30 semester hours

Required Courses

AFRICAN-AMERICAN STUDIES

129.00 Introduction to Afro-American Society
3 s.h.
129.60 Introduction to Afro-American Culture
3 s.h.
For majors in the program, these two courses are prerequisite to Afro-American Literature I and II; Afro-American History I and II, and Senior Seminar.
129.110 Afro-American Literature I
3 s.h.
129.117 Afro-American Literature II
3 s.h.
129.145 Afro-American History I
3 s.h.
129.145 Afro-American History II
3 s.h.
129.150 Critical Skills Seminar
3 s.h.
129.039 Senior Seminar
3 s.h.

Electives

Students must take 6 semester hours of electives in 100-level courses, not including 129.10, 129.175, or 129.176. Students are encouraged to take at least 3 semester hours of these electives in courses focused on Blacks in Africa or in the Caribbean.

Language Requirement

The language requirement for the Afro-American Studies option is the same as the College of Liberal Arts foreign language General Education Requirement for the B.A. degree. See the "College of Liberal Arts" introductory section in the Catalog.

African-American World Studies Option

Total of 39 semester hours

Required Courses

129.60 Literature of the African Diaspora 3 s.h.
129.60 Introduction to Afro-American Society 3 s.h.
129.60 Introduction to Afro-American Culture 3 s.h.
129.210 Social Science Perspectives on Contemporary Africa 3 s.h.
129.110 Afro-American Literature I 3 s.h.
129.117 Afro-American Literature II 3 s.h.
129.310 African Literature 3 s.h.
129.145 History of Pre-Colonial Africa 3 s.h.
129.145 History of Colonial Africa 3 s.h.
129.145 Afro-American History I Before 1865 3 s.h.
129.145 Afro-American History II 3 s.h.

3 s.h.

3 s.h.

3 s.h.

3 s.h.

3 s.h.

3 s.h.

3 s.h.

3 s.h.

3 s.h.

3 s.h.

3 s.h.
Another course in Afro-American history 3 s.h.
12980 Critical Skills Seminar 3 s.h.
12999 Senior Seminar 3 s.h.

Electives
Students must earn 6 semester hours of electives in 129-prefix courses, not including 129/110, 129/175, or 129/176.

Language Requirement
The language requirement for the African-American world studies option is four semesters, or equivalent, in any language other than English that is regularly spoken in Africa. The languages currently taught at The University of Iowa that satisfy this requirement are French, Portuguese, and Spanish.

Honors
The African-American world studies honors program offers students the opportunity to pursue special interests in individual in-depth research. Honors candidates in African-American world studies must be members of the College of Liberal Arts Honors Program.

Under the guidance of the undergraduate honors advisor, the honors candidate develops a research project using primary sources. Project proposals are made by the end of the candidate's junior year. Each candidate completes a project under the guidance of a senior faculty member, and may register for up to 6 semester hours in 129/110 Honors Project. Results are presented in a senior essay to a committee of three faculty members, including the supervising faculty member, the honors advisor, and a third faculty member of the student's choice. When the honors advisor is the supervising faculty member, the candidate may select second and third faculty members. The candidate's committee may choose to hear oral defenses of the final project, usually in the twelfth week of the student's last semester.

Minor
The African-American World Studies Program offers a minor in Afro-American studies to undergraduate students. The requirements conform to the general requirements for minors in the College of Liberal Arts. In consultation with their advisor, students select 15 semester hours (five courses) in courses designated in the African-American world studies courses. Four of these courses (12 semester hours) must be numbered 100 or above. All five must be taken at The University of Iowa. Students must earn a grade-point average of at least 2.00 in all courses in the minor program. Courses numbered 100 and above may be added from 129-prefix courses in the sequence of the sections of the Catalog, but 129/175 and 129/176 may not be counted toward the minor.

Admission
In addition to the general requirements of the Graduate College, unconditional candidacy for the African-American World Studies Program requires that students have an appropriate educational background in literature and the social sciences, at least 5 semester hours of college credit in African-American literature and/or history courses, and a minimum grade-point average of 2.70 in previous college courses in African-American studies. Students may be asked to sit for, without credit toward the master's degree, courses needed to remedy deficiencies in undergraduate preparation.

Applicants for admission are expected to present 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 World Studies Program.
Concentration in African-American Studies Ph.D.

Generally, a student seeking a Ph.D. in American studies with a concentration in Afro-American studies is preparing to be a teacher or research scholar at the college or university level.

Ordinarily, students seeking a concentration in Afro-American studies take a minimum of 36 semester hours of graduate study in African-American world studies, identify two Afro-American studies fields within their plan of study, and write a dissertation on a topic in Afro-American culture. An Afro-American studies field is defined as one in which the majority of courses are drawn from those listed under “Courses” at the end of this section of the Catalog. Students interested in such a concentration should consult both the chair of African-American World Studies Program and the chair of American Studies Program for more information.

Cognate Areas, Special Fields

It is possible for students to take concentrations of Afro-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 African-American world studies.

Cocurricular Activities

Black Kaleidoscope

The African-American World Studies Program sponsors Knowledge and consciousness of Black culture by sponsoring Black Kaleidoscope, a series of lectures and demonstrations by scholars and artists distinguished in Black culture.

Institute in Afro-American Culture

From 1968 through 1978, the University of Iowa served as summer host for an Institute in African-American World Studies for college and university teachers. The institutes, which brought renowned artists and lecturers to the campus, focused on topics such as the Harlem Renaissance, Richard Wright, W.E.B. Du Bois, Black Americans in theater, and clave narratives. Although students in residence at the University are not eligible to be official members of the Institute, they are permitted to enroll in a 3-semester-hour course offered at the same time as the Institute and in the current year's topic. The program hopes to offer institutes in future summers.

Black Action Theater

Academically sponsored through the African-American World Studies Program, Black Action Theater gives participants instruction and experience in theatrical 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 education and cultural artifacts and exhibits of Black culture; providing cultural enrichment for Black people of the Iowa City community and a cultural meeting place for Black students. The center attempts to provide a knowledge of Black culture that will promote interchange understanding among all members of the University community. See “Cultural Centers” in the “Student Life at Iowa” section of the Catalog.

Black Genesis Troupe

The African-American World Studies Program also encourages participation in Black Genesis Troupe, a student organization that blends dance, music, poetry, and visual arts in representations of Black culture and history.

Graduate Student Association

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

Related Courses

Although they are not included in the basic list of courses in the African-American World Studies Program, the following are recommended for interested students. For course descriptions, see the appropriate sections of the Catalog.

Anthropology

112.151 Sociology of the Third World 3 s.h.

Art and Art History

181.190 Themes in Art History: African Crafts 3 s.h.

181.202 Seminar: Problems in African Art 3-4 s.h.

Business Administration

62.252 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.

Economics

62.201 Government Policy and Planning in the Third World 3 s.h.

Education

71.104 Education in the Third World 2-3 s.h.

71.159 Educational Sociology 2-3 s.h.

71.164 Education, Race, and Ethnicity 2-3 s.h.

71.192 Socialization of the School-Age Child 3 s.h.

70.132 The Culturally Different in Diverse Settings 3 s.h.

Geography

44.107 Third World Development Support 3 s.h.

History

16A.63 American History: 1400-1877 3 s.h.

16A.62 American History 1877-Present 3 s.h.

16A.127 American Intellectual History 1607-1801 3 s.h.

16A.125 American Intellectual History from 1807 3 s.h.

16A.195 United States in the Early Republic 3 s.h.

16A.194 Civil War and Reconstruction 3 s.h.

16A.165 The Gilded Age in America 3 s.h.

16A.185 The Progressive Era in America 3 s.h.

16A.205 The New Era and The New Deal 1920-1945 3 s.h.

16A.255 The Contemporary United States 1940-Present 3 s.h.

Physical Education and Sports Studies

28.156 Minorities in Sports 3 s.h.

Political Science

30.146 African Development 3 s.h.

30.194 The Politics of Southern Africa 3 s.h.

30.150 The Political Economy of the Third World 3 s.h.

Sociology

34.166 Social Inequality 3 s.h.

Social Work

42.147 Racism and Discrimination 3 s.h.

Courses for Undergraduates

111018 Cooperative Education Internship 3 s.h.

112018 Literature of the African Peoples 3 s.h.

Introduction to selected works of a selected century from among the literatures of the United States, the Caribbean, and Africa.

21.297 Magazine and Cultural Anthropology 3 s.h.

26A.291 Oral History Workshop 3 s.h.

26A.308 Unit of African Rheumatic Diseases or units of disease by students.

Black American poetry as background and model for student writing, exploration of decision and creation of poems by students.
AFRICAN STUDIES PROGRAM

Coordinator: Joel Barkin (Political Science) Community advisors: Stephen Aron (International Relations and Services), Joseph Agyemang (Economics and Mass Communication), Joel Barkin (Political Science); Steven Barkin (College of Liberal Arts Honors Program); Jacques Bourgeois (French and Italian); John Dale (Social Science); James Gilliss (History); A. Christine (Art and Art History); John Powell (Liberal Studies); Michael McNulty (Geography); Peter Paton (German and Spanish); Mark Richardson (English and World Studies); Alan Ruatti (Anthropology); Christopher Weig (Art and Art History); Alan Sommer (Geography); Adrian Wong (Law)

The African Studies Program helps students gaining a broader understanding of traditional and contemporary life in Africa, and with the historical and contemporary forces that shape the continent. It fosters an awareness of cooperation and collaboration among students and faculty that leads to increased opportunities for teaching and research.

Several established programs and resources at the University of Iowa benefit the African Studies Program. The Student Collection of African sculpture at the Museum of Art is central to the program and allows numerous benefits to students interested in all aspects of African life. The many contemporary African writers who participate in the International Writing Program strengthen African studies. So do African scholars who come to campus through the Program for International Development and African students who enroll in the ISchool of Journalism and Mass Communication master's programs in development support communication. The University also participates in exchange programs with the University of Cape Town, barley, and the University of Stellenbosch, South Africa, established with funds from a United States Information Service grant.

Certificate Program
The African Studies Program provides undergraduate students with an interdisciplinary background in the study of Africa that complements a departmental major and serves as a step toward possible graduate study in Africa. The curriculum for an undergraduate certificate in African studies includes 21 semester hours of courses on Africa. These are divided into three main groups of study: introductory, intermediate, and advanced. Undergraduate students pursuing the certificate take 177"’ certificate in the third course of the subject area. This is followed by 15 semester hours of intermediate or advanced courses (200-level) lecture courses, with at least one course from each of four areas of study. Literature, art, society, and social science. Senior students complete the course of study with a seminar or an advanced course on Africa.

Course Requirements
Full descriptions of each of the courses listed below are given in the appropriate departmental sections of the Catalog.

Foreign Language Requirement
The language requirement is four semesters or equivalent of any foreign language spoken in African Languages currently taught at the University of Iowa. This requirement can be met in French, Portuguese, and Spanish.

Introductory Course
141:1 Introduction to African Studies 1-3 s.h.

Intermediate Courses
One 3-semester-hour course in each of the following areas (12 semester hours total):

Literature
141:14 Literature of the African Peoples 3 s.h.
141:110 African Drama 3 s.h.
141:119 African Literature 3 s.h.
141:135 Francophone Literature of the African Diaspora 3 s.h.

Anthropology
141:157 Peoples and Cultures of Africa 3 s.h.
119 Special Topics in Anthropology 3 s.h.

Art
141:207 Art of West Africa 3 s.h.
141:208 Art of Central Africa 3 s.h.
141:290 Themes in Art History: African Crafts 3 s.h.

141:200 Seminar: Problems in African Art 3 s.h.

History
141:125 History of Pre-Colonial Africa 3 s.h.
141:125 History of Colonial Africa 3 s.h.
141:131 Modern African History 3 s.h.

Social Sciences
141:140 African Development 3 s.h.
141:148 The Politics of Southern Africa 3 s.h.

Geography
141:212 Planning and Geography of Underdevelopment 3 s.h.

Urban Development
141:252 Political Economy of Regional Development 3 s.h.
141:264 Agricultural Change and Rural Development in the Third World 3 s.h.

Electives
Three semester hours in any of the areas.

Advanced Course/Seminar
Students must take a seminar or an advanced course in any of the four areas listed above (3 semester hours). Among the advanced coursed offered are the following:

141:110 African News Colloquium 2 s.h.
141:202 Seminar: Problems in African Art 3 s.h.
141:221 Three African Writers 3 s.h.

Further information on the African Studies Program is available from the Center for International and Comparative Studies, 655 Jefferson Building. The University of Iowa, Iowa City, Iowa, 52242.

Courses

141:14 Introduction to African Studies 1-3 s.h.

141:14 Literature of the African Peoples 3 s.h.

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141:14 Literature of the African Peoples 3 s.h.
AGING STUDIES PROGRAM

Coordination: MaryAnn McCarroll
Advisory committee chair: Lorraine Oestman (Dean, Economics)
Advisory committee: Lawrence Dwyer (Economics), Gary Gerst (Business Administration), Charles Reith (Medicine), Al Brown (Computer Education), Nita Hart (Sociology), James McDonald (Graduate College), P. W. Liddle (Department of History), George Levy (Continuing Education), Bruce MacNeil (Computer Studies), Lawrence McGinnis (Health Sciences), James D. Rovner (Law), Susan Samuels (History), Robert W. Sh ARCHER (Geography), Richard J. Simon (Psychology), Bernard Serbin (Pharmacy), Martin Tracy (Social Work), Thomas H. Wale (Social Work)

The Aging Studies Program at The University of Iowa is designed to provide undergraduate and graduate students with a multidisciplinary approach to gerontology. The program consists of courses that have been coordinated and sequenced to provide a broad background in aging for students of various disciplines. All students plan their course of study with their academic advisor and in close cooperation with the Aging Studies Program coordinator.

Programs

Certificate

The certificate in Aging Studies requires 18 approved semester hours of course work related to aging at the 100 level or above. This aging-specific course work is defined as University of Iowa courses that focus primarily on older persons, the aging process, or interventions/methods or techniques whose target is the elderly 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 course work to their major or professional degrees. Of the 18 hours, at least 6 must be taken outside the major department.

Students should take the introductory aging course prior to or concurrently with other courses in the program. The research project or the practicum course should not be taken until the fall semester of the program is completed.

Eligibility

The program is open to all interested graduate and undergraduate students who have completed 45 semester hours and who are interested in the academic and career-oriented aspects of aging.

Students in good standing at the above-mentioned level may establish plans of study with the Aging Studies Program coordinator, who works with them and their advisors to design a plan that is complementary to their academic program and career interests.

Students should contact the aging studies coordinator to develop an appropriate study plan. The program includes required courses and options in which course work should be taken. The coordinator keeps a record of each student's approved program and progress. When a student completes an undergraduate degree and fulfills the requirements for the Aging Studies Program, the coordinator notifies the registrar, who records completion of the program on the student's transcript.

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 courses outside of their major department or college that are approved by the program. The minor must be approved by the student's college or department. At least 12 of the 15 semester hours must be taken in advanced courses (100 level or above) at The University of Iowa. Students must have a grade-point average of at least 2.00 to be allowed in aging studies.

Course Requirements

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:

17:108 Basic Aspects of Aging 2 s.h.
34:120 Aging and Society 3 s.h.
42:184 Multidisciplinary Perspectives on Aging 3 s.h.
96:129 Introduction to Gerontology 2-3 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:

17:400 Cooperative Education Internship 3 s.h.
17:450 Directed Study 1-6 s.h.
42:105 Field Work in Gerontology 1-6 s.h.
96:153 Nursing Practice in Chronic Illness (partial credit) 3 s.h.
96:165 Leadership, Management, and Research in Nursing Practice (partial credit) 3 s.h.

Other departmental practicum or research courses are accepted if the focus and focus of the course of study is aging-specific.

Elective Courses

Students may take elective courses to meet their particular needs and interests. Additional courses fulfill the requirements for the program may be selected from the following.

Anthropology

115:136 Aging: A Cross-Cultural Perspective 3 s.h.
115:147 Special Topics in Anthropology: Death, Bereavement, and Ethnicity in Late Life 3 s.h.

Counselor Education

20:280 Topical Seminar in Counselor Education 3 s.h.

Dentistry

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

Health and Hospital Administration

40:398 Long-Term Care Administration 3 s.h.

Home Economics

17:211 Individual and Family Development: Life Span (partial credit) 3 s.h.
17:219 Seminar: Family and Consumer Studies (Aging and the Family) 3 s.h.

Internal Medicine

78:805 Geriatrics Seminars 1 s.h.

Nursing

96:116 Loss and Death in Clinical Nursing Practice 3 s.h.
96:1200 Normative and Psychopathological Aspects of Aging 3 s.h.
96:205 Gerontological Nursing I 3 s.h.
96:215 Gerontological Nursing II 3 s.h.

Physical Education

227:122 Health Promotion and Aging 3 s.h.

Recreation Education

104:146 Contemporary Issues in Recreation and Leisure 3 s.h.
104:152 Aging and Leisure 3 s.h.
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104.165 Health Promotion and Wellness for Older Adults 3 s.h.

Statistical
32.143 Introduction to Biomedical Ethics (partial credit) 2-3 s.h.
32.153 Surgery, Death, and Faith 7 s.h.

Social Work
42.185 Social Policy and the Elderly 3 s.h.
42.190 Selected Aspects of Social Work and Social Welfare 3 s.h.
42.222 Social Roles in Health Care (partial credit) 3 s.h.
42.280 Human Behavior. Selected Aspects 3 s.h.

Sociology
38.130 Social Psychology of Aging 3 s.h.
38.230 Sociology of the Family (partial credit) 3 s.h.
38.235 Aging and Human Development 3 s.h.

Speech Pathology
3.165 Communication Disorders and Aging 2 s.h.
3.520 Seminar: Communication Disorders and Aging 2 s.h.

AMERICAN STUDIES PROGRAM
Chair: Richard F. Norton
Professors: Warren Frade (American Studies), Richard T. Maney (American Studies), John Eastman (American Studies/English), Albert E. Stone (American Studies/English)
Associate professor: Lauren Rabishaw
Graduate advisor: Associate professor: Lauren Rabishaw
Undergraduate degree offered: B.A. in American Studies
Graduate degree offered: M.A., Ph.D. in American Studies


In its course work and for its majors, the American Studies Program provides an interdisciplinary introduction to American culture, past and present. The program helps students and critics of culture acquire a broad familiarity with the dynamics of cultural experience. Students may combine related departmental courses in American experience with the interdisciplinary courses and seminars of the American Studies Program to explore aspects of life in the United States, such as popular and fine arts, institutions, values, gender and ethnic relations, art, and the everyday life of a diverse citizenry.

Undergraduate Program

Bachelor of Arts

The B.A. degree in American studies stresses broad training in cultural analysis and communication. Although there is no explicitly vocational training, the program provides preparation for a career in business, education, government, journalism, or social service; for advanced studies in the humanities, the social sciences, theology, or business; or for professional studies in law or medicine. Internships can be arranged.

With the advisor's assistance and approval, a student majoring in American studies develops an individual plan of study, combining courses from cognate departments and programs with integrative American Studies Program courses to explore a common interrelated topic, theme, or problems in American culture and experience. The major usually consists of 12 courses totaling 30 semester hours. Students are especially encouraged to complete courses in women's studies and African-American world studies. Courses in American studies must include: 45.1 American Values and 45.9 Seminar in American Cultural Studies. Requirements include:

- American studies core (4 courses, including 45.1 and 45.9) 12 s.h.
- American history (2 courses) 6 s.h.
- Cognate (6 courses in American studies or other departments) 18 s.h.
- Total 36 s.h.

General education courses in historical perspectives, humanities, literature, and social sciences provide relevant preparation for the American studies major. The 9-6-9 American Studies is especially recommended.

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 2.0. At least 12 of the 15 semester hours must be taken at the University of Iowa. The number of hours may include 45.100 and above, but 45.9 may also count toward this requirement.

Honor Students interested in a minor in American studies should consult program faculty members. The minor requires the completion of 15-18 semester hours. The student must maintain a minimum grade-point average of 2.0. At least 7 of the 15 semester hours must be taken at the University of Iowa. The number of hours may include 45.100 and above, but 45.9 may also count toward this requirement.

Graduate Programs

Master of Arts

The M.A. degree in American studies may be a terminal degree or a degree preliminary to the Ph.D. in American studies or a traditional disciplines.

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

45.200-201 Theory and Practice in American Studies I (6 semester hours) at least one other course (5 semester hours) or seminars in American studies.

Five in eight additional courses selected in relation to a topic or period of cultural history; these courses may be grouped together. Students are encouraged to take two courses in American history and some work in African-American world studies and women's studies, and satisfactory performance in 45.9 North American Indian Studies (3 s.h.), which includes a comprehensive examination on course work 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 thesis credit. Students should consult the program chair for details.

A joint program leading to the M.A. degree in American studies and the J.D. degree from the College of Law provides a broad cultural context for the study and practice of law. Requirements include:

- Theory and Practice in American Studies (45.200-201) 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

Doctor of Philosophy

The Ph.D. program in American studies requires a minimum of 72 semester hours of course work that provides a core of American studies courses, an interdisciplinary methods and substantial course work in three major fields. Requirements include:

- Theory and Practice in American Studies (45.200-201) 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 candidates must meet certain basic requirements. Students must complete their coursework and reading, and all courses are explored on the oral portion of the comprehensive examination. Some core courses are required in American studies and selected courses in other disciplines, and the student must design a plan of study that emphasizes a particular area of interest. A portfolio of reading and research work is developed by the student under the guidance of a faculty advisor. The portfolio consists of readings, research papers, and other products of the student's work. The portfolio is evaluated by a committee of faculty members from different disciplines, including American studies, history, literature, and art. The portfolio is presented to the faculty committee in a comprehensive examination. The committee assesses the student's understanding of the subject matter and the quality of the student's work. The portfolio is evaluated by the committee, and the student is given a grade based on their performance. The portfolio is kept in a file and is available for future reference. The portfolio is an important part of the student's academic record and is used to assess their knowledge and skills in the field of American studies.
Primarily for Graduates

45200 Theory and Practice in American Studies I 3 s.h.
45201 Theory and Practice in American Studies II 3 s.h.
45210 Introduction to Research in American Culture 3 s.h.
45240 Women and Televised American Culture 3 s.h.
45250 Seminar in Theories of Culture 3 s.h.
45264 Seminar: History, Literature, and Culture 3 s.h.

Senior and Graduate Students

45300 American Literature 4 s.h.
45301 American Literature II 4 s.h.
45304 Special Topics in American Literature 3 s.h.
45310 Special Topics in American Culture 3 s.h.
45320 Special Topics in American Studies 3 s.h.
45354 Special Topics in American Social Studies 3 s.h.
45355 Special Topics in American Social Science 3 s.h.

Graduate Programs

Master of Arts

The M.A. program consists of three program tracks: general anthropology (thesis or non-thesis), designed to prepare students to deal with any aspect of anthropology at an introductory level; economic anthropology (thesis only); and feminist anthropology (thesis only). The M.A. program without thesis provides consideration for admission to the Ph.D. program.

The number of semester hours of credit required for the M.A. with thesis may vary from 30 to 36, depending on the student's previous anthropological training. The non-thesis program requires at least 36 semester hours of graduate work. The department also offers a 36-semester-hour M.A. degree without thesis in anthropology with a concentration in museum training. No more than 9 semester hours of courses outside of anthropology and no more than 3 semester hours of independent study may be applied toward the M.A. degree requirements in anthropology.

Students with previous training in anthropology, whatever their undergraduate 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

Thesis (thesis or non-thesis)

112:102 Anthropological Data Analysis
112:171 Anthropological Procedures
112:240 Seminar: Sociocultural Anthropology
112:258 Seminar: Archaeological Theory and Method
112:265 Seminar: Biological Anthropology

Total 15 s.h.

Students must also take one additional course in each of two of the following subject areas, for a total of 6 semester hours. Such courses are in addition to the requirements listed for the department's Anthropology program (courses listed under "Sociocultural Institutions"). Important: Students must have appropriate courses in the Department of Linguistics (archaeology), the Department of Sociology (anthropology), the Department of Anthropology (social science courses), or the Department of Anthropology (economics courses). Up to 12 semester hours of independent study may be applied toward the Anthropology program.

Economic Anthropology

Thesis (thesis only)

112:102 Anthropological Data Analysis
112:240 Seminar: Sociocultural Anthropology
112:258 Seminar: Archaeological Theory and Method

Total 9 s.h.
Students must also take one course from each of the three groups below, for a total of 9 semester hours.

113.135 Work and Society
113.145 Economic Anthropology
113.138 Economic and Political Development: Women's Roles
113.251 Sociology of the Third World
113.375 Development Policy and Planning in the Third World
113.343 Environment and Culture
112.196 Environmental Archeology
113.304 Comparative Prehistory

Female Anthropology

Thesis only:
112.240 Seminar: Sociocultural Anthropology
113.190 Feminist Perspectives on Biology and Culture
113.220 Seminar: Feminist Anthropology

Total 9 s.h.

Students must also take three courses from the two groups below, with at least one course from each group, for a total of 9 semester hours.

113.138 Economic and Political Development: Women's Roles
113.156 Women's Roles in Cross-Cultural Perspective
113.203 Seminar: Gender in Chinese Society
113.171 Anthropological Linguistics
113.412 Language and Culture
113.201 Seminar: Anthropological Theory
113.285 Seminar: Archaeological Theory and Method
113.285 Seminar: Biological Anthropology

M.A. in Anthropology with Concentration in Museology

In cooperation with the Museum of Natural History, the Department of Anthropology offers a program of study leading to the M.A. degree in anthropology with a concentration in museology. Instruction in the organization and management of museums with emphasis on exhibit design, curation, and educational outreach development forms part of the graduate program.

Required Courses

Anthropology

113.240 Seminar Sociocultural Anthropology 3 s.h.
113.285 Biological Anthropology 3 s.h.
113.208 Seminar Archaeological Theory and Method 3 s.h.
113.203 Seminar in anthropology 6 s.h.

Total 15 s.h.

Museum Training

24.03 Museum Laboratory Methods 2 s.h.
24.130 Principles of Exhibit Design 2 s.h.
24.113 Introduction to Museology 2 s.h.
28.113 Introduction to Conservation of Museum Objects 2 s.h.
24.114 Directed Studies and Projects 3 s.h.
24.146 Description and Organization of Materials 3 s.h.
24.146 Museum Internship 3 s.h.

Total 18 s.h.

Suggested Electives

24.102 Museum Technique
24.044 Museum Library Methods

Other courses in museum training, science education, instructional design and technology, biology, art and art history, and English (expository writing).

Doctor of Philosophy

Graduate training in anthropology at the Ph.D. level is designed to prepare students for professional competence in scholarly research and teaching. Students in the University of Iowa graduate program may select specializations in up to four subfields of anthropology:

- Archeology
- Biological anthropology
- Cultural anthropology
- Linguistic anthropology
- Social and cultural anthropology

The program in anthropology is designed to provide students with comprehensive training in the field, as well as the opportunity to specialize in one or more subfields. The program is intended to prepare students for careers in academia, museums, government, and other professional fields.

Admission

Applicants for admission to the graduate program in anthropology are considered on the basis of their previous training and experience. Applicants must hold an MA degree in anthropology or a related field and must have a minimum 3.0 GPA. Applicants must also submit a personal statement, letters of recommendation, and a resume. The Department of Anthropology reserves the right to require additional documentation, such as a writing sample or a portfolio, for some applicants.

The comprehensive examination is normally taken after the first year of graduate study. The examination is designed to assess the student's knowledge of the core areas of anthropology and to evaluate their ability to apply this knowledge to research and teaching.

Field Research

The Department of Anthropology offers a variety of opportunities for students to conduct field research. These opportunities include fieldwork in the United States and abroad, as well as internships in museums and other relevant organizations. Field research provides students with the opportunity to develop research skills, gain experience in the field, and contribute to the anthropological literature.

Final Examinations

The final examination for the M.A. degree in anthropology is a comprehensive examination that assesses the student's knowledge of the core areas of anthropology and their ability to apply this knowledge to research and teaching. The examination is normally taken after the first year of graduate study. The examination is designed to evaluate the student's knowledge of the core areas of anthropology and their ability to apply this knowledge to research and teaching.

Final Examinations

The final examination for the Ph.D. degree in anthropology is a comprehensive examination that assesses the student's knowledge of the core areas of anthropology and their ability to apply this knowledge to research and teaching. The examination is normally taken after the second year of graduate study. The examination is designed to evaluate the student's knowledge of the core areas of anthropology and their ability to apply this knowledge to research and teaching.
It was also among the first art schools to join studio art with art history studios, reflecting the concept that the young artist benefits from a formal study of the traditions of art and a prospective historian from personal experience with the creative process.

Emphasis on the creative productivity of its faculty reflected an educational philosophy that made Iowa one of the few campuses to accept creative work for academic credit.

Early on, the school established a tradition of, and achieved national recognition for, presenting exhibitions of contemporary American painting and sculpture.

Its national image and position are the result not only of The University of Iowa Museum of Art, whose exhibitions and growing collection of art works represent all periods and nations, but also through its continuing program of employing visiting artists and scholars of national and international prominence.

The facility of its undergraduate and graduate programs in art history continues with the support of an excellent art library and a large collection of Visual materials. Its short-term workshops conducted by visiting lecturers and the permanent board continue to keep students directly involved with current scholarship.

Iowa's art and art history graduates enjoy success as practicing professional artists, art historians, art department administrators, museum directors and curators, theater designers, and teachers. Regardless of employment designations, graduates of the school traditionally have continued to find acceptable positions. Although it has always placed an emphasis on the fine arts (specifically commercial art courses are not part of its program), the school offers courses in the theory of graphic design to prepare graduates for positions as commercial designers.

As much as possible, the core of academic programs is designed to meet the individual student's needs, permitting the development of specific as well as general programs in studio arts and making the major requirements of the undergraduate program as broad as possible. Specialization is discouraged. The aim of the major is to provide an introduction to studio work. The studio major requires development of a foundation in art history and at least six areas of studio art. The aim of the joint curriculum is to give students a basic understanding of art and aesthetics, but it does not focus on particular short-term styles or fashions.

**Undergraduate Programs**

**Bachelor of Arts**

The B.A. candidate in art or art history must earn at least 17 - 18 semester hours of credit in non-art courses but may apply no more than 46 semester hours toward the total of 124 semester hours required for the degree.

Center for Performing Arts, a component of the School of Art and Art History may not be counted toward baccalaureate elections.

**Studio Emphasis**

The B.A. degree with studio emphasis requires the following courses and units in art:

**Art History:**
- Two courses selected from Hus. 135, 136, and 140, 141
- Two additional courses selected from these courses listed above

**Art Studio:**
- 3 A 19  College Art
- 3 A 28  Basic Drawing
- 3 A 36  Basic Design
- Any two of the following courses:
  - 1C 00  Ceramics I
  - 1C 20  Introduction to Metalworking and Jewelry
  - 11 50  Multimedia I
- 1N 15  Undergraduate Sculpture I

Two beginning courses, one each from two different studio areas not taken to satisfy the requirements above:

Beginning courses in areas not listed above also count.

**Design:**
- ID 22  Problems in Design I—Form and Structure
- ID 23  Problems in Design 2—Form and Function
- ID 26  Lettering I
- ID 28  Graphic Design I

**Drawing:**
- HF 17  Life Drawing I

**Painting:**
- U 99  Painting I

**Photography:**
- UC 21  Photography I

**Printmaking:**
- HMS 13  Undergraduate Printmaking I

**Film and Video:**
- IP 191  Printing and Diecutting
- IP 192  Weaving

Electives, selected only from courses that originate in the School of Art and Art History, must bring the total number of credits in history of art or art studio, or art education combined in a minimum of 30 semester hours and may raise the total to a maximum of 50 semester hours. No more than 26 semester hours of credit in the combined art history, studio, or art education courses may be counted toward the total of 124 semester hours required for the degree.

Graduate students majoring in art studio must complete at The University of Iowa a minimum of 3 semester hours in art history and 32 semester hours in studio, in addition to the six basic studio courses required.
Bachelor of Fine Arts in Studio
Prospective B.F.A. students must apply to enter the program after completing at least one semester of work in the studio area of concentration, but before completing 50 semester hours in art. B.F.A. candidate reviews are held once each semester. Students who wish to enter the B.F.A. program should consult the faculty in the studio area of concentration for information about the required portfolio review.

The B.F.A. requires that the 124 semester hours needed to graduate must include 52 semester hours of credit from courses taken outside the School of Art and Art History and at least 42 semester hours of credit in Studio Art and art history courses. In addition to the General Education Requirements (see the "College of Liberal Arts" section of the Catalog), and major requirements listed above, the B.F.A. degree with studio emphasis, B.F.A. candidate must complete three 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 those in the B.A. program. The B.F.A. candidate may waive 6 semester hours of the General Education Requirement in historical perspectives.

Honor Art majors who are eligible to enroll in the College of Liberal Arts Honors Program shall enroll in the Studio Art and Art History.

Honor students in art history must maintain a minimum grade-point average of 3.50 in art history courses and must complete 3 semester hours of work in each in a seminar and a writing thesis beyond the 18 semester hours of intermediate and advanced art history.

The undergraduate seminar requirement may be met by completion of a graduate seminar or supervised course of directed study. The seminar requirement may be met by a research paper produced in a graduate seminar or a course in directed studies judged to be comparable in quality to graduate level work.

Honor students in studio must maintain a minimum grade-point average of 3.50 in studio courses, hold an exhibition of their studio work, and prepare a statement of the sources of the exhibited studio work. This statement may be based on the history of art, history of ideas, and so forth written under the supervision of faculty in the student's studio area of concentration. Registration for the course of individual instruction that leads to the exhibition and related statement may be for 3 semester hours of credit.

Minors
A minor in art requires 15 semester hours of credit, excluding the minimum grade-point average of 2.00. At least 12 of these hours must be in advanced art courses taken at The University of Iowa. Advanced courses in the School of Art and Art History are those numbered 200 and above plus HICK 49, 49M, 52, and 117.

Graduate Programs
Master of Arts in Art History
An M.A. student in art history is expected to acquire a broad knowledge of art history as an academic and humanistic discipline, become familiar with major periods and movements of world art, and gain proficiency in techniques of research within selected areas.

Specific requirements include:
A. B.A. or B.F.A. degree, at least 18 semester hours of undergraduate work in art history is recommended.
B. A minimum of 30 semester hours of graduate-level course work, with a grade-point average of 3.00 or higher, students planning to transfer graduate credits from another institution should note that the minimum residence requirement for the M.A. degree is 24 semester hours and for the A.M. degree at least one semester-hour course at a level equivalent to University of Iowa courses numbered 500 or above, taken after receiving the B.A., in each of the following areas of art history:
1. Ancient (to 100 A.D.)
2. Medieval (300-1500)
3. Renaissance to Baroque (1500-1750)
4. Nineteenth century to modern
5. African
6. Oceanic
7. Pre-Columbian
The following may be substituted for the above course distribution:
A comprehensive written examination (totaling approximately four hours in length) broadly covering the entire field of art history is given three times per year, at the beginning of each semester and the summer session. Students must take the examination at the latest within the next two regularly scheduled examination dates following the semester in which they complete 30 semester hours of graduate work. The comprehensive examination may be delayed only once.

Course distribution for the M.A. in art history is as follows:
A. 18-24 hours: Methodology of Art History and Criticism
B. At least 30 hours in the history of art, with an additional minimum of 12 hours in different art history seminars
C. Other art history seminars (with different instructors)
D. Art history courses
E. Studio courses
Courses outside the school

*These seminars can be applied toward disciplines 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 on 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 arts will take 12 to 18 semester hours of studio course work, with a minimum of 9 semester hours in one subject. In addition to the undergraduate requirement for a studio major, they also must satisfy the drawing requirement. Studio courses may be taken satisfactory-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 is expected to demonstrate the ability to read art historical writings in an appropriate foreign language, namely German or French, though other languages, including Oriental languages, may be acceptable. This requirement may be fulfilled by satisfactory completion of the final seminar of a Ph.D. language reading course, or satisfactory completion (at least a 2.0 average) of the fourth semester of a college or university language course.

The student must prepare either a thesis (for the M.F.A.) or a 10-semester hour research project (for the M.A.) for which credit may be allowed, or a substantial research paper (approximately 40 pages).

Specialized Area Studies Program

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 academic performance, and includes, where appropriate, the area of the student’s specialization. To encourage broad study, the student is expected to concentrate course work in his/her major area of 6 credits. Acceptance into the area studies program does not change the student's obligations to the methodology, language, seminar and research paper work requirement. In consultation with the faculty advisor, the student takes appropriate courses in related areas offered by other departments. Faculty supervising work in the specific areas will aid the student in this decision.

The M.A. program concludes written exams in the major area of specialization, an oral exam, and the submission of a significant research paper or thesis.

Master of Arts in Studio

The school offers the M.A. degree in studio with a major in ceramics, design, drawing, metalworking and jewelry, multimedia and video art, painting, photography, printmaking, or sculpture. The degree requires:

- The B.A. or B.F.A., in art equivalent to that offered at The University of Iowa (undergraduate deficiencies, if any, may be made up concurrently, but are in addition to, graduate requirements).
- A minimum of 39 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 no less than 8 semester hours of courses outside art and art history.
- Clearance from M.A. candidacy by faculty review.

Studio majors may elect to take art history courses as a satisfactory-unsatisfactory basis.

Graduate students who have not had art classes at The University of Iowa must take at least one drawing course during their first year.

A student preparing to teach in both the Studio and art history areas may complete an M.A. history minor of 15 semester hours, including HISP 500 and either ARTH 500 or ARTH 502. These hours are in addition to the University’s undergraduate requirements for an art history major and, in combination with the undergraduate hours, must satisfy the distribution requirement for art history.

Master of Arts In Art Education

Requirements for the M.A. in art education are:

- The B.A. or B.F.A., in art equivalent to that offered at The University of Iowa; and
- Completion of 38 semester hours of graduate credit, including 18 semester hours of studio and art history in a ratio of no more than 2:1 (either 12 semester hours of graduate credit in studio and 6 in art history or 6 in studio and 12 in art history), 8 semester hours in graduate seminars in art education, and 6 semester hours to be specified after the student constitutes the program.

As oral and/or written examination in art education:

A written thesis based on research in art education or art history or a studio thesis (a studio thesis must be accompanied by a brief statement of the student’s technical, aesthetic, and/or psychological approach) is also the M.A. degree in studio, clearance for M.A. candidacy by faculty review.

Art education majors who elect to do a thesis degree may not work toward their degree during the year that they are required to take a fall/spring drawing course, selected from the school’s regularly scheduled drawing courses. During the first year in residence, art education majors may elect to take art history courses for the graduate, satisfactory-unsatisfactory basis.

Master of Fine Arts In Studio

The school offers the M.F.A. degree in a major in ceramics, design, drawing, metalworking and jewelry, multimedia and video art, painting, photography, printmaking, or sculpture. The M.F.A. candidate 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 22 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 to courses originating outside the school clearance for M.F.A. candidacy by faculty review; and studio and written thesis. Thesis credits earned in an M.A. program are not applicable toward the M.F.A. credit requirement.

Doctor of Philosophy In Art History

The Ph.D. student is expected to have a broad general knowledge of art history and to acquire detailed knowledge of monuments, an understanding of artistic development, and a knowledge of research methods within certain specialized areas of world art as to be selected by the student in conjunction with appropriate faculty members in the school.

The Ph.D. degree in art history is licensed only for students who can effectively demonstrate scholarly potential in the field. Students may apply for a rapid track to the Ph.D., bypassing the M.A. degree, by completing an Entrance Essay into Ph.D. Program,” below). Specific requirements for the Ph.D. degree include the following:

All students must make formal oral examination presentations in art history faculty, a grade-point average of at least 3.50, and make substantial and comprehensive in the program. Students, including those with an M.A. in art history from another university, must submit an art history research project for their research, consisting of at least three-fourths of the graduate art history faculty. Students must complete a minimum of 72 semester hours of graduate level (course credit toward this total, a maximum of 38 semester hours of work taken for the M.A. degree may be applied. Students must demonstrate, within the
consult the school for deadlines and requirements.

Courses, design, drawing, networking or jewelry, multimedia or video art, painting, or sculpture may not submit slides and/or photographs of their work in their major field. Lettering projects may submit from six to twenty original prints to the final examination. Photography majors must submit a selection of 10 to 25 slides or prints. Studio artists must submit two slides showing examples of their work in each other area, and three letters of recommendation.

Newly admitted students who do not register within two semesters of their admission must reapply. Students who attend for a limited term, then fail to register for a period of 36 months or more, must apply for readmission.

Graduate Admission: 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 studies. Applicants in the graduate program in an 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 work, or both to two studio areas. All applicants must submit three letters of recommendation.

Deadline for receipt of completed art history and art education applications is June 15 for the fall semester, November 15 for the spring semester, and April 15 for the summer semester. All applications must be postmarked by these deadlines.

Applicants to the graduate program in art history and 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 work, or both to two studio areas. All applicants must submit three letters of recommendation.

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ASIAN LANGUAGES AND LITERATURE

Quan, Muriel
Robertson, Professor, B. A. (South Carolina); M.A. (Virginia); Ph.D. (Columbia)
Associate Professors: Bing C. Chao, Ph.D. (Princeton); Leaver, Professor Peter, B.A. (University of Pennsylvania); Assistant Professor, Cheng-Ko Lo, M.A. (California State University, Northridge)
Supporting Faculty: David Anokh (Yale); Robert Blum (Harvard); Raquel E. Bruck (UCSD); William Breidt (Tulane); William Brock (Rutgers); William Deitel (Temple), D. Michael DeMarco (UCSD); Daniel Duggan (UCSC); David E. Fiske (UCSD); Faustino Gonzalez (UCSD); Michael K. Hammond (UCSD); Pierre-Henri Huyghe (UCLA); Shuih-Chun Huang (UCSD); John L. Hook (UCSD); T. Y. Lin (UCSD); Siew Ying (UCSD); N. L. McCallum (UCSD); Margaret Wiley (UCSD), M.A. (UCSD)

Undergraduate Degrees Offered: B.A. in Asian Languages and Literatures, Asian Studies
Graduate Degree Offered: M.A. in Asian Civilizations

Undergraduate Programs

The Department of Asian Languages and Literatures offers programs leading to the Bachelor of Arts degree—one primarily for students interested in studying the culture and civilization of traditional and modern Asia, and the other intended for those who wish to concentrate on developing competence in one of the Asian languages offered.

Graduates of both programs find careers in education, government, banking, and commerce in America and Asia. The programs also provide an excellent background for advanced study in literature, history, art, religion, political science, geography, anthropology, and sociology. The department urges its undergraduate majors to study in Asia as early in their careers as possible, and every effort is made to facilitate transfer of credit with universities in Asia.

Major in Asian Studies

This major introduces students to East or South Asian cultures, both modern and traditional, and to the contemporary political and social issues of Asia. Courses are taught by Asian specialists in many departments. Students are encouraged to take courses in a number of disciplines and in more than one area of Asia.

Students majoring in Asian Studies must complete 30 semester hours of courses in Asia, distributed as follows:

- 12 hours of coursework in the following areas:
  - China
  - Japan
  - Korea
  - Southeast Asia
  - South Asia
  - Central Asia

MINOR IN ASIAN LANGUAGES

A minor in Asian Languages requires a minimum of 15 semester hours with a grade-point average of 2.0. 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: 390 10-Second-Year Chinese
- 390 11-Second-Year Chinese
- 390 20-Second-Year Chinese
- 390 22-Second-Year Chinese
- 390 24-Second-Year Chinese
- 390 26-Second-Year Chinese

- Japanese: 390 10-Second-Year Japanese
- 390 11-Second-Year Japanese
- 390 20-Second-Year Japanese
- 390 22-Second-Year Japanese
- 390 24-Second-Year Japanese
- 390 26-Second-Year Japanese

- Hindi: 390 10-Second-Year Hindi
- 390 11-Second-Year Hindi
- 390 20-Second-Year Hindi
- 390 22-Second-Year Hindi
- 390 24-Second-Year Hindi

- Sanskrit: 390 10-Second-Year Sanskrit
- 390 11-Second-Year Sanskrit
- 390 20-Second-Year Sanskrit
- 390 22-Second-Year Sanskrit
- 390 24-Second-Year Sanskrit

Students are urged to fulfill the General Education Requirement in Historical perspective by completing 3.5 hours of Civilizations of Asia.

MINOR IN ASIAN LITERATURE

A minor in Asian Languages requires a minimum of 15 semester hours with a grade-point average of 2.0. 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: 390 10-Second-Year Chinese
- 390 11-Second-Year Chinese
- 390 20-Second-Year Chinese
- 390 22-Second-Year Chinese
- 390 24-Second-Year Chinese
- 390 26-Second-Year Chinese

- Japanese: 390 10-Second-Year Japanese
- 390 11-Second-Year Japanese
- 390 20-Second-Year Japanese
- 390 22-Second-Year Japanese
- 390 24-Second-Year Japanese
- 390 26-Second-Year Japanese

- Hindi: 390 10-Second-Year Hindi
- 390 11-Second-Year Hindi
- 390 20-Second-Year Hindi
- 390 22-Second-Year Hindi
- 390 24-Second-Year Hindi

- Sanskrit: 390 10-Second-Year Sanskrit
- 390 11-Second-Year Sanskrit
- 390 20-Second-Year Sanskrit
- 390 22-Second-Year Sanskrit
- 390 24-Second-Year Sanskrit

Students are urged to fulfill the General Education Requirement in Historical perspective by completing 3.5 hours of Civilizations of Asia.

MINOR IN ASIAN STUDIES

A minor in Asian Languages requires a minimum of 15 semester hours with a grade-point average of 2.0. 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: 390 10-Second-Year Chinese
- 390 11-Second-Year Chinese
- 390 20-Second-Year Chinese
- 390 22-Second-Year Chinese
- 390 24-Second-Year Chinese
- 390 26-Second-Year Chinese

- Japanese: 390 10-Second-Year Japanese
- 390 11-Second-Year Japanese
- 390 20-Second-Year Japanese
- 390 22-Second-Year Japanese
- 390 24-Second-Year Japanese
- 390 26-Second-Year Japanese

- Hindi: 390 10-Second-Year Hindi
- 390 11-Second-Year Hindi
- 390 20-Second-Year Hindi
- 390 22-Second-Year Hindi
- 390 24-Second-Year Hindi

- Sanskrit: 390 10-Second-Year Sanskrit
- 390 11-Second-Year Sanskrit
- 390 20-Second-Year Sanskrit
- 390 22-Second-Year Sanskrit
- 390 24-Second-Year Sanskrit

Students are urged to fulfill the General Education Requirement in Historical perspective by completing 3.5 hours of Civilizations of Asia.

HONORS

Students with a grade-point average of 3.30 or above are encouraged to enroll in the College of Liberal Arts Honors Program. With the permission of the departmental chair and a faculty sponsor selected from Asian specialties in any department, students may enroll in the Honors Program to enroll in 390 10-Honors Tutorial and 390 10-Seminar Honors Tutorial. To receive a B.A. with honors, students must complete an acceptable thesis based on original research in an appropriate area of Asian studies.

4-credit honors seminar (390 10-Seminar Honors Tutorial)
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 Liberal Arts and the College of Business Administration. The wide range of courses in the program permits undergraduate students to tailor it to their individual interests and to complement majors in the Colleges of Liberal Arts and Business Administration (see the "Certificate 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 as a part of the domestic and foreign cultures, and 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, 12 of which must be taken in residence at the University of Iowa. By the end of the first semester in residence, students must pass a plan of study developed in consultation with the advisor. The courses of study must conform to one of the programs as established and maintained in the master's program. Chinese literature, Chinese linguistics, Chinese language, Japanese literature, Japanese language and philosophy, interdisciplinary studies in Chinese, Japanese literature, Chinese literature, and modern literatures, and South Asian studies.

All students must maintain a 3.0 minimum grade-point average. Detailed information on degree requirements is sent to all applicants.

By the end of the final semester of residence, students are expected to demonstrate, either by departmental examination or the successful completion of courses at the appropriate level, advanced competence in Chinese, Japanese, Hindi, or Sinhalese, defined generally as equivalent to the level of successful completion of two years of university work in Chinese or Japanese and the third-year level in Hindi and Sinhalese.

Admission

Applicants for graduate admission must meet the general admission requirements of the Graduate College, except that a minimum grade-point average of 2.25 is required for conditional admission, 3.0 for regular admission. In addition, applicants must submit a writing sample in

Special Programs and Activities

Iowa Critical Languages Program

Programs to students to learn Chinese, Japanese, or Russian in Iowa high schools. Each year two students in each language are admitted to the program, which leads to a bachelor's degree with a major in the language and low enrollment at the secondary level. Applicants must be U.S. citizens or permanent residents of the United States. They may already hold a baccalaureate degree and teaching certification.

Through a grant from the Ford Foundation, participating schools receive scholarships for a year of study abroad and two summer intensive language study programs recognized for their excellence in foreign language training. Participants in the program are divided into three groups, one of which meets three times a week for ten weeks. Additional information is available from the Office of Academic Affairs, 111 Iowa Hall.

Summer and Study-Abroad Programs

The department strongly urges its students to seek opportunities for summer language study and study abroad in order to accelerate the pace of language acquisition, and many of the financial aid programs described above are designed to help make such learning experiences possible. Both the department and the Office of International Education and Services maintain extensive files of news and information about study-abroad opportunities.

The University's membership in the American Association of Indian Studies and the Chinese Institute of Language and Study provides participating schools with the opportunity to participate in the 

The India-China Exchange allows Iowa students to study in India and China during the Spring or Fall terms. Students may study Chinese business and language courses in China and Chinese and Indian language courses in India, which students may study Chinese business and language courses in China and Chinese and Indian language courses in India, which

English, such as a term paper, seminar paper, or graduation thesis, to the Department of Asian Languages and Literature.

Both foreign and domestic graduate applications requesting financial support for the following academic year are due in January 1. No later than February 1. No later than February 1, applications for admission without expense are due.

February 1. No later than February 1, applications for admission without expense are due. Applications for admission without expense are due by February 1. The Graduate School Examination (GRE) General Test is required, as a course of studies which usually cannot be made with credits are required.

Financial Aid

The Department of Asian Languages and Literature has available two study of summer scholarships for graduate students in Asian civilizations and teaching assistantships. The foreign language study programs provide for funding for summer scholarships for intensive language study provided by the Stanley-University of Iowa Foundation Support Organization. Scholarships consist of a cash grant of $1,000.

Students selected to participate in the Iowa Critical Languages Program receive special financial support. Undergraduate students in Asian languages have available support from two special programs:

- Presidential Scholarships for Study Abroad in the Summer for $1,000 may be used to help avoid the costs of study abroad. Up to twenty such scholarships are available each year, and proposals for study in non-Western countries are especially encouraged.
- Stanley Scholarships for International Development and Study. Stanley scholarships at up to $800 to support summer study in Asia and Africa away from the University of Iowa campus. Graduate students who combine work in modern Asian languages at an advanced level with interdisciplinary or professional study are encouraged to apply for Graduate Fellowships in International Language Study. The fellowships include academic year and summer study projects as well as full or partial tuition support. They may be held only by American citizens.

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Internships

Students are encouraged to enrich their professional growth through 100- and 200-level courses designed to continue work experience in Asia or the United States. Students may do research projects. The internship programs of the Office of Cooperative Education include a joint project with the Chicago office of the Japan Export Trade Organization to place two students in Japanese businesses and other organizations.

Japanese Language House, Student Association

The Foreign Language House in Hilvrett Residence Hall includes a Japanese house that is a focal point for activities among both resident and nonresident students and the Japanese Students Association, including weekly dinners.

The Japanese Student Association is composed of American students of Japanese and members of the Japanese community at the University. It organizes social events, film showings, and other cultural programs.

Library Facilities

Since 1967 the Main Library has routinely acquired most American titles in Asian studies and selected oversize scholarly publications in English and other Western languages. The library's Asian collection numbers about 40,000 volumes in Asian languages and about 120,000 volumes in English translations of Asian subjects. The University is a member of the Library of Congress Foreign Currency Exchange Program for Indian books and periodicals. The library's current music collections include a growing number of audio and visual materials. A Chinese-Japanese-Latin American language terminal gives students and faculty access to the growing Research Libraries Information Network database in Asian languages.

Courses

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<th>Graduate Language</th>
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Graduate Language

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Graduate Chinese

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BIOLOGY

John R. Wenninger
Professor
Geology
Geology

(new biological discipline)

Principles of Chemistry
Principles of Chemistry

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BACHELOR OF ARTS

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 hours requirement.

Required Courses in Biology

2.1 Introduction to Biology 4 s.h.
373 Principles of Animal Biology 5 s.h.
*373B Fundamental Genetics 3 s.h.
*373E Evolution 4 s.h.
An investigative laboratory course**

373D Fundamental Genetics Laboratory 3 s.h.
or
373F Fundamental Genetics Laboratory: Molecular Genetics of Yeast 3 s.h.
or
373G Endocrinology Laboratory 2 s.h.
or
2116 Field Ecology 4 s.h.

Electives in biology, botany, microbiology or paleontology 11 s.h.

Total 29-31 s.h.

*These courses are cross listed in the botany department.
**Students who enter more than 3 semester hours in investigative laboratories may apply those hours toward elective credit.

Minor Students majoring in other subjects may earn a minor in biology. The biology minor requires 15 semester hours of credit in biology, botany, microbiology, and/or paleontology courses taken at The University of Iowa, including at least 12 semester hours in 100-level courses, and excluding those designated primarily for nonbiology students. Biology courses taken at other institutions or taken as part of a student's major do not apply toward requirements for the biology minor.

Honors The honors program in biology gives the student opportunity to design a curriculum of interdisciplinary breadth and depth in an area of professional interest. Students must meet the general requirements and have a GPA of 3.6 or above. Honors students may choose an honors degree in biology by completing at least 6 semester hours of honors course work in the departments of Biology and/or Botany, including at least 2 semester hours in 373E or 2116 Laboratory Skills Research, at least 2 semester hours in 3719T Honors Readings in Bio or 2197T Honors Readings in Botany, and at least 1 semester hour in 4105T Honors Seminar in Biology or a directed-study level seminar. Three of the minimum 6 semester hours of honors course work may be counted toward the 11-semester-hour elective requirement for the B.S. or B.A. in Biology. Honors students in biology must maintain at least a 3.26 grade-point average overall and at least a 3.20 average in the biological sciences. A final research paper, approved by the research supervisor, is required and must be submitted to the honors program director.

Introduction to Research

The department offers 3719T Introduction to Research to acquaint students majoring in biology with the nature of practicing scientific work—through association with one of the department's research groups in experiments, discussion of current research, study of specialized topics, and attendance at research lectures.

Graduate Programs

Graduate programs in the department are designed to train scientists who can participate in research in marine, educational, or governmental environments, and who will contribute to the body of knowledge required for teaching biology. In the last two decades, while 10 Ph.D. graduates of the department have had a significant role in the curriculum, students have been exposed to college or university faculties, many of whom are in research positions. A substantial number of students completing their training with an M.S. degree have obtained technical or professional positions. A minor degree is required. Prior to registering in August, all new graduate students in biology take a two-week orientation covering courses in major areas of biology, ecological biology, genetics, cell and molecular biology, physiology and psychology. The research that they are assigned to do is determined by the interests of the faculty.
and parasitology. If appropriate, projects can involve work in other departments. Graduate students sometimes are advised jointly by faculty in those departments.

On admission, each new graduate student is assigned a temporary advisor, chosen to complement the research interests of the student. The temporary advisor guides the student through initial requirements and acts as the student's advocate. For purposes of grants and student evaluation, research training is categorized by four designations: developmental biology, ecology and evolution, genomics, and physiology. The department expects new students to do research in their laboratories or on a rotating basis during their first year.

A graduate advisory committee evaluates and advises students initially. After the first two semesters, students choose a permanent advisor (supervisor) and a Ph.D. advisory (dissertation) committee. Afterwards, responsibility for evaluation is shared by the dissertation committee and the advisor's area committee.

Master of Science in Biology

Although the department emphasizes the Ph.D. degree, two M.S. programs are available.

M.S. with Thesis

The M.S. degree with thesis requires 30 semester hours of graduate credit and a thesis on original research. Ordinarily, 6-8 semester hours are assigned to thesis research and writing. The remaining hours are selected in consultation with the M.S. advisory committee; the choice of courses is tailored to students' backgrounds and career goals. Students are required to maintain a grade of C- for courses they are required to take, but credit awarded for courses required by the dissertation committee to make up undergraduate deficiencies does not count toward the 30-semester-hour requirement. After the thesis is accepted, candidates must pass an oral examination on the thesis and related subjects.

M.S. without Thesis

The M.S. degree without thesis requires 34 semester hours of graduate credit and a library research report for which no more than 12 semester hours of credit may be granted. Credit may be earned in graduate courses in biology or cognate science; these courses are determined in consultation with the student's thesis committee and are tailored to fit the student's background and career goals.

Credit earned in courses at the 200 level or above, with the exception of courses in biology, required to make up deficiencies (C- allowed) may be included in the 34-semester-hour minimum if approved by the advisory committee. On completion of the hours requirement and acceptance of the research report by their faculty sponsors, students must pass a final examination covering their graduate program in biology, including the area of their report.

Doctor of Philosophy

Each Ph.D. student's formal course or proficiency requirements are determined by the dissertation committee on the basis of the student's background and current and prospective research interests. The dissertation committee also determines what portion of the formal course work or proficiency requirements students must complete before taking the comprehensive examination, which admits them to full candidacy for the Ph.D. degree. In this examination, students must demonstrate a knowledge of biology fundamentals and the analytic and synthetic skills necessary to become creative and independent scientists.

The program culminates in students' presentation of a dissertation based on original, independent research. Students must take a final examination, which covers the thesis and the specialized field the thesis represents. Before the department can accept the thesis, the final examination must be passed.

Financial Aid

All graduate students making satisfactory progress in the department receive support from teaching and research fellowships, research assistantships provided by the university or by individual research grants administered by faculty members. First-year students ordinarily are supported by departmental fellowships during the academic year. Stipends and tuition fees are available through financially aided, interdepartmental training programs in cell and molecular biology and genetics. Students who apply for one departmental award may be considered for others.

Applications for these fellowships and assistantships are made each year. Information about assistantships and fellowships for the following academic year are billed by the end of April, but opportunities occasionally exist for assistantships at other times, including the beginning of the spring semester. Requests for appointments should include clear statements of research interests.

Admission

Applicants for graduate admission should have a grade-point average of at least 3.00 and a Graduate Record Examination (GRE) General Test (verbal plus quantitative) score higher than 1100. These criteria are not absolute; instead, they serve as general guidelines to the admissions committees, which consider applicants' letters of recommendation, research experience, and other appropriate criteria. Applicants also take the Graduate Record Examination or the Graduate Record Examination Advanced Biology test and submit their scores. Although most applicants have completed undergraduate programs in biology, the department considers applicants with backgrounds in biology, physics, ecology, evolution, genomics, molecular biology, microbiology, and other related areas. Application should be submitted by February.

Facilities

The department is housed in a cluster of three contiguous buildings. It has support facilities for the care of many kinds of animals and special facilities for research with viral, DNA sequencing and synthesis, electro microscopy, fruit flies, plants, and in various organisms. It has numerous walk-in and reach-in environmental chambers for special cell cultures or plant and animal care needs.

The department is equipped to carry out state-of-the-art research in all areas in which graduate teaching is conducted. All modern equipment (ultracentrifuges, fluorescence microscopes, controlled environment growth chambers, ultracentrifuges) is available for graduate student research.

In addition to departmental facilities, a number of comprehensive facilities exist. A DNA oligonucleotide synthesizer and electron lab is available, an oligonucleotide synthesis and sequencing equipment room and NMR spectroscopy facilities, and a confocal laser image analysis facility. A hyperbaric facility does laser and surgical procedures and provides researchers with experimental animals. A campus fermentation lab grows large numbers of yeasts and other microbes for use in protein isolation. The department also owns an electron microscope facility, and there is a University electron microscopy lab with scanning and transmission electron microscopes.

Computing facilities are available in the department and at the main computer building. Graduate students have their own special computing facilities, and terminals are linked to the campus mainframe. One of the only scientific research analysis facilities in the world is available in the department in the area of mass spectrometry. Finally, there are animal rooms and growth media production labs.

In short, the department and the University provide every resource necessary to the biological sciences from the molecule to the population level.

Iowa Lakeside Laboratory

Courses in basic biology and aquatic biology at the Iowa Lakeside Laboratory extend the off-campus work in ecology. See "Iowa Lakeside Laboratory" in this section of the Catalog.

Courses

Primarily for Undergraduates

27000 Cooperative Education Internship 0-8-4
37.120 Topics in Botany 1.5 a.h.

37.125 Plant Science and Cytology 3.0 a.h.

37.130 Molecular Biology 3.0 a.h.

37.135 Molecular Genetics 3.0 a.h.

37.140 Microscopy and Electron Microscopy 3.0 a.h.

37.210 Advanced Microscopy and Electron Microscopy 3.0 a.h.

37.220 Advanced Plant Physiology 3.0 a.h.

37.230 Advanced Plant Physiology 3.0 a.h.

37.240 Advanced Plant Physiology 3.0 a.h.

37.250 Advanced Plant Physiology 3.0 a.h.

37.260 Advanced Plant Physiology 3.0 a.h.

37.270 Advanced Plant Physiology 3.0 a.h.

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37.490 Advanced Plant Physiology 3.0 a.h.

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37.540 Advanced Plant Physiology 3.0 a.h.

37.550 Advanced Plant Physiology 3.0 a.h.

37.560 Advanced Plant Physiology 3.0 a.h.

37.570 Advanced Plant Physiology 3.0 a.h.

37.580 Advanced Plant Physiology 3.0 a.h.

37.590 Advanced Plant Physiology 3.0 a.h.

37.600 Advanced Plant Physiology 3.0 a.h.

37.610 Advanced Plant Physiology 3.0 a.h.

37.620 Advanced Plant Physiology 3.0 a.h.

37.630 Advanced Plant Physiology 3.0 a.h.

37.640 Advanced Plant Physiology 3.0 a.h.

37.650 Advanced Plant Physiology 3.0 a.h.

37.660 Advanced Plant Physiology 3.0 a.h.

37.670 Advanced Plant Physiology 3.0 a.h.

37.680 Advanced Plant Physiology 3.0 a.h.
Bachelor of Arts
The B.A. curriculum provides a broad background in botany yet allows more electives than does the B.S.
In addition to the general requirements of the College of Liberal Arts, students majoring in botany are required to take the following:

Botany and Biology Requirements
- 212 Introduction to Botany 4 s.h.
- 373 Principles of Animal Biology 5 s.h.
- 218 Fundamental Genetics 3 s.h.
- 213 Plant Anatomy 4 s.h.
One course from each of the following four terra (17-30 semester hours), and one additional 100-level course in botany or cognate sciences.

- Physiology and Cell Biology
  - 219 Plant Physiology 4 s.h.
  - 217 Plant Physiology 4 s.h.
  - 214 Cellular Plant Physiology 4 s.h.
  - 2125 Plant Biochemistry 4 s.h.
  - 3105 Cell Physiology 4 s.h.

- Vascular Plant Diversity
  - 2400 Land Plants: An Evolutionary Survey 4 s.h.
  - 2121 Plant Taxonomy 4 s.h.
  - 21211 Summer Plants 3 s.h.
  - 2122 Paleobotany 4 s.h.
  - 1105 Plant Taxonomy 5 s.h.

- Ecology and Evolution
  - 21110 Physiologv 4 s.h.
  - 21121 Evolution 4 s.h.
  - 2116 Field Ecology 4 s.h.

- Biology of Nonvascular Plants
  - 21652 Algae and Fungi 4 s.h.
  - 21610 Bryology-Lichnology 4 s.h.
  - 21121 Field Mycology 3 s.h.

- Chemistry Requirements
  - 411 Principles of Chemistry I 3 s.h.
  - 411 Principles of Chemistry II 3 s.h.
  - 411 Principles of Chemistry Lab 2 s.h.
  - 411 Sodium Chemistry I 3 s.h.
  - 411 Sodium Chemistry II 3 s.h.
  - 41110 Biochemistry 3 s.h.
  - 41110 Biochemistry and Molecular Biology I 4 s.h.

- Mathematics Requirements
  - One of the following courses (students should consult with their advisor):
    - 2216 Mathematics for the Biological Sciences 4 s.h.
    - 22161 Calculus for the Biological Sciences 3 s.h.
    - 22810 Elementary Functions 3 s.h.
    - 22815 Calculus I 4 s.h.

Teacher Certification
Students preparing to teach in secondary schools should consult the "College of Education" section of the Catalog regarding requirements for teacher certification.

Honors
An undergraduate program leading to graduation with honors provides opportunities for participation in independent research projects guided by faculty members.

In addition to the regular requirements for the B.A. and B.S. degrees, honors students must:
- Maintain an overall grade-point average of 3.50.
- Maintain a minimum grade-point average of 3.20 in all botany and biology courses.
- Complete 4-6 semester hours of honors coursework which include a minimum of 4 semester hours in 200-level Honors Research.
- Submit a written research proposal and a written research report (thesis), which have been approved by the student's research supervisor, the botany honors advisor, and the faculty member who has been designated as the thesis advisor before a committee composed of the botany honors research advisor, the student's research supervisor, and a third faculty member chosen by the student and the honors advisor.

Minor
The botany minor requires 15 semester hours of credit in botany with a minimum grade-point average of 2.00, at least 12 of which must be taken at The University of Iowa in courses numbered 2100 and above.

Graduate Programs
An advanced degree enhances career opportunities in botany. The department offers advanced degree work in anatomy, ecophysiology, cell biology, ecology, genetics, plant molecular biology, development and morphogenesis, mycology, palaeobotany, palaeoecology, physiology, plant biochemistry, and taxonomy. A training program involving interdisciplinary study that requires some coursework in cognate departments. Each graduate student is assigned a faculty advisor to guide their research and plan the course requirements necessary to meet the graduate requirements.

Master of Science
The botany department offers two distinct M.S. degree programs, one with thesis and one without. The M.S. with thesis places greater emphasis on independent research and less on formal coursework. It is intended for primarily individuals who have a strong course background in botany or biology.

Master's Degree without Theses
Each student must:
Submit a program of study approved by a graduate committee consisting of three members of the graduate faculty, one of whom may be from another department, the graduate advisor being prepared during the first semester in residence as a regular graduate student.
Complete at least 34 semester hours of graduate courses in botany or supporting areas, as prescribed by the graduate committee; or honors research (2225) are required. Additional research hours may be taken, but no more than 6 may be counted toward the 34-semester-hour degree requirement.
Achieve a grade-point average of 3.00 or better on all courses other than research—completed prior to the final examinations.
Pass a written examination during the term in which the student is in residence (individual committee members may opt not to give a written examination in their areas), followed by a written examination; these examinations cover the student's courses and research experience.

Master's Degree with Theses
Each student must:
Submit a program of study (as for the M.S. without thesis, above);
Complete at least 30 semester hours of graduate courses in botany or supporting areas, as prescribed by the gradate committee (2225 and 2228) are required; additional research hours may be taken, but no more than 9 may be counted toward the 30-semester-hour degree requirement.
Achieve a grade-point average of 3.00 or all courses other than research—attempted up to the time of the final examination.
Prepare a thesis on research conducted; defend the thesis in an examination during the term in which the student is in residence.

Doctor of Philosophy
The Ph.D. is primarily a research degree. The student must conduct original research of sufficient magnitude to allow a thesis to be written and successfully defended prior to the final examination(s). In addition, the student must complete 72 semester hours of graduate coursework, including research as prescribed by the graduate committee. Hours earned for the master's degree may be counted toward the 72-semester-hour minimum. The graduate committee may also require that course work beyond the 72 semester hours be taken to meet specific proficiency requirements (e.g., language or statistics) or to make up for background deficiencies.
The student must fulfill the specific degree requirements as follows:

Submit a program of study for the Ph.D. program to the Graduate Committee in the first semester in residence as a Ph.D. candidate; the program must be approved by the Graduate Committee.

Complete an initial research proposal within two or three months after admission to the Ph.D. program (see below). This proposal, which should be approved by the Graduate Committee, should outline the specific objectives, significance, and methodology of the proposed research project, and must be approved by the Graduate Committee. A copy of the approved proposal must be submitted by the candidate to the Graduate Committee.

Complete an oral presentation of the proposed research work to members of the university and departmental graduate committee during the first semester in residence. The candidate must present a oral comprehensive examination when formal coursework has been completed and prior to the final examination for review.

The requirements for the thesis research are a minimum of 12 months, preferably before the thesis defense. The final examination will be conducted by the Graduate Committee, as outlined above.

Division of the thesis research are in the area of the candidate's major field of study.

The Ph.D. program is designed to provide the candidate with a broad understanding of the subject matter and significant contributions to the field of study.

Graduate Admission

University Requirements

An application for admission to the Graduate College must be completed and sent to the Director of Admissions, The University of Iowa, Iowa City, Iowa 52242. Official transcripts from each college of the candidate are required. The candidate must complete the following courses:

- A grade-point average of at least 3.40 on graduate work.
- A GRE General Test score of at least 1200.
- Three letters of recommendation.
- A major in biology or a related field.

Financial Aid

New students writing to apply for assistantships or fellowships may submit an application for graduate awards at least three months prior to the start of the fall quarter. The application forms may be obtained from the Office of Admissions, the Graduate College, or the departmental office.

Applications for teaching assistantships are reviewed by the faculty, those for research assistantships are reviewed by the departmental chair, and those for non-research assistantships are reviewed by the Graduate College, upon recommendation by the departmental chair.

The kinds and amounts of support for graduate study in botany are as follows:

- Teaching assistantships. Appointments to assistantships require the student to provide approximately 20 hours of work per week. Appointments pay resident tuition rates.
- Summer research fellowships. These are available for outstanding graduate students. Research is to be done during the summer quarters.
- Summer research fellowships. These are available for outstanding graduate students. Research is to be done during the summer quarters.
- Graduate assistantships. These are awarded by the departmental committee and are made on the basis of academic achievement.
- Financial aid for graduate students. Awardees are selected by the departmental chair, and those for non-research assistantships are reviewed by the Graduate College, upon recommendation by the departmental chair.

Special Facilities and Activities

The Chemistry-Botany Building houses an excellent botany library. The department's library is located in the building. The library is open to all students. The library is open to all students. The library is open to all students. The library is open to all students.
following course, or its equivalents, are required:

14:12-12 Elementary Greek 8 a.h.
14:21-12 Second-Year Greek I-II 8 a.h.
20:16-17 Second-Year Latin I-II 8 a.h.
14:21-22 Honor and Travel, and Honors Latin 6 a.h.
or
20:81 Age of Cicero 3 a.h.
and
20:82 Age of Augustus 3 a.h.

14:111 Elementary Greek Composition 3 a.h.
or
20:171 Elementary Latin Composition 3 a.h.

Major in Ancient Civilization

This major is sponsored by the Schools of Art and Art History and Religion and the Departments of Classics and History. The major concentrates on the ancient civilization of the Mediterranean world and the courses offered by various departments of the University. It is not primarily a preparation for a graduate degree program, nevertheless, it provides a sound basis for preparing teachers at the secondary and junior college levels. In addition to the normal college requirements for the B.A. degree, the following are the specific requirements of the major.

Ancient art 6 a.h.
Ancient history 6 a.h.
Ancient philosophy or religion 6 a.h.
Classics (either "Classics in English" courses, or Latin or Greek language courses) 6 a.h.
Appropriate courses in art, history, philosophy, religion, or linguistics 3 a.h.
14:194 Seminar in Ancient Civilization 3 a.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 readings and discussions are with an ancient author or a held in ancient history or literature chosen by the student and the instructor. During the first semester students present an essay every other week; at the end of the second semester they present a long paper, which is examined by at least three 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 12 must be in advanced courses taken at the University of Iowa. Students may earn a minor from the department in four areas: Greek, Latin, classics, and ancient civilization. The following courses are considered advanced for the minor.

Greek

14:11-12 Second-Year Greek I-II 6 a.h.
All courses numbered 14:12 or higher.
Courses numbered 14:100-110 do not count toward the minor because they are not courses in Greek language.

Latin

20:16-17 Second-Year Latin I-II 6 a.h.
20:81 Age of Cicero 3 a.h.
20:82 Age of Augustus 3 a.h.
All courses numbered 20:121 or higher.
Courses numbered 20:110-120 do not count toward the minor because they are not courses in Latin language.

Classics

14:11-12 Second-Year Greek I-II 6 a.h.
20:16-17 Second-Year Latin I-II 6 a.h.
20:81 Age of Cicero 3 a.h.
20:82 Age of Augustus 3 a.h.

These courses or their equivalents are required for the minor in classics, so that students will have had both Greek and Latin.

Ancient Civilization

All courses numbered 14:100, 20:100, or higher, appropriate courses from the schools of Art and Art History and Religion and the departments of History and Philosophy, as selected by the interdisciplinary committee on the major in ancient civilization.

14:26 Introduction to Ancient Art 3 a.h.
20:81 Age of Cicero 3 a.h.
20:82 Age of Augustus 3 a.h.

Language for Nonmajors

Students who want to satisfy the College of Liberal Arts foreign language requirement for the B.A. degree by studying Greek should take 14:12 Elementary Greek and 14:11-12 Second-Year Greek I-II. Students who want to meet the requirement by studying Latin may elect 20:122 Elementary Latin or 20:15 Advanced Latin, and 20:16-17 Second-Year Latin I-II.

Graduate Programs

For the general requirements of the Graduate College, including the comprehensive examinations, see the "Graduate College" section of the Catalog. Graduate students in classics may not include in their programs more than 6 semester hours of courses numbered 101-199.

Master of Arts

The department offers the M.A. degree in Greek, Latin, or classics. Candidates must earn a minimum of 30 semester hours of major credit in courses numbered 101 and above. Usually, students in the Latin program who have not had Greek are expected to include at least one introductory Greek in their programs.

Doctor of Philosophy

Required Courses

A one-semester course in Greek rapid readings (3 a.h.)
A one-semester course in Latin rapid readings (3 a.h.)
Advanced Greek composition (3 a.h.) or equivalent
Advanced Latin composition (3 a.h.) or equivalent
Survey of Ancient Near East and Greece (3 a.h.)

The Hebronite World and Rome (3 a.h.)

Any two of the following three courses: Comparative Greek and Latin (3 a.h.)
Greek Paleography (3 a.h.)
Any 3 a.h. graduate-level art course

The minimum Graduate College requirement in 72 semester hours; the difference is to be made up from regular departmental offerings.

Required Ph.D. Examinations

Precomprehensive

French competence
German competence
Greek (oral) (3 a.h.)

One aught exam must be attempted by the end of the first year of graduate study.

Ph.D. Comprehensive

Request for the comprehensive examination must be filed at least three weeks before the date of the examination. Candidates have the option of taking examinations 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

Dissertation

Facilities

Extensive collections of classical texts and periodicals are 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 varied collection of all of the classical subjects, and a small library. Associated with the department, the classical museum contains a valuable collection of cistels, vases, and facilities in
Honor

A degree with honors in communication studies requires maintenance of a 3.20 grade-point average, membership in the College of Liberal Arts Honors Program, and completion of an honors thesis in the senior year. The honors thesis, which may be taken for 3-6 semester hours of credit over two semesters, offers a unique opportunity for students to develop expertise and contribute to knowledge in a selected area. As prerequisites to registering for thesis credit, candidates first must choose a faculty member to supervise the project, then have a prospectus for the project approved by that faculty member and the departmental honors advisor. The completed thesis is defended before a committee consisting of the faculty advisor, the departmental honors advisor, and one other faculty member.

Students who enroll in the honors program are eligible to take courses labeled "honors only" in the Schedule of Classes and to add as honors designation to any other departmental course by completing an agreement with the course instructor for special work in that course. Forms providing instructions are available from the honors advisor.

Minor

A minor in communication studies requires 15 semester hours of credit in communication studies with a minimum grade-point average of 2.00. Of the 15 semester hours, at least 12 must be in University of Iowa courses numbered 20600 and above.

Graduate Programs

Master of Arts

A student can earn a Master of Arts degree in communication studies. The Master of Arts degree may be obtained in one of the divisions in communication studies. Departmental requirements for the Master of Arts degree are:

- A minimum of 36 semester hours, including 28000-28999 research and at least two courses numbered 200 or above (the requirements for some programs in the department are greater than this minimum).
- A research thesis or a nonthesis, a graduate course in an environmental, significant, original research; and
- Successful completion of a six-hour written examination, the scope of which is determined by the candidate's division and graduate committee and, at least, 50 cumulative grade-point average for all courses in the plan of study.

Applicants for summer session or fall semester whose papers are received by February 1 have the best chance of admission. The minimum cumulative undergraduate grade-point average required for admission in good standing is 2.75.

Facilities

The Communication Studies Building, one of the newest facilities on campus, has been designed specifically to meet both research and technical needs. Included are two television studios, a complete video postproduction facility, a film sound stage, a video shop, areas for animation and graphics production, a radio studio, and an advanced 24-track audio studio that serves the needs of courses throughout the program. A large pool of equipment is available to support student work in both studios and in other settings. Students and scholars have access to a video and film library, individual viewing areas, a lab complex for experimental and survey research, and a computer for research efforts. The Communication Studies Building is one of the best facilities of its kind in higher education.

Interdisciplinary Course

26180 Cooperative Education Internship

26190 Research Colloquium

26195 Issues in Communication Studies

26500 Problems in Communication Methods

26729 Workshop in Teaching Communication

26739 Workshop in Teaching Communication/Technology

36170 Doctor of Philosophy

Doctoral requirements for the Doctor of Philosophy degree are:

- A minimum of 44 semester hours of graduate credit, including dissertation and including 12-18 hour sequence in an approved research skill.
- A minimum of 10 semester hours of dissertation credit.
- 36,000 Introduction to Communication.
- At least two courses in theory taken within the department, and others approved by the student and graduate committee, in consultation with the student.
- Successful completion of a qualifying and a dissertation examination. The student's major research area.
- A substantial scholarly dissertation; 2.00 minimum cumulative grade-point average for all courses in the plan of study.

Applicants for summer session or fall semester whose papers are received by February 1 have the best chance of admission. Admission decisions are based on composite consideration of the applicant's undergraduate achievement, the nature of research, and other evidence of scholarly potential or achievement; such as Graduate Record Examination (GRE) General Test results and samples of scholarly work.

Communication Education

The communication teaching major requires a minimum of 33 semester hours of coursework in the Department of Communication Studies. Students must take four foundation courses across four core areas of the field, media and culture; communication, courses, two theatre arts courses, and any other course that meets requirements. This program is designed to give students the skills and knowledge needed to be successful in a variety of fields.

Applicants for summer session or fall semester whose papers are received by February 1 have the best chance of admission. The minimum cumulative undergraduate grade-point average required for admission in good standing is 2.75.

Educational Specialist (for Junior College Teaching)

Departmental Requirements for the Educational Specialist degree are:

- A minimum of 60 semester hours, including 30,000 Introductory to Research, a course in teaching communication, an approved seminar, and at least 19 semester hours completed in the College of Education graduate program is higher education.
- Successful completion of a research report.
- A semester internship in an assigned teaching position.
- Satisfactory performance on a nine-hour written examination covering areas of learning agreement by the student and his or her graduate committee.
- Successful completion of such additional requirements as are specified by the departmental division in which the student's work is concentrated.

Departmental Requirements for the Doctor of Philosophy degree are:

- A minimum of 44 semester hours of graduate credit, including dissertation and including 12-18 hour sequence in an approved research skill.
- A minimum of 10 semester hours of dissertation credit.
- 36,000 Introduction to Communication.
- At least two courses in theory taken within the department, and others approved by the student and graduate committee, in consultation with the student.
- Successful completion of a qualifying and a dissertation examination. The student's major research area.
- A substantial scholarly dissertation; 2.00 minimum cumulative grade-point average for all courses in the plan of study.

Applicants for summer session or fall semester whose papers are received by February 1 have the best chance of admission. The minimum cumulative undergraduate grade-point average required for admission in good standing is 2.75.

Evaluation of credit towards the Master of Arts degree is based on the nature of the completed work, which may be the equivalent of one or two courses taken at an approved institution. Unlike Graduate Studies, courses taken at an approved institution cannot be counted toward the Master of Arts degree.
Introduction to theatre and research methodology in theater.}

Communication Research

The program in communication research is designed for persons interested in research on interpersonal communication and group communication. Students will analyze social aspects of this discipline with a special emphasis on group decision making and relational communication. In addition to general departmental requirements, students study social sciences and select appropriate research in division from those listed below.

Courses

26.325 Communication Organizational Theory 3.0 h

26.352 Organizational Communication: Theory and Research 3.0 h

26.356 Communication Theory and Research 3.0 h

26.360 Communication Research 3.0 h

26.362 Communication Research Methods 3.0 h

26.363 Communication Research: Persuasion and Persuasive Argumentation 3.0 h

Rhetorical Studies

The program in rhetorical studies leads either to the M.A. or the Ph.D. degree. It is a broad-based course of study in the history of rhetorical studies, the criteria of rhetorical discourse, and the relationships between rhetorical activities and other dimensions of society. Some formative courses in history and criticism are offered on the 100 level and are listed under "Communication." These courses, taken in the fall of the first year, begin the 200 level. Advanced courses in special areas of rhetorical theory are offered at the 400 level. Prospective 200 level and seminar courses (300 level) allow students to develop expertise in various historical, critical, and theoretical approaches to rhetoric and communication.

Master of Arts

The program in rhetorical studies awards a basic knowledge of rhetorical history, criticism, and theory. That goal usually is achieved by work in the division in either the Ph.D. degree program or the University. The degree is intended to broaden the student's understanding of the nature and functions of communication in society. Rhetorical studies courses in special areas of communication theory are offered at the 400 level. Prospective 200 level and seminar (300 level) allow students to develop expertise in various historical, critical, and theoretical approaches to rhetoric and communication.

Doctor of Philosophy

The program in communication research leads to the Ph.D. degree. Students who have completed the M.A. degree and are enrolled in the doctoral program in communication research are candidates for the Ph.D. degree. Doctoral students must complete a comprehensive examination and must pass an oral examination in a major area of study.

Research Opportunities

Doctoral students have opportunities for research in various areas of communication. They may choose to work in the areas of communication and mass media, interpersonal communication, teaching and learning, and instructional design.

Summer Seminar in Communication Research

3.0 h

Communication Research is a seminar in communication research. The seminar is designed to provide an overview of the major areas of communication research and to introduce students to the research process. Students will have the opportunity to develop research proposals and to write research papers. The seminar is open to graduate students in communication, psychology, and sociology.

Communication Research 3.0 h

Communication Research is a seminar in communication research. The seminar is designed to provide an overview of the major areas of communication research and to introduce students to the research process. Students will have the opportunity to develop research proposals and to write research papers. The seminar is open to graduate students in communication, psychology, and sociology.

Communication Research Methods 3.0 h

Communication Research Methods is a seminar in communication research methods. The seminar is designed to provide an overview of the major areas of communication research methods and to introduce students to the research process. Students will have the opportunity to develop research proposals and to write research papers. The seminar is open to graduate students in communication, psychology, and sociology.

Communication Research: Persuasion and Persuasive Argumentation 3.0 h

Communication Research: Persuasion and Persuasive Argumentation is a seminar in communication research focusing on persuasion and argumentation. The seminar is designed to provide an overview of the major areas of communication research focusing on persuasion and argumentation and to introduce students to the research process. Students will have the opportunity to develop research proposals and to write research papers. The seminar is open to graduate students in communication, psychology, and sociology.

Communication Studies • Liberal Arts 101
Broadcasting and Film

Bachelor of Arts

This program is intended for students interested in film and electronic media as the focus of a liberal arts education. It assumes that anyone pursuing a career in these fields requires an understanding of the technical expertise and theory, but also should ground their work in the larger context of how mass media's place in personal and cultural experience. Conversely, it assumes that no one can understand the history, theory, and criticism of the electronic mass media totally apart from experience and knowledge of production. As artistry, theories of aesthetics, culture, and communication all come together in this program, it makes it an excellent choice for those who want to study media and their mediated creations.

Students enrolling in production, writing, show, edit, direct, and present film, radio, and television programs. In addition, students obtain a background in the history of the mass media so that they understand the reasons for the industry's present state and possible future. As the field of mass media theory and criticism teach students to appreciate what goes into creating a successful work and to understand the impact that creative and economic/political decisions may have on audiences and society at large.

To graduate with a B.A. in broadcasting and film, students must complete 30 semester hours in the department, including:

Four foundational courses across four core areas

12 s.h.

300-145 Introduction to Broadcast and Film Production
3 s.h.

At least three advanced courses

(numbered above 380/680) in one of the substracts: broadcast studies, film arts, film production, or television production.

9 s.h.

Any 6 semester hours of additional coursework at the 200 level or above

6 s.h.

Graduate Programs

These programs are for students in the arts of directing, producing, arts, and in the arts of administration.

3 s.h.

23 531 Mass Communication and Journalism
3 s.h.

Introduction to the principles of broadcasting and mass communication, and the role of the broadcast manager and the role of the journalist in society. Emphasis on current issues. Prerequisites: Mass Media 23 531 or 23 532.

3 s.h.

23 532 Mass Communication and Journalism
3 s.h.

Introduction to the principles of broadcasting and mass communication, and the role of the broadcast manager and the role of the journalist in society. Emphasis on current issues. Prerequisites: Mass Media 23 531 or 23 532.

3 s.h.

23 533 Media and Society
3 s.h.

Introduction to the principles of broadcasting and mass communication, and the role of the broadcast manager and the role of the journalist in society. Emphasis on current issues. Prerequisites: Mass Media 23 531 or 23 532.

3 s.h.

23 534 Media Theory and Practice
3 s.h.

Introduction to the principles of broadcasting and mass communication, and the role of the broadcast manager and the role of the journalist in society. Emphasis on current issues. Prerequisites: Mass Media 23 531 or 23 532.

3 s.h.

23 535 Media Production
3 s.h.

Introduction to the principles of broadcasting and mass communication, and the role of the broadcast manager and the role of the journalist in society. Emphasis on current issues. Prerequisites: Mass Media 23 531 or 23 532.
383/384 Levels of Human Communication
Theory 3 s.h.
Cognitive and goal theories examining many social, cultural, and psychological factors influencing individuals and groups involving communities.
385/386 Critical Approaches to Mass Communication
3 s.h.
An examination of the effects of mass media on individuals in society, including the role of mass media in shaping public opinion and political discourse.
383/385 Media and Society
Interactions between the mass media and society, including the role of the media in shaping public opinion and political discourse. 3 s.h.
385/386 History of Mass Communication
3 s.h.
A study of the development of mass communication over time, focusing on the evolution of communication technologies and their impact on society.
383/386 Topics in Mass Communications
3 s.h.
An exploration of specific topics within the field of mass communications, such as media ethics, media literacy, and media policy.
385/386 Communication and Community
3 s.h.
The role of communication in building and maintaining community relationships and social cohesion.
383/387 Senior Thesis or Research
1-4 s.h.
A supervised research project or thesis that provides students with an opportunity to apply the knowledge and skills they have acquired in their studies.
383/388 Senior Seminar: Theory and Practice
3 s.h.
A seminar that explores theoretical approaches to mass communications and their practical applications.
383/389 Senior Seminar: Mass Communications
3 s.h.
A seminar that explores the role of mass communications in society and the ethical considerations involved in the production and consumption of mass media.
383/384 Comparative Literature
3 s.h.
An exploration of the role of literature in shaping cultural identity and the ways in which literary works reflect and challenge dominant cultural discourses.
383/385 Graduate Course in Comparative Literature
3 s.h.
An advanced course in comparative literature that examines the intersections of literature and other disciplines, such as art, anthropology, and sociology.
383/386 Non-Western Literary Traditions
3 s.h.
An in-depth study of the literary traditions of non-Western cultures, focusing on the methods and strategies used by literary scholars to analyze and interpret these traditions.
383/387 Undergraduate Comparative Literature Program
3 s.h.
This program provides students with an opportunity to engage in comparative literary studies, examining similarities and differences between works from different cultural and historical contexts. Students will develop critical thinking skills, research skills, and a deep understanding of the literary traditions of different cultures. In addition, students will be exposed to a variety of literary forms and styles, allowing them to develop a nuanced understanding of the ways in which literature reflects and shapes cultural identities and values.

Undergraduate Program

The Undergraduate Comparative Literature Program is designed to provide students with a broad understanding of literary traditions and an appreciation for the diversity of human expression across different cultures and historical periods. Through a combination of coursework, research projects, and independent study, students will develop critical thinking skills, research skills, and a deep understanding of the literary traditions of different cultural and historical contexts. Students will be exposed to a variety of literary forms and styles, allowing them to develop a nuanced understanding of the ways in which literature reflects and shapes cultural identities and values.
Master of Fine Arts in Translation

The M.F.A. in translation promotes creative performance and study of languages, literatures, criticism, and cultural history. The aim of the program is to encourage the practice of literary translation and to bring about greater awareness of the role of translation, its contributions, and its possibilities. The Iowa Translation Workshop is the central course in the program.

Admission to the program is made 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 collection of pieces or a single novel, translated or written in the original language into English and accompanied by a critical introduction.

A total of 36 quarter-hours of graduate study is required, 24 of which must be taken at The University of Iowa. Besides workshop study, coursework includes study of the foreign literature(s), creative writing, 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, one in historical and two others—less time is allowed in areas of specialization. Study is encouraged to include an introductory/advanced area of concentration. All candidates are encouraged to develop the program to comparative study, bringing the following into focus: Specific areas and interrelations of areas are determined by the student in consultation with appropriate faculty members.

Some typical critical and comparative areas are European literature, classical literature, literature of the Islamic world, Asian literature, Latin American literature,Comparative literature and music, criticism, Semitic philology, African literature, and women's literature.

Some typical areas of specialization are religious literature, literature of the Islamic world, Latin American literature, African literature, and women's literature. Literature of the Islamic world includes the contributions of non-Muslim authors, such as Ahmad b. Muhammad b. Al-Iṣḥāq, who wrote in Arabic in the 11th century.

Comparative literature and music is an interdisciplinary field that examines the relationships between music and literature, as well as the influence of literature on music. Some typical areas of specialization are the influence of literature on music and the influence of music on literature. Literature of the Islamic world includes the contributions of non-Muslim authors, such as Ahmad b. Muhammad b. Al-Iṣḥāq, who wrote in Arabic in the 11th century.

Admission

The study of literature across linguistic boundaries requires special training in languages. A thorough knowledge of at least one foreign language is required in admission to the M.A. course of study.
Required Non-Dance Courses
A total of 6 semester hours at the 100 level or above must be earned from courses other than those with a 157 prefix. These courses, selected for the student and approved by the student's advisor, usually are from the disciplines of art and art history, music, theater, linguistics and film, physical education, and English.

Required Courses
Dance Technique
Two twenty-one semester hour periods from the following:

Dance Theory

Prerequisites
Advanced technique
Rhythmic analysis
2 s.h.

Dance Composition
3 s.h.

Dance History
6 s.h.

Anatomy
3 s.h.

Kinesiology
3 s.h.

Beginning Labanotation
3 s.h.

Compositional Analysis
4 s.h.

Compositions
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psychological implications of movement inventories (previously attempted).
5239 Microeconomics I 2.b.

5240 Microeconomics II 2.b.

5241 Macroeconomics I 2.b.

5242 Macroeconomics II 2.b.

5243 Corporate Finance 2.b.

5244 Mathematical Economics I 2.b.

5245 Mathematical Economics II 2.b.

5246 Mathematics for Economists 1.5.b.

5247 Econometrics I 2.b.

5248 Econometrics II 2.b.

5249 Applied Econometrics 2.b.

5250 Mathematical Economics I 2.b.

5251 International Trade Theory 2.b.

5252 Monetary Theory 2.b.

5253 Labor Economics 2.b.

5254 Industrial Organization 2.b.

5255 Advanced Microeconomics 2.b.

5256 Advanced Macroeconomics 2.b.

5257 Advanced Econometrics 2.b.

5258 Advanced Industrial Organization 2.b.

5259 Advanced Labor Economics 2.b.

5260 Advanced Mathematical Economics 2.b.

5261 Advanced Econometric Methods 2.b.

5262 Advanced Economic Theory 2.b.

5263 Advanced Microeconomic Theory 2.b.

5264 Advanced Macroeconomic Theory 2.b.

5265 Advanced Econometric Analysis 2.b.

5266 Advanced Economic Policy 2.b.

5267 Advanced Development Economics 2.b.

5268 Advanced Monetary Theory 2.b.

5269 Advanced Labor Economics 2.b.

5270 Advanced Industrial Organization 2.b.

5271 Advanced Labor Economics 2.b.

5272 Advanced Economic Theory 2.b.

5273 Advanced Microeconomic Theory 2.b.

5274 Advanced Macroeconomic Theory 2.b.

5275 Advanced Econometric Analysis 2.b.

5276 Advanced Economic Policy 2.b.

5277 Advanced Development Economics 2.b.

5278 Advanced Monetary Theory 2.b.

5279 Advanced Labor Economics 2.b.

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5281 Advanced Labor Economics 2.b.

5282 Advanced Economic Theory 2.b.

5283 Advanced Microeconomic Theory 2.b.
Bachelor of Arts

A Bachelor of Arts degree in major in English requires a minimum of 37 semester hours of credit in courses offered by the Department of English at least 16 of which must come from courses deemed principally with literature written before 1800 and at least 18 of which must be taken in residence at The University of Iowa.

In fulfilling the above requirements, English majors must complete at least:

- 3 semester hours in readings courses
- 3 semester hours in audit courses, of which no more than two are audited
- 3 semester hours in literature and culture courses, and
- 3 semester hours in cultural studies courses.

These requirements apply to all students who declare an English major following the close of the spring 1998 semester. The Schedule of Course for the semesters specified which English departments courses at all the above categories. The requirement of at least 3 credit hours focusing on literature written before 1800 may be satisfied by courses that also qualify other requirements for 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 the English major should consult the director of undergraduate programs in the English department, 308 English-Philological Building. The handbook for the School of English Major offers a more detailed view of the requirements, programs, and procedures for the English major. It is available in the office of undergraduate programs.

General Education Waivers for English Majors

Students who declare English majors may count the appropriate General Education requirements toward courses in fulfillment of the 80% General Education Requirements in humanities. No 80 courses can be counted toward the 33 semester hours required for the English major.

Minor

A Minor in English requires 15 semester hours of coursework in Department of English courses with a grade-point average of 2.0. Twelve of these semester hours should be in advanced courses (300 and above) taken at The University of Iowa. Coursewaivers for the liberal General Education Requirements do not count toward the minor in English.

Honors

The English major with honors offers talented students the opportunity to enhance their course of study through...
special courses and independent study. Each year the department offers four honors seminars covering a wide range of historical and topical areas. Students who wish to earn a degree with honors have two options. They may either:

- three seminars during the junior and senior years, and thus receive the three essays written on seminar papers and, with an introduction, present them as the honors project. or
- two of the seminars, preferably in the junior year, and 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 rarely and 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 locations are available in the English department office, 108B English-Philosophy Building. A Handbook, Guidelines and Deadlines, which describes both options for the final project in greater detail and specifies the deadlines for bearing in the presentation and the final honors project, is also available in the English office.

Creative Writing
Many undergraduates come to The University of Illinois because of the opportunities for creative writing and the creative writing program. With the consent of his or her advisor, any student may elect the undergraduate courses in this program. There are EN 23 Creative Writing, EN 511 Fiction Writing, and EN 510 Poetry Writing.

Admissions to the undergraduate workshops in Fiction and Poetry (EN 16
Undergraduate Fiction Workshop: Fiction and EN 16AB Undergraduate Writers' Workshop: Poetry) requires consent of the instructor. Students who wish to take part in these workshops must submit samples of their poetry or fiction to the Writers' Workshop along with their request for future registration and as late as the last day of registration.

English and Education
The department offers a flexible undergraduate program for students planning to teach English in elementary and secondary schools. Students who complete this program satisfy the requirements for a general major in English and for teaching certification.

Students who wish to be certified to teach English in Illinois secondary schools must select courses that fulfill the state guidelines for English teachers in grades seven through twelve.

Literary study for students planning to teach English should emphasize a range of close reading experiences in different kinds of literary texts. Literature of the world, Shakespeare, Irving, literature of the nineteenth and twentieth centuries, American literature, literature for adolescents, and spiritual

The requirements for both students are required to take 75.15 credits English, 50 credits English, and 30 credits in reading for secondary school students, as specified by the Department of Secondary Education. While this program meets minimum requirements for certification, the department recommends that students who wish to teach English consider equally more training in the field.

Graduate Programs

Master of Arts (Literary Studies)
The M.A. in literary studies is a program for students who want to acquire an understanding of what it means to study literature professionally. Those who seek an M.A. in literary studies may include students who would like some exposure to graduate study before deciding whether to continue toward a doctorate; teachers in secondary schools who want to gain extra degrees in education; or independent readers and writers seeking intellectual growth unrelated to a specific career objective. All M.A. students are full participants in the community of the department and may enroll in any of its graduate courses or seminars.

Prospective English teachers should remember that an undergraduate degree represents only minimal training, so they should plan a program that will permit graduate study at a later time.

English majors seeking teacher certification must be admitted to the teacher education program and must plan with their advisers to take appropriate education courses concurrently with courses in English. In addition, students must devote one semester of their senior year to professional training apart from any other course work.

The department also participates in a joint major in English and elementary education. Students interested in this program should consult with their advisers in elementary education.

Students who wish to receive secondary teaching in fields other than English may seek minor certification in English. This is particularly appropriate for students majoring in speech, journalism, Spanish, French, or German. These students must complete 38-39 semester hours of English, excluding freshman courses in rhetoric, speech, or writing.

The English minor certification program must include a course in each of these areas: advanced composition, approaches to teaching high school writing, linguistics, American literature of the twentieth century. British literature of the nineteenth or twentieth centuries, literature for adolescents, and

Course Requirements

Literary history—four courses: each one of five hours or more. At least one course must be numbered 300 or above.

Language and writing—one course in the history, philosophy, psychology, or instruction of language in the practice or teaching of expository writing.
Thesis or Comprehensive Examination

The student must complete two ways to complete the program.

The usual conclusion is an eight-hour written comprehensive examination based on a reading list chosen from the various periods of English and American literature. Students may obtain copies of the current reading list from the English Department office. Undergraduate students must take the written comprehensive examination prior to the winter quarter following the last term of the senior year. Graduate students may take the examination prior to the winter quarter of their last term. The examination consists of a minimum of 100 questions, selected from the reading list chosen from the various periods of English and American literature. The examination is administered by the English Department.

Doctor of Philosophy

The Ph.D. program is designed as a four-year program consisting of a teaching, publishing, and research requirement of 72 semester hours of graduate credit, with at least 30 of those hours of graduate credit, at least 30 of which must be earned in residence at The University of Iowa. The Ph.D. program is designed to accommodate the needs of students who are interested in a wide range of academic disciplines. The program is designed to provide students with a comprehensive understanding of their chosen field of study, as well as an appreciation of the broader context in which it is situated.

Requirements for the Ph.D.

Admission requirements include:

1. A bachelor's degree from a recognized institution with a minimum GPA of 3.0 on a 4.0 scale.
2. A statement of purpose outlining the student's academic and research goals.
3. Letters of recommendation from at least three academic or professional references.
4. A writing sample demonstrating the student's ability to think critically and express ideas clearly.

The English Department at The University of Iowa offers a wide range of opportunities for students interested in pursuing advanced degrees in English. The Department has a long-standing reputation for excellence in teaching and research, and its programs are designed to prepare students for careers in academia, industry, or government. The Department is located in the University of Iowa Library, which houses one of the largest collections of English language and literature materials in the world. The library's extensive resources provide students with access to a wealth of primary and secondary sources, as well as a variety of databases and online resources. The Department also offers a range of courses, seminars, and workshops that provide students with opportunities to engage with current issues and trends in English studies.
series of readings and lectures by poets, fiction writers, and scholars open all year to students in the department.

The Association of Graduate Students in English sponsors social and intellectual events during the year and provides a forum for student opinion. All graduate students in the department are members.

Courses
Individual descriptions for the English courses listed here are not included because courses and requirements vary considerably from semester to semester. Detailed course descriptions for all undergraduate courses is a specific semester are published in the Liberal Arts Guide as Courses. Detailed course descriptions for a given semester's courses are available in the English department office well in advance that semester.

General Education Literature
The General Education Requirement in the humanities is fulfilled by taking RG 1. The Interpretation of Literature and two other approved humanities courses, RG 2, or (its equivalent by examination or transfer) is a prerequisite for all other courses (RG 6) and must be taken first. The pass/fail option is available only for students under 21 years of age, women, and engineering with the consent of the student's advisor and the instructor. Students must successfully complete the requirement before they may elect HG courses.

RG 1 The Interpretation of Literature 3 cr.
Poetry, short fiction, drama, and the novel. North and American, German, humanist.

RG 2 Biblical and Classical Literature 3 cr.
Hebrew, Greek, Latin, and the Byzantine tradition; Greco-Roman literature, special attention; courses, 3 cr. English, Greek, Latin. General Humanities, Preprofessional, Philosophy.

RG 3 Medieval and Renaissance Literature 3 cr.

RG 4 Epic and Tragic Literature 3 cr.

RG 5 The Forms of Greek Fiction 3 cr.
The scope of Greek imagination as a contrast to social conventions and their diverse points of view. Greek literature. Preprofessional, English, Humanities, Latin, and Latin. Preprofessional, Philosophy.

RG 6 Narrative Literature 3 cr.
Religious, mythological, and fairy literature from the 6th century A.D. to the present. Preprofessional, English, Humanities, Preprofessional.

RG 7 Lyric Poetry 3 cr.
Poetry from major periods of development up to the present. English, Latin, and Latin. General Humanities, Preprofessional, Philosophy.

RG 8 Literature of the "Middle Ages" 3 cr.
Selections from medieval literature up to the present. Medieval, modern, and comparative literature in the original languages and in translation. English, Latin. Humanities. Preprofessional, Philosophy.

RG 9 American Litera 3 cr.

RG 10 The Present "World" 3 cr.
The causes of the author's "existence."" A study of contemporary civilization, and its values, as we perceive them today. Preprofessional, Philosophy.

RG 12 Comic and Tragic Literature 3 cr.
Intermediates of comedy and tragedy, their significance and their creation through human experiences. Preprofessional, Philosophy.

RG 14 Literature of the Armenian Peoples 3 cr.
Selections from works of Armenian descent from three regions: Western, Secret, and the Civil Eastern. Preprofessional, Philosophy. Preprofessional, Philosophy. Preprofessional, Philosophy.

RG 15 Women and Literature 3 cr.
Selections from medieval and modern literature. Women and literature. Preprofessional, Philosophy.

Primarily for Undergraduates
English department courses are open to all undergraduates who have satisfied the prerequisite requirements. In most cases, undergraduate students may complete one or more departament's courses below the 100-level before attempting 100-level courses. English majors are required to take at least one course from the first four categories.

Readings
These specialized discussion courses are intended for English majors, other students with considerable experience in the study of literature should consult the instructor before registering.

RG 34 Reading Needs 3 cr.
RG 35 Reading Papers 3 cr.
RG 36 Reading Short Stories 3 cr.
RG 37 Reading Plays 3 cr.
RG 38 Reading Novels 3 cr.
RG 39 Reading Criticism 3 cr.

Autors-
RG 61 Chaucer 3 cr.
RG 62 Shakespeare 3 cr.
RG 63 Milton 3 cr.
RG 64 Selected American Authors 3 cr.
RG 65 Selected Modern Authors 3 cr.
RG 66 Selected Authors 3 cr.
RG 67 Selected Authors 3 cr.
RG 68 Selected Authors 3 cr.
RG 69 Selected Authors 3 cr.
RG 70 Selected Authors 3 cr.
RG 71 Selected Authors 3 cr.

RG 69 Selected American Authors 3 cr.

Readers-
RG 104 Selected Black Writers 3 cr.
RG 108 Dante and Roman Poetry 3 cr.

Literature and Culture
RG 110 Literature and Writing of the Middle Ages 3 cr.
RG 119 Literature and Culture of the Renaissance 3 cr.
RG 120 Literature and Culture of the 18th Century 3 cr.
RG 140 Literature and Culture of 19th-Century America 3 cr.
RG 141 Literature and Culture of 20th-Century America 3 cr.

RG 127 Anglo-Saxon Literature and Culture 3 cr.
RG 131 Literature and Culture of 17th-Century England 3 cr.
RG 143 Literature and Culture of America Before 1800 3 cr.
RG 144 Literature and Culture of the 20th Century 3 cr.

Cultural Study
RG 121 American Folk Literature 3 cr.
RG 122 American Ethnic Literature 3 cr.
RG 123 American Indian Literature 3 cr.
RG 124 American Regional Literature 3 cr.
RG 125 American Literature I 3 cr.
RG 126 American Literature II 3 cr.
RG 127 Black American Writers 3 cr.
RG 128 Image of Black Women in Modern American Literature 3 cr.
RG 129 Image of Blacks in Modern American Literature 3 cr.
RG 130 Image of Blacks in Modern American Literature 3 cr.
RG 131 Image of Blacks in Modern American Literature 3 cr.
RG 132 Studies in the Poverty of American Predicament 3 cr.
RG 134 Studies in the Poetry of African-American Literature 3 cr.
RG 135 American Indian Literature 3 cr.
RG 136 American Indian Literature 3 cr.
RG 137 American Indian Literature 3 cr.
RG 138 American Indian Literature 3 cr.
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RG 139 American Indian Literature 3 cr.
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RG 146 American Indian Literature 3 cr.
RG 147 American Indian Literature 3 cr.
RG 148 American Indian Literature 3 cr.
RG 149 American Indian Literature 3 cr.
Period and Genre

8117 Literature and Art
Same as E47.777
3 a.h.
8119 Literary Society and Criticism
3 a.h.
8125 Energetic Fiction
3 a.h.
8155 Poise in Western Writers
Same as 115.386
3 a.h.

For Graduates

Introductory

8200 History of the Book
Same as 110.725, 123.253
3 a.h.
8257 Literary Magazines
1-4 a.h.

Medieval Language and Literature

8214 Fourteenth-Century Literature
3 a.h.
8215 Middle English Language and Literature
4 a.h.
8217 Fifteenth-Century Literature
Same as 4267

Literary Periods

8279 French in Sixteenth-Century Literature
3 a.h.
8280 Italian in Seventeenth-Century Literature
3 a.h.
8281 Restoration and Early Eighteenth-Century Literature, 1688-1714
3 a.h.
8282 Later Eighteenth-Century Literature, 1714-1800
3 a.h.
8283 Romantic Literature
3 a.h.
8284 Early Victorian Literature
3 a.h.
8285 Late Victorian and Edwardian Literature
3 a.h.
8288 British Literature, 1914-1947
3 a.h.
8289 Contemporary British Literature Since 1945
3 a.h.
8289 Early American Literature
3 a.h.
8289 American Romantic Literature
3 a.h.
8289 American Realistic Literature
3 a.h.
8289 American Modernist Literature
3 a.h.
8289 Early Twentieth-Century American Literature
3 a.h.
8289 American Poetry
3 a.h.
8289 American Fiction
3 a.h.
8289 Twentieth-Century American Literature
3 a.h.
8289 American Lyric
3 a.h.
8289 American Comedy
3 a.h.
8289 American Criticism
3 a.h.
8289 American Theory
3 a.h.
8289 American Criticism
3 a.h.

Special

8289 Graduate Education and Interdisciplinary Studies
3 a.h.
8289 Traditional Lyric Structures
3 a.h.
8289 Non-traditional Lyric Structures
3 a.h.
8289 Lyric Structures
3 a.h.
8289 Undergraduate Seminar
Same as 4275
3 a.h.
8289 Introduction to Critical Problems
Same as 4275
3 a.h.
8289 Literary Publishing
Same as 4275
3 a.h.
8289 Hand-Printed Book Problems in Design
Same as 4275
3 a.h.
8289 An Introduction to Recent Criticism
Same as 4275
3 a.h.
8289 Special Project for Undergraduates
3 a.h.

Honor

Open only to students admitted to the English department honors program. Instructor's consent may be required.

8150 Thesis Preparation
Same as 4275
3 a.h.

8255 Undergraduate Honors Project
3 a.h.

Authors

8257 Three American Writers
Same as 120.725, 123.727
3 a.h.
8257 Cooler
3 a.h.
8257 Spooner
3 a.h.
8257 Shakespearean
3 a.h.
8255 Selected Authors
3 a.h.

Literary Theory and Criticism

8250 History of Criticism: Plato to 1750
Same as 110.467, 123.467
3 a.h.
FRENCH AND ITALIAN

Chair: John T. Nosbisch
Coordinating Professor: Charles F. Altman, Jacques A. Boivin, Gérard Desmarais, Richard J. Golden, Steven Opie
Associate professors: Janet G. Altman, Wendell Baer, John C. Beal, Susan Blouin, Stephen Boivin, Jerry Friesen, Donald O. Golden, Michael Landau
Undergraduate degrees offered: B.A. in French, B.A. in Italian, C.G. degree in French

Undergraduate Programs

The department introduces students to the cultures of France and Italy, provides an understanding of their courts, historical and contemporary influence, and facilitates development of proficiency in the French and Italian languages. It also fosters critical appreciation of French and Italian literature and civilization.

Students may choose from a variety of programs of major in French and Italian and electives for nonmajors with appropriate language skills. They are afforded flexible means to meet the foreign language General Education Requirement of the College of Liberal Arts and to major individually and individually.

General Interest Practices and forms of creative writing

Creative Writing

All may be repeated for credit.

General Interest Practice and forms of creative writing

FRENCH AND ITALIAN

Chairs: John T. Nosbisch
Coordinating Professor: Charles F. Altman, Jacques A. Boivin, Gérard Desmarais, Richard J. Golden, Steven Opie
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General Interest Practices and forms of creative writing

Creative Writing

All may be repeated for credit.

General Interest Practice and forms of creative writing
Minor in French
The requirements for a minor in French are 15 semester hours with a minimum grade-point average of 2.00. Twelve of these must be taken at The University of Iowa in courses numbered 140-192, and 158 do not count toward the minor in French.

Bachelor of Arts in Italian
Requirements for the major in Italian include:

- 18-11-12 Intermediate Italian 6 s.h.
- 18-111-122 Advanced Composition and Civilisation 7 s.h.
- 18-105-106 Introduction to Italian Literature 6 s.h.
- 18-110-120 Medieval and Renaissance Italian Literature 5 s.h.
- A 400-level course taught in Italian 3 s.h.
- Total 28 s.h.

Minor in Italian
The requirements for a minor in Italian are 15 semester hours with a minimum grade-point average of 2.00. Twelve of these must be taken at The University of Iowa in courses numbered 106-195 or above.

Honors
The department participates in the College of Liberal Arts Honors Program. To gain admission to the honors program in French or Italian, a student must have a 3.00 overall grade-point average, a 3.50 department grade-point average, and be enrolled in the College of Liberal Arts Honors Program. For additional information about requirements for honors in French or Italian, consult the French and Italian honors advisor.

Summer Program in France
The department is coproprietor of a summer program in France for students enrolled in the three Iowa Regents universities. Eligibility for the program requires a good basic knowledge of French. Two years of college-level preparation is recommended, but students need not be French majors. Centered in Lyon, the program combines formal class work in language skills with an integrated course in the culture and civilization of France, including visits to points of cultural and historical interest. Students may earn 8 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 Université Laval. This CIC is a nonprofit organization whose purpose is to foster cooperative educational opportunities among the Big Ten universities and the University of California. Students interested in the Université Laval program should consult their Home School (Registrar) before enrolling. 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 cooperation with the Mission Francophone in the Foreign Language House at Hubbard Residence Hall. Residents include culture 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 36 semester hours of credit and pass a written and oral examination. The program must include 9-175 Advanced French Pronunciation, 9-120 Advanced Grammar and Lexicology, 9-120 Comparative Syntax, and at least four graduate-level (200-level) literature courses. With the permission of the departmental chair, candidates may take up to 6 of the required 36 semester hours outside the department.

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 6 may be in education or related fields, and at least 9 in graduate (200-level) courses in French literature. The following courses are suggested:

- 9-1295 Textual Analysis 3 s.h.
- 9-200 Advanced Grammar and Lexicology 3 s.h.
- 9-210 Comparative Syntax 3 s.h.
- 9-113-114 French Civilization 6 s.h.
- 9-120 Methods: Foreign Language 3 s.h.
- 9-122 Contemporary France 3 s.h.
- 9-175 Advanced French Pronunciation 2 s.h.

Candidates must pass a final written and oral examination.

Doctor of Philosophy
To fulfill requirements for the Ph.D. degree in French, candidates must complete at least 90 semester hours of graduate study, of which at least 60 must be spent in residence at The University of Iowa. They must pass a comprehensive examination and make a successful oral defense of their dissertation.

Specific requirements include:

- 9-251 Introduction to Old French Grammar and 4 semester hours of college study or equivalent proficiency in a foreign language other than French.
- Candidates also must complete three graduate courses, for a minimum total of 8 semester hours of credit in a related field, such as another literature, history, or philosophy, and must earn at least 6 semester hours of credit in 9-272 Thesis. Students working toward the doctorate are required to spend at least one year teaching as graduate assistants in the department.

Admission
To be considered for admission to a M.A. program in French, applicants must have completed the equivalent of The University of Iowa undergraduate major in French language and literature. They may make up deficiencies in previous training by taking appropriate courses.

The M.A. in French is prerequisite to admission to the Ph.D. program in French. Students applying for the M.A. program, however, does not necessarily qualify a student for the Ph.D. program. For students seeking the M.A. at The University of Iowa, the M.A. comprehensive examination committee makes a recommendation concerning admission to the Ph.D. program, subject to approval by the department chair. All candidates are required to maintain a grade point average of 3.00 or better to continue progress toward the degree.

The Graduate Record Examination (GRE) is not a requirement for admission to the M.A. program, but scores of 1350 or higher in the verbal and quantitative sections are required for the Graduate College.

Appointments
Teaching and research assistantships and University fellowships and scholarships are available to qualified graduate students. (See the "Graduate College" section of the...
Italian Courses

A detailed description of courses offered each semester is available in the department office. All courses are given in Italian unless otherwise indicated. Students may not repeat for credit a course that is prerequisite to, or whose equivalent is a prerequisite to, a higher-level course that they have already completed.

Primarily for Undergraduates

- **81 Elementary Italian**
  - 3 h.
  - For students who have no knowledge of either course.

- **82 Elementary Italian**
  - 3 h.
  - GER foreign language.

- **91 Intermediate Italian**
  - 3 h.
  - GER foreign language. Prerequisite: 81 or equivalent.

- **92 Intermediate Italian**
  - 3 h.
  - GER foreign language. Prerequisite: 81 in Italian.

- **90-92 Consolational Italian**
  - 3 h.
  - Prerequisites: 81 or 82.

- **90 Consolational Italian II**
  - 3 h.
  - Prerequisite: 90-92 or 81 or equivalent.

- **50 Special Work**
  - Any.

For Undergraduates and Graduates

- **100-102 Introductory Italian**
  - 3 h.
  - GER foreign language. Prerequisite: two years of another foreign language.

- **1004 Introduction to Modern Italian**
  - 3 h.
  - Prerequisites: 103.

- **1006 Introduction to Native Italian Literature**
  - 3 h.
  - Continuation of 1105, but may be taken as an introductory course. Prerequisite: 102 or equivalent.

- **1011 Advanced Composition and**
  - 3 h.
  - Prerequisite: 92 or equivalent.

- **1013 Advanced Composition and**
  - 3 h.
  - Prerequisite: 101.

- **1014 Studies in Italian Language**
  - 3 h.
  - Selection topics on the history of the Italian language. May be repeated. Prerequisite: 91 or equivalent.

- **1015 Medieval and Renaissance Italian Literature**
  - 3 h.

- **1024 Medieval and Renaissance Italian Literature**
  - 3 h.

- **1032 Special Work**
  - Any.

- **1034 Topics in Italian Civilization**
  - 3 h.

- **1039 Honors Research and Thesis**
  - 3 h.

- **1039-1040 Advanced and**
  - 3 h.
  - Prerequisite: 101.

- **1049 Advanced and**
  - 3 h.
  - Prerequisite: 101.

- **1051 Advanced and**
  - 3 h.
  - Prerequisite: 101.

- **1054 Studies in Italian Literature**
  - 3 h.

- **1060 Special Work**
  - Any.

**GENERAL STUDIES**

Coordinators: Patricia Kudla
Faculty advisory committee: David Reznikow (Director), John Stevens (Sociology), Katherine Tashkevich (Anthropology). Undergraduate degree offered: B.G.S.

**Degree Program**

The Bachelor of General Studies (B.G.S.) degree is designed to give students flexibility in planning their academic programs. Since this is an interdepartmental program with no departmental major requirements, students are responsible for planning their own areas of concentration with the assistance of a B.G.S. advisor. B.G.S. students may not earn more than 60 semester hours in one department.

B.G.S. candidates develop a creative portfolio that draws upon the offerings of several departments and integrate varied approaches to a particular topic. A few examples of interdisciplinary programs are world and cultural studies, environmental studies, technical writing, faculty studies, urban studies, and medical careers. Programs that are covered by existing departmental majors are not appropriate for the B.G.S. degree. In all cases, careful and timely planning is essential.

**Eligibility**

Students who first enrolled prior to fall 1990 and who will graduate no later than August 1996 are eligible to enter the B.G.S. degree program.

Students who are not eligible may wish to consider seeking a B.A. degree in Intercultural studies (see "Interdepartmental Studies" in this section of the Catalog).

**Plan of Study**

B.G.S. students are required to meet for approval a plan of study. The easier a plan of study is submitted, the more effective the student's B.G.S. program will be. Because the B.G.S. degree program is designed to allow for individualized academic programs, students are encouraged to apply for the B.G.S. program prior to or during the junior year.

**Courses Through 1994**

Incompletes or incompleting students who declare the B.G.S. must submit a plan of study within three months after the declaration. The adviser will not sign subsequent registration cards until an approved plan of study is in the student's folder.

Senior students (those who have earned 90 semester hours or more) who wish to declare the B.G.S. must submit the plan of study for approval prior to the declaration. Students who have completed more than 94 semester hours ordinarily may not declare the B.G.S. unless they can demonstrate that the advanced course work will fit the B.G.S. unless the student's folder is complete to meet the minimum of 124 semester hours required for the degree.

**Procedures Effective Fall 1991**

The plan of study must be approved prior to entry into the B.G.S. program. Students must complete a minimum of 39 semester hours after entry into the program. The final 30 semester hours must include at least 15 in 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 39 semester hours.
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 rationale for proposing the B.G.S. program for that departmental program.
A list of advanced-level course work already completed and a description of its relevance to the proposed plan of study.
An outline of advanced-level course work planned for all remaining semesters, noting how the courses are related to each other, to personal interests, and to 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 B.G.S. 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 at the next committee meeting. In some cases, the student may be referred to a more appropriate departmental major.
Students are required to follow for courses approved in the plan of study with each semester's registration. A limited number of substitutions may be allowed, but only if they are clearly consistent with the areas of concentration in the approved plan of study and only if they are approved in advance by the B.G.S. advisor. Unauthorized substitutions may be designated as elective coursework.
Significant changes in the focus of a student's plan of study require resubmission and approval of a revised plan of study. The student's academic advisor must certify when the changes warrant a revised plan.
Forms and guidelines for preparing the plan of study are available in the Rockefeller General Studies/Interdepartmental Studies Advisory Office, 113 Schofield Hall, or in the Office of Academic Programs, 116 North Hall. A list of meeting times of the review committee is available each semester.

B.G.S. Requirements
In addition to having an approved plan of study, students must complete the following requirements for the B.G.S. degree.

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 18 semester hours of advanced course work from any one department may be counted toward fulfilling this requirement.
If more than 18 semester hours of advanced courses in one department, the total may be counted toward the 124 semester hours needed for graduation, but only 18 semester hours from that department may count toward the 36 hours of advanced courses.
Advanced courses typically are those numbered 100 and above. At the initiation of sponsoring departments and with approval of the Office of Academic Programs, courses numbered below 100 but taught at an advanced level also may be used to satisfy this requirement. Approved courses are listed in this section.
The pass/fail/upper grading option is not available for the 36 semester hours of advanced course work required for the degree, but may be used for advanced course work beyond the 36 semester hours.
Courses taken to satisfy the General Education Requirements may not be counted toward completion of the advanced course work requirement.
Some study abroad advanced course work is considered residential work for the purposes of B.G.S. requirements and college residence requirements. Students should check in advance with their B.G.S. advisor or with the B.G.S. coordinator.
University of Iowa Guided Correspondence Study advanced courses count toward the advanced course work requirement, but the College of Liberal Arts residence requirement must be met by other UI course work.

Grade-Point Average
Students must achieve a grade-point average of at least 2.0 in all college work attempted, all college work undertaken at The University of Iowa, and all advanced course work attempted.

Total Hours Earned
Students must earn a minimum of 124 semester hours of credit.

Restrictions
No more than 40 semester hours of credit in any academic department may count toward the 124 semester hours required for graduation. This includes both upper- and lower-level course work, and both UI and transfer course work.
Students requiring a B.G.S. degree may earn no more than 36 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 policies regarding residence, pass/fail/upper, satisfactory/fail, and academic standards apply to B.G.S. students.

Advanced Course Offered below 100
The following courses are accepted as part of the 36 semester hours of advanced course work required under the B.G.S. rules.
Students must earn a grade-point average of 2.00 or higher 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 these courses have prerequisites or require special permission signatures.

American Studies
4510 Seminar in American Cultural Studies 3 s.h.

Art and Art History
188G Advanced Painting 3 s.h.
188Z Undergraduate Printmaking 3 s.h.
1917 Undergraduate Sculpture Workshop 3 s.h.

Asian Languages and Literature
2912 Second-Year Japanese 3 s.h.
2914 Advanced Chinese II 3 s.h.
2930 Non-Western Literary Traditions 3 s.h.

Botany
213 Iowa Flora 3 s.h.
(accepted as advanced course work only if 213 Plant Taxonomy also is completed)

Communication Studies
All courses numbered 368-499 and above

Comparative Literature
4810 Major Texts in World Literature I 3 s.h.
4811 Major Texts in World Literature II 3 s.h.
4830 Non-Western Literary Traditions 3 s.h.
4830 Undergraduate Seminar 3 s.h.

Computer Science
23C-21 Algorithms and Data Structures 3 s.h.
23C-23 Programming Language Concepts 3 s.h.
23C-21 Digital Systems and Computers 3 s.h.
23C-21 Introduction to Systems Science 3 s.h.
23C-51 Computer Graphics 3 s.h.
23C-53 Elementary Numerics Analysis 3 s.h.
Financial Aid

All genetics graduate students currently receive a financial aid that is in the range of $11,000 plus tuition per year. By April, nearly all financial aid is committed for students entering in the fall.

Financial support comes from research assistantships, teaching assistantships, scholarships, individual research grants, or other departmental 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 Science Training Program in the College of Medicine.

Departmental Ph.D. Programs

The Departments of Biochemistry, Biology, Botany, and Microbiology offer degree programs 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.

59:130 Biochemistry and Molecular Biology
59:223 Genet Expres
59:204 Genetic Genetics and Biogenetics
21:046 Cell Cell Biogenesis
25:258 Molecular Biological Animal Virology and the Eukaryotic Cell
42:270 Topics in Molecular Biology

GEOPHYSICAL

Chair: Michael L. McIntrye
Professor: John W. Taylor, Joel E. Hordlock, James R. Wigginton, Michael L. McIntrye, R. Higginbotham, David C. Berenbaum, Gerard Nabhan

Assistant professors: R.O. D. Owers, George P. Makris, Paul V. Hennings

Assistant professors: Marc P. Armstrong, Clare Yau, Rebecca S. Roberts, Heidi L. Rantala

Adjunct faculty: Susan Crowell, Michael Long, Thomas D. Morton, Carol A. Pancrazi

Undergraduate degrees offered: B.A., B.S. in Geography
Graduate degrees offered: M.A., Ph.D. in Geography

Geography seeks to explain spatial organization and social differentiation through detailed studies of significant patterns and processes. The discipline is concerned with "place" or "environment" and ongoing forces that promote change between and within human and physical systems. Geography is a composite science, requiring a broad base of knowledge from many related disciplines. It is in an analytical science that seeks explanations of specific research questions from a distinctly geographic perspective.

Students who elect courses in geography find that they develop insights and methods of inquiry that are particularly applicable to understanding many of the complex problems confronting society. For instance, the distribution and consumption of natural resources, access to water, pollution, the growth and development of urban areas, increasing population, transportation problems, spatial inequalities, location of services, and conflicts between nations are some of the issues dealt with during geographical training.

Studies in geography also provide students with concepts and methods for organizing such small areas as urban areas, marketing regions, school districts, health service areas, drainage basins, and other areas of environmental concern. Thus, geographers can make substantial contributions toward understanding the behavior of individuals and of societies and their relations with the environment.

Career opportunities for majors in geography exist in many branches of government and in business. In demand are persons capable of dealing with resources management, regional development, market area analysis, and other problems related to the distribution and spatial interaction of physical, economic, social, and political phenomena.

Courses in geography are commonly required of students preparing to teach at the elementary and secondary school levels, those who want to work in urban and regional planning, and as a background for many related professions, including law, health care, environmental or transportation engineering, and business administration.

Undergraduate Programs

The geography faculty has developed an undergraduate instructional program that serves students interested in acquiring a major or minor in geography, as well as those concentrating in other disciplines who are interested in electing geography courses as part of a liberal education. The department also participates in interdepartmental programs involving global, urban, and environmental compositions.

Bachelor's Degrees

Each student majoring in geography must complete one of the following three concentration areas: urban and regional studies, international development studies, or environmental studies. Majors may work toward either a Bachelor of Science or Bachelor of Arts degree. Students who plan advanced training or careers in geography should elect the B.S. degree. Those pursuing a liberal arts objective may elect the B.A. or B.S. degree.

General Requirements

All geography majors must complete one of the following computer programming courses:

22:07 Introduction to Computing with FORTAN
25:16 Introduction to Programming with Pascal

Bachelor of Science students must satisfy a mathematics requirement consisting of one of the following two pairs of courses:

22:16 Calculus for the Biological Sciences
22:16 Calculus for the Biological Sciences

or

22:05 Calculus 1
22:06 Calculus 2
Urban and Regional Studies

The undergraduate program in urban and regional studies is designed for students who are preparing for positions in government and private business graduate programs in geography, professional programs such as urban and regional planning, business administration, applied policy analysis, or regional science. The courses cover location theories and their application to applied problems, such as assessing sites for development potential, finding the best locations for public and private facilities, developing plans for regional and community development, evaluating alternate plans for improving transport services in a region, and forecasting the population growth of small areas.

Methods for solving these applied problems are based on a thorough understanding of the processes of urban and regional development, the roles of individuals and institutions in affecting change, and the processes through which policy decisions are reached. Required skills are developed in quantitative methods, computer systems, and computer methods. Opportunities for experiences in working with real problems are included.

Students concentrating on urban and regional studies are required to complete the following sequence of courses. Prerequisites are listed in course descriptions. See "Courses" at the end of this section of the Catalog.

Introductory Courses

441 Introduction to Human Geography 4 s.h.
443 Introduction to Physical Geography 4 s.h.

At least one of these:
441 Introduction to Social Geography 3 s.h.
443 Introduction to Political Geography 3 s.h.

Intermediate Courses

At least two of these:
4130 Location Strategy of Firms 3 s.h.
4132 Industrial Location 3 s.h.
4133 Introduction to Transportation 3 s.h.
4135 Urban Geography 3 s.h.

Advanced Courses

4140 Geographic Perspectives on Development 3 s.h.
4142 Planning and Geography of Underdevelopment 3 s.h.
4143 Geography of the New Industrializing Countries 3 s.h.
4147 Development Planning and Policy 3 s.h.

Environmental Studies

The undergraduate program in environmental studies is designed for students who have curiosity or personal interest in resource management or environmental protection, or who are interested in physical geography. The program provides a knowledge of physical processes in landform development, atmospheric conditions, hydrology, and development, and biotic communities. It stresses the interrelationships 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 subprogram of the Department of Geography.

Students concentrating in environmental studies must complete the following sequence of courses. Prerequisites to these courses are listed in course descriptions. See "Courses" at the end of this section of the Catalog. Students are required to take at least one semester hour of intermediate and advanced courses.

Introductory Courses

441 Introduction to Human Geography 4 s.h.
443 Introduction to Physical Geography 4 s.h.
449 Contemporary Environmental Issues 3 s.h.
295 Chemistry and Physics of the Environment (or a more advanced course in chemistry or physics) 3 s.h.
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 studies of the world. The following-level courses 441 Introduction to Human Geography, 4411 Introduction to Social Geography, 4412 Physical Geography, 4413 Environmental Issues, and 4430 Introduction to Economic Geography are approved for the General Education Requirement in social sciences. 4433 Third World Development Support is approved for the General Education Requirement in social sciences. These courses serve as part of a liberal education.

Graduate Programs
The goals of the department's graduate programs are to prepare students to carry on creative and productive research in selected areas of geography, to improve their ability to use and further elaboration of theory, and to prepare students for professional positions in research, teaching, or some area of applied geography. Success in achieving these goals has been demonstrated by the strong employment record of 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 for graduate study at the college level for those pursuing the M.A. in Geography. Opportunities are provided for all graduate students to gain practical teaching experience through service as departmental teaching assistants or graduate instructors.

Master of Arts
The department offers six M.A. subprograms, located analytical, physical geography, political geography, regional development, transportation systems analysis, and water resources. These specialties are designed for students seeking positions in community planning, health planning, development planning in the Third World, water resources management, and transportation as well as for those who intend to pursue the Ph.D.

Each subprogram cuts across some of the more traditional boundaries of the discipline and builds on the research specialties of the faculty. For example, topics of interest in urban geography are
included in three subprograms—locational analysis, political geography, and cartographic development—while the traditional courses in economic geography are included in locational analysis and regional development. The more quantitative perspectives of regional science are included in locational analysis and transportation systems analysis. The subprograms in physical geography emphasize interacting processes and integrates field studies with computer and simulation modeling. The water resources subprogram builds on foundations in environmental science and political economy.

Although M.A. students pursue a program of study within one of the subprograms, they also must gain a basic proficiency in another. The M.A. emphasizes the acquisition of analytical skills and their application in research. Courses that provide necessary training in oral and written communication, computer programming and graphics, statistics, mathematics, and research methods are integral to the M.A. program. Students in the transportation subprogram may take an additional elective course that enables them to receive a transportation certificate in addition to their M.A. degree.

General Requirements
The M.A. degree requires a minimum of 30 semester hours of graduate work, of which 15 semester hours must be in courses numbered 221 or above. In addition to fulfilling the general requirements of the department, students must:

Complete at least one course in each of the following subprograms. The following include the requirements for the following subprograms, listed in order of their sequence:

- Economic Geology
- Geomorphology
- Hydrology
- Paleoclimatology
- Quaternary Science
- Statistical Geology

Complete at least one course in each of the following groups:

- Economic Geology
- Geomorphology
- Hydrology
- Paleoclimatology
- Quaternary Science
- Statistical Geology

The M.A. degree may be earned with or without thesis, except in the physical geography and water resources subprograms, which require a thesis. A maximum of 4 semester hours of credit may be earned for thesis work.

Students who elect the M.A. without thesis must pass a written examination and, in most subprograms, an oral examination. For students electing the M.A. with thesis, the written examination can be waived and the thesis defense serves as the oral M.A. examination.

Subprogram Requirements

Local Analysis

44:134 Methods of Transportation Analysis 3 s.h.
44:137 Economic Theory of Location 3 s.h.
6E:202 Price Theory 3 s.h.
6E:203 Microeconomics I 3 s.h.

Three of these:
44:216 Behavioral Analysis in Transportation 3 s.h.
44:236 Travel Demand Modeling 3 s.h.
44:262 Urban Economics and Urban Specialization 3 s.h.
44:265 Methods of Regional Analysis Regional Science 3 s.h.
44:265 Advanced Location Theory 3 s.h.
44:310 Research Seminar: Location Theory arr.

Physical Geography

44:123 Landscape Ecological 3 s.h.
44:128 Drainage Basin Form and Process 3 s.h.
44:113 Geographic Information Systems 3 s.h.
44:328 Research Seminar: Physical Geography 3 s.h.
44:450 Thesis 3 s.h.

Two of these:
44:226 Advanced Biogeography/Landscape Ecology 3 s.h.
44:228 Advanced Earth Surface Processes 3 s.h.
44:225 Water Resources Systems Analysis 3 s.h.

Two from one of the following groups:

12:128 Quaternary Paleontology and Paleoecology 5 s.h.
11:175 Quaternary Environments 3 s.h.
2:119 Plant-Animal Interactions 3 s.h.
12:132 Sedimentology 3 s.h.
12:172 Glacial and Pleistocene Geology 3 s.h.
53:170 Flow in Open Channels 3 s.h.
53:113 Mechanics of Sediment Transport 3 s.h.

or
53:152 Environmental Chemistry 3 s.h.
53:154 Environmental Microbiology 3 s.h.
53:155 Limnology 3 s.h.
53:251 Ecological Systems Modeling 3 s.h.

or
Equivalent group of courses:
*M.A. thesis is required of all students in this subprogram.

Political Geography

44:175 Locational Conflict 3 s.h.
44:272 Social Theory and Human Geography 3 s.h.
6E:202 Price Theory 3 s.h.
44:210 Philosophy and Economics in Geography 3 s.h.
44:202 Political Economy of Regional Development 3 s.h.
44:270 Jurisdictional Organizations/Public Service Provision 3 s.h.
44:315 Research Seminar: Political Geography arr.

Regional Development

44:194 Geographic Perspectives on Development 3 s.h.
44:210 Philosophy and Economics in Geography 3 s.h.
44:202 Political Economy of Regional Development 3 s.h.
44:204 Agricultural Change and Rural Development in the Third World 3 s.h.
44:304 Research Seminar: Regional Development 3 s.h.

Transportation Systems Analysis
44:225 Probability and Statistics 3 s.h.
4E:146 Introduction to Econometrics 3 s.h.
6E:202 Price Theory 3 s.h.
6E:203 Microeconomics I 3 s.h.
44:314 Methods of Transportation Analysis 3 s.h.
44:796 Travel Demand Modeling 3 s.h.
102:349 Transportation Policy and Planning 3 s.h.
102:361 Problems in Transportation Policy and Planning 3 s.h.
53:202 Urban Transportation 3 s.h.

*Satisfies the M.A. and Ph.D. quantitative methods requirements.

Water Resources
44:220 Research Seminar: Water Resources 3 s.h.
44:450 Thesis (required of all students in the subprogram) 3 s.h.

The following courses, with at least 9 semester hours earned at the 400-level, are included:

14:126 Water in the Biosphere 3 s.h.
44:218 Drainage Basin Form and Process 3 s.h.

Three of these:
44:121 or 44:225 Natural Resources Management 3 s.h.
44:225 Environmental Impact Analysis/Water Resources Planning 3 s.h.
44:227 or 44:225 Water Quality Control Systems 3 s.h.
44:229 or 44:239 Water Resources Management 3 s.h.

An additional sequence of three courses in social theory and regional development, urban analysis, or theoretical processes, chosen under the direction of a faculty advisor, may include courses in other departments and may fill the out-of-subprogram requirement.
Students are expected to have an undergraduate background relevant to pursuing graduate work in one of the department's subprograms. The B.A. or B.S. degree in geography is not required for entry into the program. A strong analytical background in any of the social or environmental sciences and an interest in exploring the regional and spatial perspectives characterizing modern geography are the particular skill-sets necessary for the student's background. Depending on the strength and suitability of their prior training, however, students may be required to take courses the university prerequisites for courses in their selected subprograms. Credit received for such courses cannot be applied toward the 30 semester hours required for the M.A. Each of the M.A. 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 M.A. Students are advised to utilize these additional hours to elect graduate courses in other subprograms to geography and/or in other University departments and programs, thereby tailoring their programs of study to their individual interests.

Doctor of Philosophy

The Doctor of Philosophy program is designed to prepare students for positions in college and university teaching and in advanced research. It provides programs of study leading to broad knowledge of a field of geography and its literature and special expertise and the ability to make original contributions to the field. The student usually represents the general area in which the student is interested in the subprogram, whereas the latter represents his or her specific area of concentration. The Ph.D. is fundamentally a research degree and is aimed at developing the student's expertise in a particular area.

The Ph.D. is a four-year program. The student must satisfactorily complete 30 semester hours of graduate work in the department's M.A. program. Students can enter the program with advanced standing corresponding to previous graduate work equivalent to that in the department's M.A. program. Students entering the program directly from the B.S. or B.A. must satisfy the above requirements for the M.A. except for the M.A. examinations. In addition, students whose ultimate objective is the Ph.D. are required to:

Complete at least 3 additional semester hours in graduate-level geography courses in addition to the requirements for the M.A. degree, and 6 semester hours in another subprogram that is not the student's general area of interest.

Complete at least one additional qualitative methods course (3 semester hours) that is at a level above those required for the B.S. and is chosen from a list of courses approved by the faculty (students in the Ph.D. program are advised to fulfill this requirement by the M.A. and Ph.D. quantitative methods requirement—a total of 6 hours credit hours—during their first year in residence).

Complete one additional research seminar under the direction of a faculty member who is not a graduate research seminar satisfying the student's M.A. requirement.

Register for the department's colloquium series, 46355: Research Seminar: Staff, each semester that the student is in residence.

Before students can be admitted formally to candidacy for the Ph.D., they must submit an original research paper to the faculty for its approval. Students completing the M.A. with thesis can adapt the M.A. thesis to fulfill this requirement. Students entering the program with an M.A. from another institution can submit the required research papers completed elsewhere to satisfy the requirement. Students who initially enter the M.A. program with a terminal M.A. as their degree objective and who complete that program can enter the Ph.D. program by fulfilling the research paper requirement. By the end of the M.A. portion of the program (typically the fourth semester for the student entering the program directly from the B.S. or B.A.), the student should submit a written report that includes an assessment of progress to date, an outline of the areas of progress and knowledge which the student intends to specialize, and a proposed plan of study for the final 2 years of his or her Ph.D. program. This report is prepared in consultation with the student's Ph.D. advisor and other members of the faculty in the student's general area. The plan of study is submitted, as necessary, throughout the remainder of the student's program.

The remainder of the Ph.D. program includes the completion of the student's individual program of study designed to prepare him or her for a career in which he or she is in a specific area of concentration. It consists of appropriate graduate courses, seminars, readings, and independent research in geography, courses in related disciplines; and courses that satisfy the tool requirements of the student's program of study.

Prior to taking the comprehensive examination consisting of both written and oral components the student must submit an "area review paper" to his or her Ph.D. committee. This paper, which must be approved by the student's Ph.D. advisor, consists of a critical review of research in the student's area of concentration. As such, it is a finalizing step in a student's program of study as well as a statement of future research directions. The comprehensive examination covers both the student's area of concentration and his or her more general field in the discipline. After obtaining the approval of a dissertation supervisor, the student must present a dissertation proposal to his or her dissertation committee for its critical comments and approval. The student must then complete and defend the dissertation.

Before receiving the Ph.D. degree, students are expected to serve as both classroom instructors (as teaching assistants) and research assistants.

Admission

In addition to the general rules and regulations set forth in the Manual of Rules and Regulations of the Graduate College, the department considers the applicant's undergraduate grade-point average, especially of his or her junior and senior years; scores on the Graduate Record Examination (GRE) General Test; three letters of recommendation; and an essay in which the applicant sets forth the reasons for wanting to study geography at The University of Iowa.

Ordinarily, applicants must have earned an undergraduate grade-point average of 3.00 or better to be admitted to either the M.A. or Ph.D. program in geography.

Students from foreign countries or from undergraduate institutions that evaluate students on a basis other than grade-point average will be considered according to academic standing in their respective institution.

Financial Aid

A number of graduate stipends as teaching or research assistants are available. Awards are based on merit. Students usually must have a combined score of 1000 in verbal and quantitative sections and a 3.00 undergraduate or graduate grade-point average to be appointed to an assistantship. Applications for graduate appointments should be received by February 15.

Facilities

The department houses a laboratory for computer cartography and spatial analysis equipped with an Arc/Info and Macintosh work stations, digitizers, and plotters for data collection and data output. A variety of GIS software packages including ERDAS, ERNIE,MAP MINERVO, and TRANSCAD. The department also participates in the advanced GIS facility in the Center for Global and Regional Environmental Research. The PGs and other terminals in the department are linked to the University's SYTRAC broadband communication network, which provides high-speed access to graphics, digital data, and information on the computer systems at the University IBM, PRIME, and VAX computer systems.

Students also have access to a University computing cluster that contains IBM PCs, terminals, several printers, and a plottter.
46359 Agmatic Change and Brain Development in the Third World 3 s.h.
46360 Transportation Regulation and Finance 3 s.h.
46362 Jurisdictional Organization/Public Service Procedures 3 s.h.
46372 Societal Theory: Social Movements and the State 3 s.h.
46373 Social Theory: Human Geography 3 s.h.
46375 Development Policy and Planning in the Third World 3 s.h.
46390 Advanced Field Studies 3 s.h.
46395 Methods of Regional Analysis: An Introduction 3 s.h.
46396 Methods of Regional Analysis: Population Geography 3 s.h.
46398 Regional Development Theory and Policy 3 s.h.
46400 Advanced Location Theory 3 s.h.
46405 Research Seminar: Quantitative Methods: Computer Methods and Modelling 3-5 s.h.
46410 Research Seminar: Political Geography 3 s.h.
46415 Research Seminar: Physical Geography 4 s.h.
46420 Research Seminar: Water Resources 3 s.h.
46420 Research Seminar: Landscape Theory 3 s.h.
46425 Seminar: Urbanization 3 s.h.
46430 Research Seminar: Regional Development 3 s.h.
46435 Research Seminar: The Teaching of Geography 3 s.h.
46440 Research Seminar: Environmental Systems Analysis 3 s.h.
46450 Research Seminar: Locational Analysis 3 s.h.
46450 Thesis 3 s.h.

GEOLGY

Charle Holness, Assistant Professor

Professor Emeritus: William F. Furniss, Assistant Professor: Daniel D. Trew

Associate Professors: Robert L. Brewer, Aarne F. Bruce, Thomas Foster, Assistant Professor: Laszlo A. Erdely, Mark K. Bayles, Assistant Professor: Brian Bailey, George R. Hulbert, Donald L. Koch

Adjunct Assistant Professors: Gregory H. Ludwig, Richard S. Adams, Richard D. Arakawa, Walter A. Reedy

Graduate degrees offered: B.A., B.S. in Geology

Graduate degrees offered: M.S., Ph.D. in Geology

Geology is the basic study and practical application of scientific disciplines related to understanding the earth. Geological concerns include the earth's origin, its present appearance and character internal and at the surface, its alteration with time, location of economic and energy resources, and how man is changing the earth for future generations. The Department of Geology has the customary subdivisions—mineralogy, petrology, stratigraphy, structural geology, palaeontology, sedimentology, economic geology, paleogeography, glacial geology, environmental geology—as well as applied geophysics, geochemistry, palynology, and remote sensing.

Career opportunities are available to professional geologists in industry (especially related to environmental concerns), education, urban planning, state and federal geological surveys, and government, resource, and research organizations. The master's degree is required by most hiring agencies as the minimum degree in geology. However, an undergraduate degree is highly satisfactory to teach certain federal, and industrial situations.

Many of The University of Iowa's geology graduates find employment with the petroleum industry in exploration geology and geophysics. Others continue in graduate school or take jobs with various geological exploration agencies. Some intend to enter law, business, or other fields such as urban planning, environmental studies, engineering, archaeology, science education, or oceanography as advanced areas. Geology is suited to all of these.

The program provides greater stress on the basic aspects of geology of how the teacher or engineer, or other geologist, of the field. The department specializes in relating scientific thought to the study of the earth. Its resources include a major palaeontology facility (invertebrate, vertebrate, paleontology), a territorial field trip to the Weeg Centering Park, the Geological Survey Bureau (located in the same building as the department), and research equipment for mineralogy, petrology, geophysics, sedimentology, and economic geology.
Total At least 38 s.h.

*Students may substitute 12/23 Earth History and Resources for 12/24 Introduction to Geology and 12/4 Evolution and the History of Life for 12/6 Evolution of the Earth.

The geology major requires at least 10 semester hours of college mathematics, including 22/56 Calculus II or 22/57
Elective (Calculus II). Computer science or statistics courses may be counted toward the 20-hour-hour requirement. Additional mathematics courses are strongly recommended.

Eight semester hours of physics, 3 semester hours of chemistry, and a course in a laboratory science are also 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. degree is for students who are interested in the humanities or other interdisciplinary programs.

General Education Track

The general track provides a background in geology and allied fields applicable for careers in conservation, urban planning, or professional training. With appropriate coursework, it can be correlated for B.S.A. program, or you can choose a basic college core to fulfill important physical, cultural, and core science track, the student will be required to complete 12 hours of the humanities and social sciences core.

Geography and Earth History Courses

A minor in geography and Earth history requires 24 semester hours, including coursework in physical and geologic sciences. This minor is designed to provide upper division-level instruction in geography and Earth history, and to prepare students for graduate study or careers in environmental science, natural resources management, and related fields.

Honors

A degree with honors in geology is offered. Students in the honors program can select a minor.

Graduate Programs

Students planning to take graduate work in geology should have completed a minor in geology and supporting courses equivalent to these. Additional courses are required for an undergraduate major in geology at The University of Iowa. Students with deficiencies may remedy them at the beginning of graduate study.

All beginning graduate students in geology must take 12/107 Geologic Orientation. All graduate students in geology must perform teaching, research, or related appropriate services as part of the degree program.

Properly graduating students in geology should consult "Rules and Regulations" in the "Graduate College." The Catalog for geology admission and graduate study requirements.

Master of Science

The M.S. degree programs are designed to complete the student's broad, fundamental background in geology and the supporting sciences. They prepare the student for a professional career in geology or for more advanced and specialized studies—although in certain situations and with faculty approval, the student may pursue an already specialized program at the master's level.

Eligible graduate students are assigned to a general advisor. Before the end of the second semester, the student has selected a research area and related thesis topic. The department chair then approves the thesis advisor and the additional faculty members, who form the student's advisory committee. The student is responsible for getting the committee's approval for a suitable program of graduate work.-for satisfactory development of research plans as outlined in a thesis proposal that is submitted for departmental approval.

Master's degree candidates complete at least one-half of the required units and fulfill all requirements as part of the master's program. Course work taken to satisfy these requirements does not count toward the semester-hour requirements for the degree.

To qualify for admission to the final year's examination, the candidate must have at least a 3.0 grade point average on graduate courses that he or she is taking following the 30-semester-hour minimum requirement for the degree with at least 24 semester hours in residence at The University of Iowa. Additionally, the grade-point average on all graduate courses in geology courses should be at least 3.0. No more than 6 hours of graduate course work can be substituted for coursework in geology research may be counted toward the 30-semester-hour minimum requirement for the degree program.
M.S. with Thesis

Students are encouraged to select thesis topics involving a variety of geological subdisciplines and scientific skills. Research topics might include field work or mapping, laboratory experiments, analytical work, or some combination.

M.S. without Thesis

The department encourages few students to pursue the M.S. without thesis. This program requires that applicants have approximately three months' experience working under supervision of a professional geologist, or equivalent experience in a science phase of geologic activity.

Students should receive prior faculty permission to apply the experience toward the degree. They must submit a written report on the activity, describing the geologic principles it involved and its value and broader applications. No college credit is granted. The M.S. degree without thesis requires at least 36 semester hours of graduate course work, of which at least 6 semester hours must be earned in other departments of the University. The faculty may also require that students submit a formal scientific report dealing with an appropriate subject or project. Credit may be granted for this report.

The final examination covers course work and work done in lieu of the thesis.

Master of Arts in Teaching (Earth Science)

This program enables students to combine certification to teach secondary school with participation in a specialized graduate curriculum. Awarded by the College of Education, the M.A.T. degree requires at least 30 semester hours of graduate work in professional education and at least 18 semester hours of graduate course work in earth science.

Doctor of Philosophy

The Ph.D. degree in geology requires at least 72 semester hours of graduate course work, not counting at least two full-time semesters of residency beyond the first 24 semester hours of graduate course work. Departmental language and test requirements for the Ph.D. degree may be met either by achieving competence in two languages or in one language and one test, or by achieving proficiency in one language. Competence is usually achieved by satisfactory completion of a one-year sequence of appropriate courses, proficiency by satisfactory completion of a two-year sequence.

French, German, and Russian meet departmental language requirements; statistics and computer science are suitable test areas. In exceptional circumstances, the faculty may approve other languages or test areas. Courses in related disciplines, such as botany, chemistry, physics, and biology, are not regarded as satisfying test requirements, although they may provide indispensable background for geological specialization areas. Course work taken to satisfy language and test requirements may not be applied to credit requirements for the degree. The following are the minimum requirements:

- Satisfactory completion of requirements for the M.S. degree in geology at the University of Iowa, where appropriate, additional work in one area may be approved as satisfying requirements in another.
- An appropriate graduate course in another discipline; courses cross-listed between geology and other departments generally are not considered to meet this requirement.

At least 24 semester hours of graduate course work, exclusive of credits for dissertation research and beyond course work applied toward the M.S. degree.

The comprehensive examination covers, in depth, all subdivisions of one major field and major fields in at least three other major fields. It also presumes that the doctoral candidate is proficient in the basic elements of general geology, as presented by current elementary textbooks.

Major and Minor Fields

Economic Geology

- Petroleum
- Economic deposits
- Mineral economics

Mineralogy

- Crystalllography
- Determinative mineralogy
- Crystal chemistry and mineral chemistry

Igneous and Metamorphic Petrology

- Igneous petrology
- Metamorphic petrology
- Aqueous geochemistry and thermodynamics

Structural Geology

- Geotechnics
- Structural analysis
- Remote sensing

Geophysics

- Exploration geophysics
- Solid-earth geophysics
- Rock properties

Stratigraphy

- Physical stratigraphy
- Biostratigraphy
- Depositional environments

Sedimentary Petrology

- Sedimentation
- Sedimentary carbonate petrology
- Physical stratigraphy

Paleocene Studies

- Paleogene geology
- Vertebrate paleontology
- Quaternary paleoecology

Paleontology

- Palynology
- Palaeoecology
- Palaeoecology

General Geomorphology

- Glacial and Pleistocene

Remote Sensing

Environmental Geology

- Hydrogeology
- Remote Sensing
- Engineering geology

Other Minor Subjects

- Astronomy
- Biology
- Chemistry
- Physics
- Materials engineering
- Geography
- Hydraulics
- Archaeology
- Anthropology
- Science education
- Others

Facilities

Resources and equipment available for research in the Department of Geology include a mineralogy/petrology lab (X-ray diffractometer, petrographic thin sections, Nikon compound microscope, electron microprobe, etc.), a paleontology lab (bone preparation equipment, ventilated work area, etc.), a geology lab (microscopes, petrographic thin sections, etc.), an environmental laboratory, and a computer lab. The department is equipped with a large collection of microfossil slides and thin sections. Microfossil slides and thin sections are available in-house for terminal and ongoing research. Field research is conducted in the U.S. and abroad, with special emphasis on paleoecology and the investigation of ancient climates.

Cooperative Activities

The department has collaborative work with the Geological Survey Bureau, and geology students sometimes work on projects for the survey. The Department of Geology, Geography, Anthropology, Chemistry, Biology, and Wildlife Ecology cooperate in sharing offices, equipment, and personnel to provide a broader perspective and experience. The geology department is an important participant in the Iowa Quaternary Studies group, an interdisciplinary program that...
12.287 Romanazyk. Phylology Seminar 1-2 h. Discussion of selected texts, readings, and perspectives.
12.289 Regional Stratigraphy 3 h. Seminar: analyzing contemporary stratigraphic changes in light of current events. Students will develop a research project and present findings.
12.301 Research: Stratigraphy 3 h. May be repeated.
12.303 Research: Paleocology 3 h. May be repeated.
12.304 Research: Palynology 3 h. May be repeated.
12.305 Research: Sedimentology and Sedimentary Geology 3 h. May be repeated.
12.306 Research: Metamorphic and Orogenic Geology 3 h. May be repeated.
12.307 Research: Geochronology and Evolutionary Biology 3 h. May be repeated.

GERMAN


Undergraduate Program

Students majoring in German choose one of two major tracks: the humanities track or the applied German track. The humanities track enables students to concentrate on German language, literature, and culture, while the applied track focuses on the use and influence of the language in society. Students will engage in research projects and presentations, and will learn to write and speak German fluently. Students may also choose to pursue a minor in German studies or a related field.

Applying German Track

Students interested in applying to a German track should consult with their academic advisor to determine the best course of study. The German department offers a variety of courses in German language, literature, and culture, as well as courses in related fields such as history, politics, and economics. Students may also take advantage of opportunities for study abroad and travel in German-speaking countries. For more information, please contact the German department at (555) 555-5555.
German studies offered in another department (approval of major advisor required).

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 (131, 132) at The University of Iowa. All courses numbered 100 and above count toward the minor except 131, 132, 133, 134, 135, 136, 137, 138, 139, and 151.

Certification for Teaching Minor

In addition to the basic program requirements for the first and second year, students must take the following courses of their equivalents for completion of the teaching minor in German

131 101 Introduction to Modern German Literature I 3 s.h.
131 102 Introduction to Modern German Literature II 3 s.h.
131 103 Composition and Conversation I 3 s.h.
131 104 Composition and Conversation II 3 s.h.
131 1 105 Advanced Composition and Conversation 3 s.h.

Honors

Honors in German is open to exceptionally students who are in the College of Liberal Arts Honors Program and have completed three years of college-level German, or the equivalent, with a grade-point average of at least 3.50.

Participating students register for the following courses.

131 190 Honors Program in German 3 s.h.
131 191 Honors Research and Thesis 3 s.h.

Honors students are expected to engage in readings and discussions in German literature and culture and to write essays in German and English. Students meet with their Honors director or class on a regular basis. The program concludes with presentation of an honors thesis to a faculty committee of at least three members.

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 master’s degree program with thesis. The thesis program requires a minimum of 35 semester hours, or equivalent, of graduate-level work and fulfillment of other requirements of the Department of German and the Graduate College. Students who have not completed major courses or their equivalents in the department's undergraduate program must take those courses along with the courses required for the M.A. degree. Some candidates may qualify for graduate credit for such work.

With the graduate advisor’s approval, students may take some of the required 35 semester hours outside the department in related subjects, such as philosophy, history, linguistics, or other languages. Usually students may receive two semester hours of credit for satisfactory completion of the thesis. The thesis topic may be either linguistic or literary and is subject to approval by the faculty.

Master of Arts without Thesis

Graduate students preparing for careers in secondary school teaching, government service, or translation work may elect the master's degree program without thesis. This program requires a minimum of 38 semester hours of course work and is considered a terminal degree.

The same course requirements outlined for the M.A. with thesis apply to candidates for the M.A. without thesis. Students in the latter program should, with the approval of the graduate advisor, select courses that will best prepare them for their chosen careers.

Doctor of Philosophy

The Ph.D. degree is awarded upon the 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), with a concentration in either Germanic Linguistics or German Literature.

Credit received toward the M.A. degree usually is applied to the Ph.D. Students may enter 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.

Graduate Degree Language Tools

Master of Arts

Before they can take the M.A. exam, candidates must demonstrate a reading knowledge of a foreign language other than German at a level equivalent to two years of college study or four years of high school study.

Competency may be demonstrated either by submitting proof of having taken the required course work with a grade-point average of 3.00 or higher, or by passing an exam at the fourth-year college level as determined by the foreign language department.

Doctor of Philosophy

A candidate concentrating in Germanic must demonstrate a reading knowledge of French and of another language determined by the advisor to be pertinent to the candidate’s research interests.

Doctoral candidates in Germanic Linguistics must demonstrate a reading knowledge of French or Russian and of a modern Scandinavian language or Dutch.

Concordance in any of these languages may be demonstrated by the methods described under “Master of Arts.”

Financial Aid

Teaching assistantships, research assistantships, teaching research fellowships, and tuition scholarships are available for qualified graduate students. The department awards the Wilson and the Burke prizes to students of distinction.

Special Facilities

Students have the opportunity to improve their comprehension and command of German by working with recorded material in the University’s audio-visual center. Students may benefit from the computer-assisted instruction programs.

An extensive collection of books and periodicals in the University libraries facilitates research in all major areas of German literature and Germanic linguistics of all periods of study.

The Foreign Language House is available to undergraduate and graduate students as an on-campus housing option.

Foreign Study

The Department of German participates in the Regent Summer Programs in Austria. Sponsored by the three Iowa Regents universities, this program is open to students in all disciplines.

A three-week session is conducted at St. Ruprecht, near Graz, Austria. Instruction in both language and culture is provided on appropriate levels. A second four-week
Language Courses for Graduate Nonmajors

15.1111 Introductory German 4 3 1/2
15.1188 Intermediate German 4 3 1/2
15.1241 Advanced German 4 3 1/2
15.1242 Advanced German 4 3 1/2
15.1243 Advanced German 4 3 1/2

For Graduates

15.1901 Advanced Studies in German and Italian 4 3 1/2
15.2248 The German Novel 3 3 1/2
15.2249 German Poetry 3 3 1/2
15.2251 The History of Literature 3 3 1/2
15.2257 German Novels 3 3 1/2

15.2111 History of the German Language 3 3 1/2
15.2144 Middle High German 3 3 1/2
15.2146 Middle High German 3 3 1/2
15.2148 History of the German Language 3 3 1/2
15.2150 Early German Literature 2 2 1/2
15.2152 The Age of Enlightenment 2 2 1/2
15.2153 The Age of Enlightenment 2 2 1/2
15.2155 The Age of Enlightenment 2 2 1/2
15.2156 The Age of Enlightenment 2 2 1/2

15.2195 The Age of Goethe 3 3 1/2
15.2200 German Poet 3 3 1/2
15.2202 German Poet 3 3 1/2
15.2204 German Poet 3 3 1/2
15.2206 German Poet 3 3 1/2
15.2208 German Poet 3 3 1/2
15.2210 German Poet 3 3 1/2
15.2212 German Poet 3 3 1/2
15.2214 German Poet 3 3 1/2
15.2216 German Poet 3 3 1/2

15.2120 Seminar in German Literature of the Eighteenth Century 3 3 1/2
15.2122 Seminar in German Literature of the Eighteenth Century 3 3 1/2
15.2124 Seminar in German Literature of the Eighteenth Century 3 3 1/2
15.2126 Seminar in German Literature of the Eighteenth Century 3 3 1/2

15.2288 German Poetry of the Twelfth Century 3 3 1/2
15.2289 German Poetry of the Twelfth Century 3 3 1/2
15.2290 German Poetry of the Twelfth Century 3 3 1/2
15.2291 German Poetry of the Twelfth Century 3 3 1/2

15.2292 German Poetry of the Twelfth Century 3 3 1/2
15.2293 German Poetry of the Twelfth Century 3 3 1/2
15.2294 German Poetry of the Twelfth Century 3 3 1/2
15.2295 German Poetry of the Twelfth Century 3 3 1/2

GLOBAL STUDIES

Chair: James McCann (Religion)
Co-Chair: Christopher Tappan (Social Science), Stephen Alesanco (Office of International Education and Services), Victorным (Anthropology), Gary Vogt (Geology), Steve Kist (Physics and Astronomy), Mary McRae (Anthropology), Donald Norris (Canadian Studies), Robert E. C. MacEachern (History), John W. B. MacEachern (History), Ian Stewart (Archaeology), Ian Nairn (Political Science)

The Global Studies Program provides undergraduate students with a multidisciplinary study of major contemporary, interrelated global issues: war, peace, and security: development, health, and human resources: environment and natural resources, and cross-cultural understanding.

Students interested in complementing their study with courses that address these issues may work toward a certificate or a minor in global studies. If they are eligible, they may enter as honors interdisciplinary major in global studies.

The Global Studies Program provides suitable background for a variety of careers. Depending on the choices made in shaping the program, it can provide a broad, integrative base for more specialized or advanced work in a variety of academic disciplines, or for study at law. It also provides suitable background for work in international business and with international and government agencies.

Programs

Honors Major

The global studies honors major is a broadly prescribed program that gives a great deal of flexibility yet at the same time has specific requirements. To be eligible, students must be in the College of Liberal Arts Honors Program. To fulfill the requirements of the major, students must take a core curriculum of courses, develop a familiarity with one major field, while developing skills in a language or languages that are represented in the curricula of the area, complete a senior seminar and a minor. All students take the following core curriculum of 37 semester hours.

Group A

471 Global Interdependence and Human Survival
471.195 Global Studies Seminar

Group B

Four courses chosen from the following:

6E 125 International Economics
6A 182 United States in World Affairs
69 152 American Foreign Policy
30 182 International Politics
30 190 Introduction to International Relations
30 190 The Politics of International Economics
47 150 Perspectives in Global Studies
91 1010 Human Rights in the World Community: Problems of Law and Policy
91 195 Introduction to Public International

Group C

As of these:
97 143 War and Society
97 190 International Politics
97 190 Influence of War and Peace
47 190 Contemporary Environmental Issues
97 190 Third World Development Support
97 190 The Political Economy of the Third World
97 190 Foreign Policy of the Third World

World Area

Students take 12 semester hours of courses that focus on a major world area other than the area with which the student is primarily familiar. Areas for which there are sufficient course offerings at The University of Iowa are:

Western Europe
France
Germany
Great Britain
Western Europe as a unit
Eastern Europe and/or the Soviet Union
Latin America
Africa

The Middle East

Language

Each student is required to demonstrate an ability to use a foreign language that is wholly used in the world area studied. The details of the requirement are worked out on an individual basis. In no case is the requirement less than that for the B.A. degree of the College of Liberal Arts 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 (8 for Chinese and Japanese and 5 for Hebrew) and preparation for the world affairs requirement.

Topical Concentration
Each student develops a topical concentration (5 semester terms) focused on one of the following:

- War, peace, and security
- Development, health, and human resources
- Environment and natural resources.

Senior Honors Project
Each student completes an honors project, usually during the senior year. Students sign up for 3 semester hours of research on the project.

Certificate Program
The Certificate Program in Global Studies is designed to provide an international and global orientation for students in a variety of majors. Students must choose diverse fields as engineering, business, anthropology, international law, economics, and political science. Students must complete the certificate program.

Course Requirements
Students must complete the requirements for their departmental major as well as the requirements of the certificate program. Courses counted for the major also may be counted for the certificate. Those who complete the requirements are awarded a certificate in global studies when they receive their bachelor's degree, and the completion of the program is noted on their transcript.

Requirements
Students in the certificate program may take courses in the basic area, in each of four emphasis areas, and in a foreign language.

Basic Area
All students must take the following:

- 411 Global Interdependence and Human Survival (3 s.h.)
- 4180 Global Studies Seminar (3 s.h.)

One of the following courses (3 s.h.):

- 56:125 International Economics
- 156:152 United States in World Affairs 1905-1975

- 56:300 Introduction to International Relations
- 56:400 International Politics
- 56:412 American Foreign Policies
- 56:415 The Politics of International Economics
- 57:203 Prospects in Global Studies
- 91:133 Human Rights in the World
- 91:135 Introduction to Law and Policy
- 91:155 Introduction to Public International Law

Emphasis Areas
Each student will take one course in three of the following areas, and three courses in a fourth. The first course to be taken is indicated, which can be counted under each area available from the program director.

War, Peace, and Security
This component of the Global Studies Program deals with the arms or armed forces; pursuit of political policies on a national scale which can be counted under each area available from the program director.

Development, Health, and Human Resources
This component deals with problems of developing societies within the framework of a competitive global economy.

Environment and Natural Resources
This component is concerned with the use, exploitation, and disposal of global resources. Of special concern are environmental problems that arise from the transformation of the earth's surface and human resources by humans using modern technology.

Cross-Cultural Understanding
Global issues require for their analysis and solution patience educators to understand that perceptions, values, and beliefs vary among societies of diverse cultures and that direct values complicate the process of people communicating about and arriving at possible solutions; that without careful communication, it is risky to accept as absolute 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, dimensions, and policy implications of these value differences, to foster we cross-cultural sensitivity necessary for dealing with global issues, and to encourage students to clarify their own values about this disagreement on the analysis of global problems. Students who choose to take three courses in this area should select three courses that bear on the history, culture, and politics of a single major world region. Students who take just one course should take the following:

- 1233 Introduction to the Study of History and Society

Foreign Language
All certificate program students are required to complete two years of study of a foreign language, or equivalent, and are encouraged to go beyond this minimal requirement.

Minor
The requirements for the global studies minor are the same as those for the certificate, except that courses taken in the student's major must constitute the remaining hours toward the minor.

Courses
412 Global Interdependence and Human Survival (3 s.h.)
412 Global Studies Seminar (3 s.h.)
4180 Global Studies Seminar (3 s.h.)
56:125 International Economics (3 s.h.)
56:152 United States in World Affairs 1905-1975 (3 s.h.)
56:300 Introduction to International Relations (3 s.h.)
56:400 International Politics (3 s.h.)
56:412 American Foreign Policies (3 s.h.)
56:415 The Politics of International Economics (3 s.h.)
57:203 Prospects in Global Studies (3 s.h.)
91:133 Human Rights in the World (3 s.h.)
91:135 Introduction to Law and Policy (3 s.h.)
91:155 Introduction to Public International Law (3 s.h.)

See "Classic."
Undergraduate Program

Baccalaureate graduates in history work in a variety of positions in business, public service, or journalism. Many plan further training in history, law, religion, library and information science, or social work.

A major in history includes work in other fields that will illuminate and expand the meaning of history courses as well as introduce the underivable-to-different-body of information and approaches to understanding the ways societies and cultures work. For example, students majoring in history are encouraged to fulfill the College of Liberal Arts degree requirement in a second language by selecting a language that fits their interests.

The general major is for students with a general interest in history. The program requirements are:

A minimum of 24 semester hours in courses offered by the Department of History numbered 1151 or higher, of which at least 12 semester hours must be in non-U.S. history. This limitation is imposed to assure acquaintance with history of at least one other society besides our own.

Three semester hours in 1651. Colloquium for History Majors: a colloquium consists of a small number of students collectively studying problems in ways that fit training and experience in group discussion, analysis, and criticism. (It is best taken after the student has finished a number of other history courses.

A minimum of 15 to 18 semester hours of course work in related areas, such as anthropology, economics, fine arts (including studio courses), geography, literature (ancient and modern), philosophy, political science, psychology, religion, and sociology, or a second major in any of these areas, courses taken to satisfy General Education Requirements will not be counted toward the related-areas requirement.

Of the 24 semester hours of history required for the major, 12 (including the 3 semester hours of colloquium) 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.

Students must take the courses required by the General Education Requirement in Historical Perspectives by taking any of the following courses taught by members of the history faculty: 16:12f, Introduction to History, 16:15 Western Civilization to 1763, 16:22f, Western Civilization Since 1763, and 16:56, Civilization of Asia. Note: Any of these courses must 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 choose an area of concentration in history and meet the following requirements.

American History Concentration

Courses in U.S. history (excluding 16:10, Colloquium for History Majors):

- Courses in related areas:
  - 30 s.h.

Students must select 12 semester hours of course work in one of the related areas chosen from economics, geography, world history (non-U.S.), political science, sociology.

Students also must meet a special requirement in one branch of American history by taking a 100-level course covering a period prior to 1750. 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.

World History Concentration

Courses in core U.S. history:

- Courses in related areas:
  - 30 s.h.

Students must select 12 semester hours of course work in each of two related areas chosen from economics, geography, American and European history, political science, sociology.

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. Students seeking the teaching majors in history also must complete the professional courses in social studies education required for teacher certification. They may be admitted to the Teacher Education Program in social studies education (see the "College of Education" section of the Catalog).

Honors

The honors major is for students of superior ability who want a distinctive program that enables them to pursue special interests and enjoy the experience of individual research. To undertake the honors major in history, students must be admitted to the College of Liberal Arts Honors Program by the director of that program, and for the honors program in history by the department. Application should be made by the beginning of the junior year and may be made earlier. Successful completion of the honors major leads to the Bachelor of Arts degree with honors in history. Requirements are:

A minimum of 24 semester hours in courses offered by the Department of History, of which at least 12 semester hours must be in non-U.S. history, an honors major in history; a minimum of 15 semester hours in related courses (see general major in history), at least 15 semester hours of the department's honors courses, which may include 8 to 16 semester hours of honors essay credit. Successful defense of all honors essays.

Graduate Programs

The graduate programs in history prepare students for (a) positions such as high school or college teaching, public service, and community research, and government, and other public service, and (b) advanced work in graduate school. A three-year Master of Arts degree is available for qualified students. In addition, the University of Iowa offers the Ph.D. degree in history. The dissertation major for the Ph.D. degree is history. The dissertation minor for the Ph.D. degree is history.

Requirements will not be counted toward the related-areas requirement.
Master of Arts

There are two M.A. programs in the History Department. The first is for students who plan to work toward the Ph.D. degree. It requires a minimum of 31 semester hours of credit, including the completion of a research thesis. The candidate must earn at least 24 semester hours of credit in the history department, including at least two seminars or one seminar and one readings course. One seminar or readings course must be taken in each of the first two semesters of residence. Twelve semester hours must be in the area of the student's essay topic, and at least six semester hours must be in a second division, including either a seminar or a readings course.

The essay in the major division must be based on original research and should be approximately 10,000 to 15,000 words in length. It usually appears as a term paper for the seminar in the major division and is completed by the following semester under the guidance of the supervisor, when the student is in residence. 16.249 Individual Study. Graduate. The finished product should resemble the dissertation of articles in learned journals. Just as the Ph.D. dissertation takes the form of a full-length monograph, so does the M.A. dissertation.

The alternative plan for the M.A. is designed for students who do not intend to pursue the doctorate in history. The basic course requirements are much the same as those for the Ph.D.-track M.A. They are 30 semester hours overall, 24 in history, 12 in one major division, including a minimum of just one readings or seminar course. The two plans differ only in respect to concentrations: fields. The Ph.D. track emphasizes the development of research capabilities culminating in the essay; the alternative plan stresses breadth of learning. Students in the alternative plan must take at least 6 semester hours in each of 2 main division courses, including at least 6 semester hours in a related department. Included in these 12 main division hours must be at least 3 readings or seminar courses in history.

After completing these requirements, or during the semester in which they are to be completed, the M.A. candidate must take an oral and written comprehensive examination in the major division.

Doctor of Philosophy

Students who earn the M.A. with research essays 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 specified by the Graduate School, in addition to the requirements specified by the Graduate Program. (See the Graduate College section of the Catalog) and must submit a specimen of their writing, which will constitute a seminar paper or an M.A. thesis. The candidate must earn at least 72 semester hours of credit, including credit for work done toward the master's degree. The 72 semester hours must include at least 22 semester hours (eight courses) in 200-level history courses, open only to doctoral credit. At least 30 of these 22 hours must be completed before the student takes the comprehensive examination, and at least 30 of these 32 hours must be completed at The University of Iowa. Research seminars taken at the M.A. level may be counted toward the 52-hour requirement. The candidate must also earn 21 semester hours of credit in the field of specialization: philology of history, historiography, or methods of historical research.

The department has no common language requirement for the Ph.D., but the supervisor may require the candidate to demonstrate a reading knowledge of one or more foreign languages and/or proficiency in the use of other study tools. The candidate may select the comprehensive examination, using their requirements have been met.

The comprehensive written and oral examination covers three distinct fields, two of which must be in a major division that is chosen from the following divisions:

- Ancient World
- Medieval Europe
- Europe, including Great Britain, 1500 to 1875
- Europe, including Great Britain, 1875 to present
- Russia and the Soviet Union
- United States history
- Latin American history
- Chinese history
- Japanese history
- History of India
- Economic history
- Military history

The third field must be either in a division outside the candidate's major division or in a related department. Students will be notified by the end of the fall term, of the character of the written part of the comprehensive examination. Some may consent to take the form of a syllabus, a critical bibliographic review, or a paper in form or combination of forms that the committee deems suitable. The oral portion of the comprehensive examination will cover issues and problems arising from the examination papers.

Graduate Admission

Applicants for admission to the graduate program in history must meet the general requirements for admission to the Graduate College: academic transcripts; letters of recommendation, and Graduate Record Examination (GRE) scores. In addition, students must submit examples of original writing in the history department, such as term papers, seminar papers or a thesis. All materials must be submitted by April 30 for admission to the summer session or fall semester, or by November 10 for spring semester. The application for graduate awards forms is separate, with a February 1 deadline.

New students applying for aid must submit the application for admission when they apply for aid, or earlier. Those wishing to be considered for the University-wide Iowa Fellows Program should have their applications completed by January 16.

Guide to Graduate Study

Further information on graduate study is contained in the department's Guide to Graduate Study, which can be obtained upon request from the history department. The guide is revised every spring to include the latest faculty listing, research interests of faculty members, and regulations on study toward advanced degrees and other information of interest to prospective students.

Special Facilities

The University Libraries are strong in all aspects of U.S. history. The Main Library houses over 60,000 books and related collections, as well as other unique materials. In addition, there are significant strengths in French and English materials. The Iowa State Historical Department in Iowa City and the Herbert Hoover Presidential Library in West Branch possess additional valuable reference materials.

Courses

Courses numbered 161 through 1620 are individually numbered to satisfy the General Education Requirements in historical perspectives. They cannot be taken pass/fail/unsatisfactory even when they are taken in courses. History majors must have permission to enroll in order to enroll. Certain classes numbered 200 and above are open to freshmen who have already completed the General Education History requirement in historical perspectives. Most courses numbered 200 and above are offered alternately each semester. Courses numbered 200 and above usually are offered as occasion demands.

University of Iowa Undergraduate Course Descriptions

16.1 World Civilization to 1750

16.2 Western Civilization since 1750

16.3 Civilization of Asia

16.4 Civilization of Africa

16.5 Civilization of Africa

16.6 Civilization of Africa
HOME ECONOMICS

Chair: Carolyn W. Lara-Brown
Professor: Lawrence E. Putnam, Carol T. Feldke
Associate Professor: Margaret N. Kanas, Nancy Scheid
Instructor: Virginia Whiteland
Associate professaut: Richard T. Carynsky
Associate professor: Elizabeth Alls
Assistant professor: Neal Doleman
Assistant professors: Nancy Snider, Marilyn A. Weaver
Undergraduate degrees offered: B.A., B.S. in Home Economics
Graduate degrees offered: M.A., M.S. in Home Economics

The Department of Home Economics is being phased out as a result of action taken by the State Board of Regents. No entering freshmen or transfer students may desire home economics as a major. Undergraduate students enrolled at The University of Iowa prior to June 1, 1989, will be permitted to declare home economics as a major if they meet the requirements determined that they can complete the required home economics courses before those courses are discontinued. No admissions will be accepted for graduate study in home economics.

Requirements for undergraduate and graduate degrees, the Cooperative Education/Internship Program, honors, and a major in home economics remain the same as listed in the 1988-1990 General Catalog.

All instruction in home economics is scheduled to end May 31, 1992. Majors may hope to complete General Education requirements, and electives into home economics, and effective courses in order to complete required home economics courses before this end date. Therefore, bachelor degree in home economics will be awarded until fall term, continually enrolled undergraduate home economics majors have completed the remaining course requirements. Students not majoring in Home Economics may elect to take service courses whose space is available.

Courses

Primarily for Undergraduates

1708 Cooperative Education Internship: 0 s.h.
1710 Human Development and the Family: 3 s.h.
1726 History and Development of the Young Child: 3 s.h.
1746 Introductory Nutrition: 3 s.h.
1750 Design and the Environment: 3 s.h.
1760 Introductory Clothing Construction: 3 s.h.
1768 Textiles for Consumers: 3 s.h.

For Undergraduates and Graduates

1730 Adolescence and the Family: 3 s.h.
1749 Caflisch and Violence in Families: 3 s.h.
1753 Physical Aspects of Aging: 3 s.h.
1755 Management of Family Resources: 3 s.h.
1757 Personal Financial Management: 3 s.h.
1762 Nutrition and Family Life: 3 s.h.
1773 Parent-Child Relationships: 3 s.h.
1777 Human Sexuality: 2 s.h.

17128 Methods Home Economics: 3 s.h.
17137 Research Methods: 3 s.h.
17144 Family Economics: 3 s.h.
17246 Human Development and the Family: 3 s.h.
17304 Introductory Social Science: 3 s.h.
17454 Introductory Psychology: 3 s.h.
17509 Social Work Practice: 3 s.h.
17512 Social Work Practice: 6 s.h.
17515 Social Work Practice: 3 s.h.
17517 Social Work Practice: 3 s.h.
17526 Social Work Practice: 3 s.h.
17536 Social Work Practice: 3 s.h.
17541 Social Work Practice: 3 s.h.
17546 Social Work Practice: 3 s.h.
17551 Social Work Practice: 3 s.h.
17556 Social Work Practice: 3 s.h.
17561 Social Work Practice: 3 s.h.
17566 Social Work Practice: 3 s.h.
17571 Social Work Practice: 3 s.h.
17576 Social Work Practice: 3 s.h.
17581 Social Work Practice: 3 s.h.
17586 Social Work Practice: 3 s.h.
17591 Social Work Practice: 3 s.h.
17596 Social Work Practice: 3 s.h.
17601 Social Work Practice: 3 s.h.
17606 Social Work Practice: 3 s.h.
17611 Social Work Practice: 3 s.h.
17616 Social Work Practice: 3 s.h.
17621 Social Work Practice: 3 s.h.
17626 Social Work Practice: 3 s.h.
17631 Social Work Practice: 3 s.h.
17636 Social Work Practice: 3 s.h.
17641 Social Work Practice: 3 s.h.
17646 Social Work Practice: 3 s.h.
17651 Social Work Practice: 3 s.h.
17656 Social Work Practice: 3 s.h.
17661 Social Work Practice: 3 s.h.
17666 Social Work Practice: 3 s.h.
17671 Social Work Practice: 3 s.h.
17676 Social Work Practice: 3 s.h.
17681 Social Work Practice: 3 s.h.
17686 Social Work Practice: 3 s.h.
17691 Social Work Practice: 3 s.h.
17696 Social Work Practice: 3 s.h.
17701 Social Work Practice: 3 s.h.
17706 Social Work Practice: 3 s.h.
17711 Social Work Practice: 3 s.h.
17716 Social Work Practice: 3 s.h.
17721 Social Work Practice: 3 s.h.
semester hours after entering the program, 1/2 of which must be in 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 hours.

Guidelines
Each plan of study submitted for approval must provide the following information:
A description of achieveable goals for the student's degree with a clear statement of the reasons for pursuing the BFA in any departmental program.
A list of advanced-level course work already completed and a description of its relevance to the proposed plan of study.
An outline of advanced-level course work planned for all remaining semesters, noting how the courses are related to each other, in sequential interests, and to the central focus of the plan of study.
Each plan of study is approved by a committee that includes the coordinator, the faculty advisory committee, and BS advisers. Reservations are held several times each semester.
If the committee does not grant approval, the plan of study may be released to the student for revision and resubmission as the most comprehensive study, in some cases, the student may be referred to a more appropriate department.
Students are required to take the courses approved in the plan of study. A limited number of substitutions may be allowed only if they are clearly consistent with the areas of concentration in the approved plan of study and only if they are approved in advance by the BS advisor. Unpublished substitutions may be designated as elective course work.
Significant changes in the focus of a student's plan of study require the reconsideration and approval of a revised plan of study. The student's academic advisor determines whether change warrants a revised plan.
Forms and guidelines for preparing the plan of study are available in the office of General Studies/Interdepartmental Studies Advising Office, 112 Schaefer Hall, or in the Office of Academic Programs, 116 Schaefer Hall. A list of review committee meeting times is available each semester.

ISP Requirements
In addition to having an approved plan of study, students must complete the following requirements for the BFA in interdepartmental studies.

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 introduction section for specific information.)

Advanced Course Work
Students must complete at least 30 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 fulfilling this requirement.
If more than 18 semester hours of advanced courses are taken in one department, however, the total may be counted toward the 124 semester hours needed for graduation.
Advanced courses typically are those numbered 100 or above. At the discretion of sponsoring department(s) and with approval of the Office of Academic Programs, courses numbered below 100 but taught at an advanced level also may be used to satisfy this requirement. Advanced courses are listed later in this section.
The Buchanan grading option is not available for the 32 semester hours of advanced course work required for the degree, but may be used for advanced course work beyond the 36 semester hours.
Courses taken to satisfy the General Education Requirements may not be counted toward completion of the advanced course work requirement.
Some study abroad advanced course work is considered residential work for the purposes of BFA requirements and college residence requirements. Students should check in advance with their ISU academic advisor or with the ISU coordinator.
University of Iowa Guided Correspondence study abroad courses count toward the advanced course work requirement, but the College of Liberal Arts residence requirement must be met by other 13 course work.

Grade-Point Average
Students must achieve a grade-point average of at least 2.0 in all college work attempted, all college work undertaken at The University of Iowa, and all advanced courses attempted.

Total Hours Earned
Students must earn a minimum of 124 semester hours of credit.

Restrictions
Any course 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 policies regarding residence, pass/fail grades, and academic standards apply to BS students.

Advanced Courses Numbered Below 100
The following courses are accredited as part of the 32 semester hours of advanced course work required under the BFA rules. Students must earn a grade-average of 2.00 or higher in these courses and in those numbered 100 and above.
Advanced courses numbered below 100 that were taken before spring semester 1998 are not considered advanced-level course work. Some of these courses have prerequisites or require special permission signatures.

American Studies
4590 Seminar in Americas Cultural Studies 3 h.

Art and Art History
1540 Advanced Painting 3-5 h.
1542 Undergraduate Printmaking 3 h.
1571 Undergraduate Sculpture Workshop 3 h.

Asian Languages and Literature
3123 1-Year First Year 3 h.
3124 1-Year Second Year 3 h.
3125 1-Year-Non-Traditional 3 h.

Botany
2.5 Iowa Flora 2 h.

Computer Science
2231 Algorithms and Data Structures 3 h.
2232 Programming Language Concepts 3 h.
2233 Digital Systems and Computers 3 h.
2235 Design of Interchangeable System Software 3 h.
22351 Computer Graphics 3 h.
22353 Elementary Numerical Analysis 3 h.

Communication Studies
All courses numbered 365-380 and above.
All courses numbered 365-380 and above.

Comparative Literature
4610 Minor of World Literature I 3 h.
4611 Minor of World Literature II 3 h.
4650 Non-Western Literatures 3 h.
4655 Undergraduate Seminar 3 h.

Computer Science
2231 Algorithms and Data Structures 3 h.
2232 Programming Language Concepts 3 h.
2233 Digital Systems and Computers 3 h.
2235 Design of Interchangeable System Software 3 h.
22351 Computer Graphics 3 h.
22353 Elementary Numerical Analysis 3 h.
Dance
137:91 Independent Study 4 s.h.
137:92 Independent Choreography 4 s.h.

Desert Wildlife
on 2 Human Histology 4 s.h.

English
All courses numbered above 610 except 62 courses

Geology
12:41 Mineralogy 4 s.h.
12:52 Elementary Petrology 4 s.h.
12:92 Structural Geology 2 s.h.

Mathematics
22M:27 Introduction to Linear Algebra 4 s.h.
22M:28 Calculus III 4 s.h.
22M:41 Differential Equations for Engineers 3 s.h.
22M:42 Vector Calculus for Engineers 3 s.h.
25M:50 Elements of Group Theory 3 s.h.
25M:55 Fundamental Properties of Spaces and Functions 3 s.h.
22M:70 Foundations of Geometry 3 s.h.
22M:72 Elementary Numerical Analysis 3 s.h.

Music
25:141 History of Music I 3 s.h.
25:142 History of Music II 3 s.h.

Physical Education and Sports Studies
28:55 Psychosocial Dimensions of Physical Activity 3 s.h.

Spanish and Portuguese
35:30 Spanish Conversation Advanced Level 2 s.h.
35:35 Spanish Conversation Intermediate Level 2 s.h.

Statistics and Actuarial Science
22M:26 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.

Theatre Arts
40:12 Shakespeare 2 s.h.
40:90 Play Script Analysis 2 s.h.
40:62 Basic Playwriting 2 s.h.

Related Considerations
All courses numbered with the prefix 7 (College of Education) are considered to be in one department.

Honors
EP students qualify for membership in the College of Liberal Arts Honors Program by maintaining a cumulative grade-point average of at least 3.20. Graduating with honors usually includes the successful completion of the honors requirements in a particular department. A list of departmental requirements is available from the College of Liberal Arts Honors Program or from the EP coordinator.

Career Considerations
Since the B.A. degree in Interdepartmental Studies offers students opportunities unique to the traditional discipline pattern, students must create programs of study that meet their individual educational and career objectives. Those who plan to seek employment immediately following graduation should familiarize themselves with the educational background and qualifications required by employers and should include appropriate courses in their programs of study.

Students preparing for advanced study should become familiar with the admissions requirements of graduate or professional schools. The entire program should then be organized to enable the student to pursue graduate or professional studies in his or her major. The easiest way is for him to take complete and necessary prerequisites.

EP students who design a comprehensive program and maintain a cumulative grade-point average of at least 3.20 may consider early study at another graduate or professional school in order to complete employment or admission to graduate and professional schools.

For More Information
Information about the Interdepartmental Studies Program is available from the Bachelor of General Studies/Interdepartmental Studies Academic Office, 113 Schaeffer Hall.

Courses
149:300 Cooperative Education Internship 6 s.h.

IOWA LAKEDES LABORATORY

Location: Iowa State University

IOWA LAKEDES LABORATORY

The Iowa Lakeside Laboratory is a biological field station comprising approximately 140 acres of grassland and gallery forest along the west shore of Lake West (Iowa) in northeast Iowa.

The laboratory was established in 1959 under the leadership of Thomas H. MacPhail, whose endowment as a University of Iowa biologist and geologist from 1878 to 1914 was recognized by his appointment as University president from 1914 to 1916. The lab site was the first site set aside for the conservation and study of the rich flora and fauna of the northern Iowa lake and prairie regions.

Since 1878, the University of Iowa has cooperated with the Iowa State University and the University of Northern Iowa in a lab program. Representatives of the three schools make up an advisory board, which determines the scientific and educational policies of the lab.

The Iowa Lakeside Laboratory offers course work in two six-week terms during the summer session. Enrollment is limited to one course per term, for 5 semester hours of credit.

The laboratory gives advanced undergraduate and graduate students the opportunity to study plant and animal life in its natural setting. A strong emphasis is placed on undergraduate students for employment or admission to graduate and professional schools.

Teaching and research facilities include: seven laboratories, a library, and a lecture hall. Living accommodations include: cottages, dormitories, and a large mess hall.

Financial Aid
The University of Iowa has established several Thomas H. MacPhail Scholarships in Natural Science for undergraduate and graduate students attending the University. The scholarships cover Iowa Lakeside Laboratory tuition only. Scholarship applications close April 1.

Registration
Current or former students of the University of Iowa, the University of Northern Iowa, and Iowa State University may enroll in those institutions with the registration forms from the Lakeside Laboratory bulletin. Students from other institutions must apply for admission to one of the three cooperating universities, which has a provisional admission policy for students who wish to register for summer
Curriculum

Majors must complete a minimum of 30 and a maximum of 34 semester hours of journalism courses with a grade of C- or better in each course and 24 semester hours in a second area of concentration. All majors must complete 19.110, 19.115, 19.119 Journalistic Reporting and Writing or one advanced reporting and writing course (19.120-19.125). Students must complete either an advanced reporting and writing class or a media workshop (19.130-19.137). Every major must complete 10.149 Legal and Ethical Issues in Communication and one advanced conceptual course numbered 19.150 or above. Majors take additional electives to develop professional and conceptual interests.

Because of the flexibility inherent in the undergraduate program, a new major should develop an individual plan of study in consultation with a faculty advisor.

Required Courses

Minimum of 38 semester hours, maximum of 34 semester hours.

Premajor Foundation
19.00 Social Scientific Foundations of Communication 3 s.h.
19.91 Cultural and Historical Foundations of Communication 3 s.h.

Journalism Laboratory
19.191 Journalistic Reporting and Writing 4 s.h.
One advanced reporting and writing course (19.120-19.125) 4 s.h.
A second advanced reporting and writing course (19.120-19.125) 4 s.h.
One media workshop (19.130-19.137) 3 s.h.

Conceptual
19.169 Legal and Ethical Issues in Communication 3 s.h.
A conceptual course numbered 19.150 or higher 3 s.h.

Electives

Courses from undergraduate courses 6 s.h.

Additional Electives
Students have the option of taking an additional 5- or 6-semester hour course, for the maximum 34 semester hours.

Second Area of Concentration

In addition to completing the College of Liberal Arts General Education Requirements, every journalism major must complete a second area of concentration outside of journalism and mass communication. Both the second area permits students to acquire a substantial body of knowledge; learn how another discipline views the world; or develop a complementary set of skills to those in journalism and mass communication.

This concentration requirement may be fulfilled by completing a second major or by choosing 24 semester hours of related courses in one or more concentrators. Students who do not complete second courses must complete at least 15 of the 24 required semester hours in upper-level courses. Course work in the second area must be arranged in consultation with an adviser; each student must have his or her adviser's written approval of the second area before graduation.

Bachelor of Arts

A student seeking a B.A. in journalism and mass communication must complete the journalism major requirements (30 semester hours), and fulfill the school's second area of concentration requirement in one of two ways:

- Obtain a full B.A. major in another department;
- Complete a 24-semester-hour concentration of related courses in one or more departments that offer B.A. degrees; this major must include 15 or more acrual semester hours of work in upper-level courses and should be designed by the student in consultation with an adviser; the adviser must certify the completion of the second area of concentration before the student may graduate.

Bachelor of Science

A student seeking a B.S. in journalism and mass communication must complete the journalism major requirements (30 semester hours), and 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;
- Complete the following:
  
  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; at least 15 hours of the second-area work must be in upper level courses and should be designed by the student in consultation with an adviser; the student must have concurrent admission to the second area of concentration by a journalism adviser in order to graduate; and

At least one additional standard major with a concentration in communication and a minor in mass communication for the B.S. degree in the department in which the majority of the second-area work is done.

Honors

Majors with outstanding academic records may participate in the College of Liberal Arts Honors Program and earn the honors degree in journalism and mass communication. The program provides students with an opportunity to complete research work under the guidance of a faculty adviser.

A major with an overall grade-point average of 3.30 or higher may write an application letter to the school's head of undergraduate studies requesting admission to the honors program in the School of Journalism and Mass Communication. The letter should review possible areas of interest and topics the student might pursue in completing an honors project. The student then consults with the head of undergraduate studies to identify a faculty member with whom he or she will develop an honors project. The student may arrange honors readings with a particular faculty member or take existing courses in the area of interest.

Honors projects must be completed in the form of a thesis or a professional project. The student must develop the thesis and topic of the project in a written proposal, which must be accepted by a faculty member. Once the proposal is accepted, the student enrolls in 19.190 Honors Project under the faculty member's written number. Students become official honors candidates once they enroll in this course.

The honors candidate must make a formal presentation of the project to a committee consisting of the faculty adviser, as chair, and two other faculty members selected by the student in consultation with the adviser. At least two committee members must accept the completed project before the student is eligible to receive an honors degree in journalism and mass communication. The school's minimum limit of 34 semester hours in journalism and mass communication courses may be waived for students who complete honors degrees in journalism, on the recommendation of the honors adviser.

Minor

To meet the requirements for a minor in journalism and mass communication, students must complete at least 15 semester hours in journalism and mass communication with a grade-point average of 2.00. Of the 12 of the 15 semester hours must be completed at the University of Nebraska. The following courses are strongly recommended:

- 19.91 Social Scientific Foundations of Communication 3 s.h.
- 19.91 Cultural and Historical Foundations of Communication 3 s.h.

The major is not intended to be sufficient professional preparation for a career in journalism or mass communication. The minor should be regarded as an introduction to the field.

Courses for the minor may not be taken pass/no-pass. When students apply for a degree, they must consult the Office of the Registrar that they want to have a minor listed on their transcripts.
Transfer Students
All transfer students with a declared interest in Journalism are classified as premajors. They may apply for major status during the semester in which they will have completed at least 30 semester hours (excluding those from The University of Iowa and other institutions) and must meet the following requirements: 19-108 Social Scientific Foundations of Communication, and 19-512 Cultural and Historical Foundations of Communication. Neither of these premajor course requirements may be waived on the basis of credit at another institution. 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 20 percent (6-7 semester hours) of the student’s total number of transfer hours toward a major in journalism and mass communication at Iowa. Some journalism coursework taken elsewhere might be applicable toward fulfilling elective and/or required areas of concentration requirements. Any transfer credits intended to count toward School of Journalism and Mass Communication - requirements must be approved by the head of undergraduate studies.

Graduate Programs
Master of Arts
The School of Journalism and Mass Communication offers a Master of Arts program with three separate emphases: professional, journalistic, and mass communication, and development support constitutes this emphasis and would indicate the emphasis for which they seek admission.

Each emphasis requires 30 semester hours of approved course work; the completion of a comprehensive examination; and the successful completion of the final examination. The specific requirements for each emphasis are listed below.

Professional Program in Journalism
This program is for individuals who wish to improve their technical and analytical skills and further their understanding of the role and nature of mass communications in contemporary society, but who do not plan to engage in a Ph.D. work. It serves the student who has a background in a field other than journalism and has completed undergraduate work in journalism and mass communication in another field or has worked in a career unrelated to journalism (see “Group 1 Requirements,” below). It also serves the student who has worked in some area of mass communication (see “Group 2 Requirements” below).

The program is not designed or intended for individuals who have just completed an undergraduate program in journalism and have no subsequent work experience in mass communication.

Group 1 Requirements
19-112 Journalistic Reporting and Writing (does not count toward degree) 3 s.h.
19-210 Master’s Seminar 3 s.h.
Two advanced reporting and writing courses (19-218-19-220) 6 s.h.
A third advanced reporting and writing course 3 s.h.
One media workshop (19-248-19-249) 5 s.h.
Electives 15 s.h.
19-208 Master’s Research (project) 3 s.h.
Electives require consent of the advisor and may be selected from other School of Journalism and Mass Communication courses or from courses offered by other departments.

Group 2 Requirements
19-209 Master’s Writing 3 s.h.
19-209 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 other School of Journalism and Mass Communication courses or from courses offered by other departments.

Every student in the professional program must complete a professional project (19-294) under the supervision of a graduate faculty member and take a final examination during the last semester of enrollment.

The program offers flexibility within the professional journalism program. The model programs are intended as general guidelines for new and prospective students. The actual program is a study for any student is planned in consultation with the adviser.

Mass Communication and 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:
19-208 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 3 s.h.

Electives in journalism and mass communication and in other departments 19 s.h.
19-299 Master’s Research (thesis) 3 s.h.
Every student in the mass communication and communication emphasis must complete a thesis (19-299) under the supervision of a graduate faculty member and take a final examination during the last semester of enrollment.

All students are expected to make careful work outside the School of Journalism and Mass Communication; the nature and extent of the work is determined by the student and the faculty adviser.

Development Support Communications Emphasis
This multidisciplinary emphasis involves the cooperation of the departments of Geography and Political Science. It is designed for students seeking to gain analytical and technical expertise and an understanding of the role and function of mass communication in the process of helping solve some World development problems. The emphasis offers both thesis and nonthesis tracks.

Information on specific requirements of the development support communication emphasis are available from the School of International Studies.

Doctor of Philosophy
The Ph.D. program emphasizes interdisciplinary inquiry into mass communication and its role within cultural and historical perspectives. Approaches include philosophical, ethical, and critical inquiry. The program’s substantive nature is defined by the scholarly interests of the faculty, who have most frequency to investigations of historical, legal, economic, social, and cross-cultural aspects of communication, both verbal and visual.

The Ph.D. program is highly individualized. Entering 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 contexts. A more complete description of the graduate program is available from the School of Journalism and Mass Communication. Students should ask for the Graduate Studies Handbook.

19-284 Communication Research: Historical Approaches
19-301 Communication Research: Behavioral Approaches
19-299 Communication Research: Phenomenological Approaches
19-283 Communication Research: Legal and Policy Approaches
Facilities
The School of Journalism and Mass Communication is located in the three-story Communications Center. The school has special laboratories for photography, typographic, audio-visual, electronic-newswriting, and desktop publishing. Many students use the newsroom and other facilities of the University's award-winning student newspaper, The Daily Illini, which is located in the Communications Center. Special facilities in the building include the Leslie G. Miller Seminar Room and the Martin Special Presentation Room.

The school has its own resource center and provides offices for officers of the Iowa High School Press Association and the Quill and Scroll Society. A display gallery is available for student papers, 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 is The Journal of Communications Inquiry, edited by graduate students, and The Fact Guide: Scholarly Journals in Mass Communication and Related Fields.

Financial Aid
Nearly $60,000 in scholarships is available to undergraduate and graduate journalism students from the school and majors each year. Information and applications about various kinds of aid 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 learning opportunities outside the classroom. Internships in journalism and public relations positions are available to students through The University of Iowa Cooperative Education Program. These experiences are selected and monitored to contribute to students' professional growth.

The School of Journalism and Mass Communication does not award academic credit for internships. In addition to internships, special opportunities are available, including the Daily Iowan, KUKU by Karol, and The Elkhart Truth. The Experiment yearbook—provide opportunities for journalism experience.

Job Placement
The school's placement offices of professional jobs go to journalism students and graduates. The University's Career Information Services and the Business and Liberal Arts Placement Office provide career guidance and placement services as well as workshops and programs on job-seeking skills.

Special Activities
The school engages in a variety of activities for the enrichment of students, faculty, and the entire campus. Many speakers visit campus each year as part of John F. Murnaghan Lectureships and the Leslie G. Miller Lecture Series. Campus organizations for students include the Alpha Delta Alpha, National Association of Black Journalists (NABJ), Public Relations Student Society of America (PRSSA), and the Society of Professional Journalists (SPJ).

Semester in London
Each spring semester, advanced undergraduates and M.A. professional students have an opportunity to study in England through the London Seminar Program. A dozen students take courses, including some offered in conjunction with the City University of London. Courses of both practical and theoretical nature are offered, with courses in specialty reporting and the history of the British media offered by the City University. Internships may be arranged by the program.

Courses
Primarily for Undergraduates
All courses listed as 100-level or higher require at least one semester standing or major status and/or consent of instructor.

130 Journalism and Mass Communication Cooperative Education Internship 1-4 h.
150 Journalism and Mass Communication Cooperative Education Internship 1-4 h.
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Latin American Studies Program

Certificate

To gain both depth of knowledge about Latin America and breadth in a variety of disciplines, students seeking the Certificate in Latin American Studies must meet at least 27 semester hours of credit hours at courses selected from a "core" curriculum of 12 courses approved by the Latin American Studies Program described below, including at least 6 semester hours in each of at least three of the following departments: anthropological, geography, history, politics, public affairs, and sociology. Students enrolled in the program may earn the certificate in Latin American Studies, or they may declare a minor in Latin American Studies. All students plan their programs in close cooperation with the Latin American studies advisor.

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Minor

To earn a minor in Latin American Studies, students complete 15 semester hours in approved Latin American Studies courses (LASC courses), with a minimum of 3 hours in each of at least three of the following departments: anthropology, geography, history, politics, public affairs, and sociology. Students enrolled in the program may earn the certificate in Latin American Studies, or they may declare a minor in Latin American Studies. All students plan their programs in close cooperation with the Latin American studies advisor.

Latin American Studies Program

Chair: Charles Hix

Graduate Program: Thomas Charles (Anthropology), New England (Anthropology), Bourbon (Politics), and Portugal (Spanish and Portuguese), Charles Hix (History), Peter Hirtle (Public Affairs), Associate director: Mario Batin (Anthropology), Maria Antiony Druety (Spanish and Portuguese), Enrique Paredes-Herrera (Spanish and Portuguese), Thomas Lewis (Spanish and Portuguese), and Portugal (Spanish and Portuguese), Douglas Milligan (Anthropology), Christopher Rollins (Art History), Mario Testino (Spanish and Portuguese), Sebear Velas (Spanish and Portuguese), and Portugal (Spanish and Portugal), Kathleen Trench (Sociology and Spanish and Portuguese).

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grade-point average of 2.00. Twelve of the 15 semester hours must be in courses numbered above 300 taken at The University of Iowa. To preserve the interdisciplinary character of the Latin American studies minor, students majoring in any of the primary departments cannot count more than 6 semester hours from courses in their major department toward the minor.

Courses Approved for LASP Certificate
For full descriptions of each of the courses listed below, see the listings in the appropriate departmental sections of the Catalog.

Anthropology
115:15 Ethnology of South America 3 s.h.
115:16 Ethnology of Mesoamerica 3 s.h.
115:18 Social Anthropology of the Caribbean 3 s.h.
115:18 Latin American Economy and Society 3 s.h.
115:12 Latin American Studies Seminar 3 s.h.
115:13 Anthropology of Mesoamerica 3 s.h.

Art
184:105 Art of Pre-Columbian America 3 s.h.

Geography
46:697 Patterns of Urbanization and Development in Latin America 3 s.h.

History
16:131 Topics in Latin American History 3 s.h.
16:132 Colonial Latin America 3 s.h.
16:132 Introduction to Modern Latin America 3 s.h.
16:133 The Mexican Revolution 3 s.h.

Political Science
30:103 Latin American Government 3 s.h.
30:145 Major Stuies of Latin America 3 s.h.
30:163 Inter-American Relations 2-5 s.h.

Portuguese
39:103 Brazilian Literature I 3 s.h.
39:104 Brazilian Literature II 2 s.h.
39:114 Culture and Civilization of the Portuguese-Speaking World (taught in English) 3 s.h.
39:159 Latin American Studies Seminar 3 s.h.

Spanish
35:20 Contemporary Latin American Narrative (taught in English) 3 s.h.
35:211 Contemporary Spanish American Fiction 3 s.h.
35:322 Spanish American Poetry I 3 s.h.
35:333 Spanish American Drama 3 s.h.
35:24 Spanish American Short Story 3 s.h.

45:150 Literature of the Discovery and Conquest of Spanish America 3 s.h.
45:152 Cultural Identity in Caribbean Literature 3 s.h.
45:154 Latin American Studies Seminar 3 s.h.
45:250 Territorial Literature in Latin America 3 s.h.

Courses
106:175 Contemporary Latin American News Commentary 2 s.h.
106:176 Latin American Studies Seminar 3 s.h.
106:178 Latin American Studies Seminar 2 s.h.

LEISURE STUDIES
See "Division of Physical Education."

PROGRAMS IN LETTERS
Director: Richard Lloyd-Jones
Programs in letters was established in 1980 as an administrative unit to coordinate several notable activities in language and literature including the International Writing Program, the Iowa Center for the Book, the Midwest Language Association, the Foundations Consultation, the Translation Workshop, and the Windhover Press.

Center for the Book
The University of Iowa Center for the Book encourages and facilitates student use and faculty research in the various disciplines associated with the book. Faculty and staff members affiliated with the center have appointments in the School of Art and Art History, University Libraries' conservation and special collections departments, the School of Journalism, and the English Department. They conduct scholarly and applied research and teach classes.

International Writing Program, Windhover Press
See "Iowa Center for the Arts" in the Special Resources at Iowa section of the Catalog.

Translation Workshop
See "Master of Fine Arts in Translation" under "Comparative Literature."

Courses
106:141 Introduction to Translation 3 s.h.
106:219 Advanced Translation 3 s.h.
106:218 Paperworks 3 s.h.
106:219/3178 Television and Production 2 s.h.

LIBERAL STUDIES
Degree offered: B.L.S.
The Bachelor of Liberal Studies (B.L.S.) program is offered by each of the Iowa, Iowa Regina universities (The University of Iowa, Iowa State University, and the University of Northern Iowa) to serve adults whose job, family, geographic location, or other personal circumstance prevents them from enrolling in campus classes as full-time, on-campus students. The program has no residence requirement. Students may complete the degree without attending a course on campus. Credit earned toward the degree may be earned in a variety of ways, including Saturday and evening classes, correspondence and independent study courses, on-campus courses at sites throughout Iowa, Internet courses, and off-campus courses during the day. Courses fulfill any of the three Iowa Regents' requirements may be applied toward the degree, at the option of students from accredited institutions.

At The University of Iowa, the B.L.S. is awarded by the College of Liberal Arts and served by the Division of Continuing Education. Since the B.L.S. is a general undergraduate degree with few traditional major B.L.S. students may not earn minors. However, the requirements are sufficiently flexible to allow students, with the assistance of a B.L.S. advisor, to structure a program that meets their individual needs and objectives. Many B.L.S. candidates plan programs designed to help them advance in their chosen career, begin a new career, or prepare for graduate or professional study. Students who have a special career goal or
advanced degree program in mind should familiarize themselves with the required educational background or prerequisite course work so that they can incorporate appropriate courses into their B.L.S. degree program.

Admission to the B.L.S. Program

Students wishing to graduate from The University of Iowa must apply formally for admission to the B.L.S. program. Interested students should consult a B.L.S. advisor before applying. To be eligible for admission to the program, the student must have earned either:

- An Associate of Arts (A.A.) degree from an Iowa community college that participates in the 1981 Iowa Community College Articulation Agreement, with a minimum grade-point average of 2.00, or
- At least 62 semester hours of college work acceptable for credit toward graduation, with a grade-point average of 2.25 or better. Students admitted to The University of Iowa must have a grade-point average of at least 2.00 to qualify for admission to the B.L.S. program.

B.L.S. Requirements:

Of the 124 semester hours of credit required for the degree, at least 80 must be earned in four-year colleges or courses defined as upper-level at the institution where the credits were earned (in the College of Liberal Arts at The University of Iowa, primarily courses numbered 300 and above). At least 45 must be completed in courses offered by the Iowa Regents universities, and 20 must be earned after 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 university from which the candidate expects to receive the degree. At The University of Iowa, B.L.S. candidates are required to complete all the General Education Requirements except physical education (see the College of Liberal Arts introductory section in the Catalog).

Since there are no traditional majors available through the B.L.S. program, candidates must earn at least 12 semester hours of credit in each of three of the following distribution areas:

- Humanities (e.g., literature, history, philosophy)
- Communication and arts (e.g., journalism, speech, drama, art, music)
- Natural sciences and mathematics (e.g., geology, botany, statistics, computer science)
- Social sciences (e.g., geography, psychology, economics, political science, sociology)

Professional fields (e.g., business, education, nursing, social work, library science)

Of these 36 semester hours, 24 must be in upper-level courses, with at least 6 semester hours of upper-level credit in each of the three areas chosen. Credit applied to the General Education Requirements may not be used to meet the distribution area requirements that they may be counted toward for the 45 semester hours of upper-level course work required if applicable.

At The University of Iowa, upper-level courses are numbered 300 and above. However, at the initiation of sponsoring departments and with approval of the College of Liberal Arts Office of Academic Programs, courses numbered below 100 may be offered at an advanced level and may be used to satisfy the 45-semester-hour upper-level requirement. Approved courses are listed in the Interdepartmental Student section of the Catalog.

Graduation requires a minimum grade-point average of 2.00 in 48 course work applied toward the degree; all course work completed after admission to the program, and all upper-level course work.

At other College of Liberal Arts policies regarding pass/fail, satisfactory/fail, academic standards, and so forth apply to B.L.S. students.

Further information about the Bachelor of Liberal Studies program is available from the Center for Credit Programs, 116 International Center.

Courses

BLS 3000 Cooperative Education Internship 1-3

LIBRARY AND INFORMATION SCIENCE

Barbara Carr Dick, Program Coordinator

Program courses include: Introductory Studies in Library and Information Science, Information Retrieval, Library Administration, Library Education, and Information Services in the Community. The program is approved by the American Library Association.

Program Goals and Objectives

The goals of the School of Library and Information Science are to offer a graduate program of basic professional preparation in library and information science that reflects the variety and growth of information needs in society and individuals; to equip students in research that increases understanding of the variety of information needs and of the actions that can be taken to provide for those needs; and to provide public service through continuing education and consulting and through association and other professional service, so that growth is fostered beyond students' basic professional program, and so that people have the service information 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 their role in today's society and the library's importance in the communication process.
- Articulate a philosophy of librarianship that includes an understanding of intellectual freedom and free dissemination of information; demonstrate a professional attitude toward the librarian's role as mediator between user and information; and show a commitment to improve the quality of library and information service in response to the needs of all segments of society.
- Demonstrate an understanding of information sources, the flow of information through society, and the role of libraries and informatics in the process.
- Demonstrate an appreciation for the collection, organization, storage, retrieval, and dissemination of information.
- Demonstrate mastery 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; a broad range of useful tools for a variety of 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.
- Conceptualize and evaluate research that helps improve the advancement of the profession and is evaluated on the basis of contributions to librarianship made by related disciplines; and
Demonstrate a commitment to professional growth.

Research Objectives
Faculty engage in research on library and information problems that advance both theoretical and practical knowledge. This includes research that directly supports the instructional program of the School of Library and Information Science.

Public Service Objectives
The school offers library and information science courses and library services, opportunities for continuing education that advance and update their awareness of current developments in library operations and information services. It provides consulting services to individuals, libraries, and organizations in order to promote better library and information service for the citizens of Iowa and surrounding areas. Faculty and students in the school participate in professional organizations at local, state, regional, and national levels.

Undergraduate Study
Although there is no undergraduate major in library science, juniors and seniors may enroll in the introductory library science courses (105 level). No course numbered 106 or above may be taken by freshmen or sophomores. No course numbered 199 or above may be taken by undergraduates.

Graduate Programs
Graduate Students Not Admitted to Master of Arts Program
Graduate students not yet admitted to the master's program in library and information science may be advised, upon request to the director, to take one course during the application process. This course may later apply to requirements for the degree. Graduate students in other programs may take a course only with approval of the director and the instructor of the course.

Master of Arts
Provisional and academic preparation for careers in all types of libraries is provided by the school's Master of Arts program. Graduates hold positions in public, school, academic, and special libraries and information centers, serving in roles such as administrator, information consultant, subject specialist, network coordinator, cataloger, children's librarian, school library media specialist, or conservator.

The Master of Arts degree in library and information science requires 33 semester hours of graduate credit with a minimum grade-point average of 2.50. and completion of a comprehensive examination. Five additional semester hours of credit are required for certification in a school media specialist.

Basic Plan of Study
The program consists of a core of required courses basic to all areas of librarianship and electives. The student's plan of study should be developed carefully in relation to career objectives. All courses are to be applied to the 33-semester-hour program as approved by the advisor.

Required Core Courses
Required of all M.A. candidates: 15 s.h.
21:111 Reference
21:152 Description and Organization of Materials
21:153 Foundations and Collection Development
21:263 Management of Libraries and Information Centers
21:246 Introduction to Information Science

Electives
Total: 18 s.h.

Elective courses in other University departments must be chosen so as to be an integral part of the students' preparation for library and information science. Although many disciplines offer cultural and intellectual support to preparation for librarianship, they do not warrant replacement of selected courses in a brief one-year program. To be applied toward the degree, electives outside the department must be taken following consultation with the School of Library and Information Science.

Complete not more than six semester hours for students having no previous courses in library science or six semester hours for students having previous science coursework. Only courses taken for graduate credit may be counted toward the University's requirements.

Thesis Option
The purpose of the thesis option is to provide an opportunity for students to complete research in an area of interest and produce a written thesis that contributes to the body of knowledge in the field. The thesis should be approximately 100 pages long, not including references. The thesis must be approved by the student's advisor, the library school, and the Graduate Council.

Transfer Credit
Up to 6 semester hours of graduate credit may be accepted to transfer from another institution, provided that the work was taken in residence at the library science program accredited by the American Library Association. Approval is given on a course-by-course basis and is determined by evaluating the course's content, sequence, and equivalency to the student's program.

Completion Time
The degree program can be completed in one calendar year (two semesters and a summer), but many students take an extra semester or two to fulfill the requirements. In particular, students whose time-consuming responsibilities, such as family duties or part-time or full-time employment, may find it difficult to carry the maximum course load. The maximum load for a graduate student is 15 semester hours during regular semesters and 8 semester hours during summer sessions.

The degree program also can be completed in four summer sessions, but school certification requires certain courses that are available only during fall and spring semesters.

Public Library Work
Public libraries provide information, educational, and recreational materials and a wide range of services for a diverse clientele. Public libraries usually receive the largest part of their funding from local taxes, but they are often supported on a regional or statewide cooperative basis. The variety of services, materials, and organizational structures of public libraries makes this a challenging area of librarianship.

A major concern of public librarians is to design innovative service programs to reach segments of the population that are not served, as well as to provide a full range of services to all members of the community. Management skills are often of critical importance.

Plan of Study
Required core courses
Suggested electives
21:231 Library Research
21:233 Library Services
21:247 Information Storage and Retrieval
21:251 Information Services
21:252 Information Retrieval
21:253 Advanced Information Retrieval
21:254 Information Organization in Libraries
21:255 Information Organization in Libraries

Electives
Total: 18 s.h.

Elective courses in other University departments must be chosen so as to be an integral part of the students' preparation for library and information science. Although many disciplines offer cultural and intellectual support to preparation for librarianship, they do not warrant replacement of selected courses in a brief one-year program. To be applied toward the degree, electives outside the department must be taken following consultation with the School of Library and Information Science.

Complete not more than six semester hours for students having no previous courses in library science or six semester hours for students having previous science coursework. Only courses taken for graduate credit may be counted toward the University's requirements.

Thesis Option
The purpose of the thesis option is to provide an opportunity for students to complete research in an area of interest and produce a written thesis that contributes to the body of knowledge in the field. The thesis should be approximately 100 pages long, not including references. The thesis must be approved by the student's advisor, the library school, and the Graduate Council.

Transfer Credit
Up to 6 semester hours of graduate credit may be accepted to transfer from another institution, provided that the work was taken in residence at the library science program accredited by the American Library Association. Approval is given on a course-by-course basis and is determined by evaluating the course's content, sequence, and equivalency to the student's program.
instruction in the use of the library and its resources, Management of subjects and language competence are often required.

Plan of Study
Required core courses 15 s.h.
Suggested electives 18 s.h.
21:003 The College of the University Library 3 s.h.
21:240 Philosophy 3 s.h.
21:247 Information Storage and Retrieval 3 s.h.
21:248 Library Automation 3 s.h.
21:249 Research Methods 3 s.h.
21:250 Advanced Reference 3 s.h.
21:252 Description and Organization of Materials I 3 s.h.
21:253 Technical and Serial Services Management 3 s.h.
21:255 Government Publications 3 s.h.
21:264 Medical Librarianship and Bibliography 3 s.h.
21:265 Law Librarianship, Bibliography, and Research Techniques 3 s.h.
21:267 Practice in Libraries 2-3 s.h.
June 1 Community Library (required for Iowa endowment for work in community college) 2-3 s.h.

Work in Special Libraries
Special Librarianship includes careers in libraries and information centers serving both profit and non-profit organizations, law firms, researches, historical societies. The ability to design services suitable to the parent organization, the possession of such skills and competencies as interesting, attracting online searching, system analysis, and organizing knowledges is a good sized subject expertise are usually required in special library work. Information brokers and entrepreneurs are also special librarians.

Plan of Study
Required core courses 15 s.h.
Suggested electives 18 s.h.
21:210 Special Libraries 3 s.h.
21:240 Bibliography 3 s.h.
21:247 Information Storage and Retrieval 3 s.h.
21:249 Research Methods 3 s.h.
21:250 Advanced Reference 3 s.h.
21:252 Description and Organization of Materials I 3 s.h.
21:253 Technical and Serial Services Management 3 s.h.
21:255 Government Publications 3 s.h.
21:264 Medical Librarianship and Bibliography 3 s.h.
21:265 Law Librarianship, Bibliography, and Research Techniques 3 s.h.
21:267 Practice in Libraries 2-3 s.h.

School Library Media Work
The school library media center makes available to students and teachers a wide range of library and instructional materials in a variety of formats. The work of the media specialist includes activities such as providing instruction in 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 certificate and an appropriate endorsement for school library work. 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.

Iowa School Media Certification K-12
Students who complete the program below will fulfill state certification requirements for endorsement as a school media specialist K-12. To be admitted to the media certification program, a student must hold or be eligible for a teaching certificate. This program requires completion of 30 semester hours. 5 hours more than are required for the M.A. degree. Thus, students completing the certification program will fulfill the requirements for the M.A. in library and information science as well. The plan of study is as follows:

21:151 Reference 3 s.h.
21:152 Descriptive and Organization of Materials I 3 s.h.
21:153 Foundations and Collection Development 3 s.h.
21:201 Management of Libraries and Information 3 s.h.
21:233 School Library Media Center Administration 3 s.h.
21:244 Library Materials for Children 3 s.h.
21:465 Library Materials for Adolescents 3 s.h.
21:262 School Library Media Center Practice 3 s.h.
7W:123 Introduction to Instructional Design and Technology 3 s.h.
7W:135 Survey of Computer Applications to Instruction 3 s.h.
21:249 Research Methods or 3 s.h.
7P:220 Educational Research Methodology 3 s.h.
7W:222 Instructional Strategies or 3 s.h.
7W:223 Consultation Theory and Practice 3 s.h.
21:222 Multi-Media Concepts in Libraries or 2 s.h.
7W:105 Design and Production of Media for Instruction 2 s.h.
Total 38 s.h.

Students who complete 29 of the above courses in a designated sequence are eligible for single level endorsement, that is elementary school media specialist (K-6) is secondary school media specialist (7-12).

Iowa Community College Certification
The school offers an approved program for librarianship requiring special skills in an area vocational school or community college. Students receive credit for an endorsement upon completion of the M.A. degree with the program listed under "College and University Library Work" in this section of the catalog and TH171 The Community College.

Students wishing to pursue community college work may need to take TH171 The Community College as an elective.

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 enrolled in a joint program works with an adviser in the School of Library and Information Science to ensure the benefits of integration. Objectives of a joint program must be coordinated with the goals stated above, and since they rely on programs of study, they are a matter of advising. For instance, a student who seeks a career in a law business administration, then the sequence of courses from one attempting to study the legal basis of librarianship or the management of the library as a complex organization. Yet another student may choose to seek the benefits a joint program could offer in records management and management information systems.
Computer Facilities
A multipurpose computing laboratory provides student access to microcomputers. Equipment is available for CD-ROM services, online searching, use of bibliographic utilities, and e-mail software.

In various courses, students learn to write programs, use and create database management systems, conduct database searches, work with word processing and spreadsheet systems, and perform statistical analysis.

Cataloging Lab
The school maintains a reference collection of cataloging tools used in description and organization courses. The collection is also available to students who need the materials for research or for other course work.

Media Lab
A media lab contains equipment and space for slide-projectors, videotape processing, microfilm scanning, filmstrips, assembled slides, film strip previewing, simple film editing, and key mounting.

Statewide Reference Service
The school serves an asetzt of a state network of libraries. In cooperation with the State Library of Iowa, students provide interlibrary loan service libraries throughout the state, using learned skills to perform bibliographic verification and to answer reference questions. The service helps students retrieve and integrate classroom instruction and provides reference experience.

University Libraries
All of the resources of the University Libraries are available to students and faculty of the school. The system contains more than two million volumes. The library is divided into the Main Library and 11 departmental branches. More than 80,000 microform volumes were acquired in 1986. The current collection is extensive, with more than 200,000 current periodical subscriptions. The Stacks: Stacks of the Main Library house the government publications, maps, and special collections 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 collections. Students have access to the second-floor cluster of computer terminals linked to the Weig Computing Center.

Other Libraries
Students have access to a variety of libraries through field trips, practicum experience, and personal use. The State Historical Society Library in Iowa City; the Iowa City and Cedar Rapids public and school libraries; the旬, Cornell, and Grinnell college libraries; and the Herbert Hoover Presidential Library in West Branch, The Iowa City Public Library, located only a few blocks from the Main Library, was one of the first public libraries in the nation to convert to a totally computerized catalog. Its service philosophy and contemporary management practices provide students with an innovative public library model.

Other Resources
Iowa State University, located across the street from the Main Library, houses the Learning Resources Center of the College of Education and the Weig Computing Center. The resource center contains the Video Lab, Computer Resource Lab, Audiovisual Production Lab, and Curriculum Resources Lab. The Curriculum Resources Lab contains an extensive collection of books and nonbook instructional materials for children in preschool through grade 12. It is especially valuable for students interested in school or public library work.

Weig Computing Center provides instructional and research-computing facilities and services for the University community. All University students, staff, and faculty may use the center's computers for University-related research, thesis preparation, and class work. Each graduate student is provided with a small funded account by the Graduate College.

Faculty Advising
Each graduate student is assigned an advisor; other administrative deadlines are encouraged to discuss career opportunities and problems with the faculty advisor. The formal role of the advisor is to know students individually and to take an interest in their professional development. All courses to be applied to the 3-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 teleconferences call people's attention 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 Organizations (LISSO) is composed of students admitted into the M.A. program. The Executive Committee of LISSO (ECI) serves as a liaison between students and faculty/administration in matters of common concern, and as a planning group for student seminars and other activities. ECl, is 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 by means of bulletin board announcements, seminars on resume writing and interviewing, and personal counseling. The University's Employment Placement Office issues a weekly listing of job openings and provides a credential file service.

Iowa graduates find positions in all types of libraries. The placement distribution for the past three years was academic libraries 39 percent, public libraries 35 percent, school libraries 14 percent, and special libraries 12 percent. Iowa graduates currently are working in libraries in 46 states and 9 foreign countries. Strong personal and academic qualifications, job flexibility, and geographic mobility are important factors in obtaining a position.

Admission
Academic requirements for admission to the M.A. program include:

A baccalaureate degree from an accredited college or university, with a minimum grade-point average of 2.0 on a 4.00 scale, and at least 15 semester

A combined verbal/quantitative score of 1000 or a combined verbal/analytical score of 50 on the Graduate Record Examination (GRE) General Test.

Personality and skill potential are assessed by means of letters of recommendation and an on-campus interview with the school director and other members of the faculty. Alternate interviews are arranged when necessary.

Foreign students whose native or official language is not English are required to show evidence of proficiency in the Test of English as a Foreign Language (TOEFL). Applicants are required to write to the School of Library and Information Science for a preliminary information form. If the information provided on the TOEFL indicates that the applicant meets the basic admission requirements, the school will schedule a personal interview.

Prospective students are urged to begin application procedures early enough to comply with the requirements by the deadline given below. Applicants must allow time for the Graduate Record Examination (GRE) General Test has not been taken.

Completed applications should be received by the school by March 1 for fall semester
Linguistics is not limited to scientific research for its own sake. People with linguistic training teach English as a second language and help countless immigrants learn basic conversation skills. Linguistics also exists as the study of written language, and all languages have their own syntax and semantic structures. Linguistics also provides a strong foundation for the study of the world’s languages, including their phonology, sentence structure, and meaning (semantics). Students who are interested in learning more about linguistics should consult the department's graduate program.

Undergraduate Program

High scores on verbal, analytic, and quantitative aptitude tests are indicators of success in linguistics. Although few aspects of the field deal with numbers, students must be able to reason logically and explicitly and deal with formulas and abstract syntax. Depending on individual goals, prospective linguistics students should consider taking courses in philosophy, psychology, and mathematics, as well as foreign languages.

Bachelor of Arts

The Bachelor of Arts degree in linguistics prepares students to do basic language analysis, to understand syntax-grammar (sentence patterns and their relation to meaning), and to understand phonology (sound patterns). Elective courses are available in historical and comparative linguistics, and students may take courses to tailor the program to their own interests.

Minor

The undergraduate minor in linguistics requires 15 semester hours of courses, and the minimum curriculum includes 12 of which must be in courses numbered 100 or above. A minimum grade point average of 2.0 is required, and none of the courses may be taken pass/no-pass.

Honors Program

Students may graduate with honors in linguistics by completing the major course work plus an honors thesis. The thesis must be prepared in consultation with the student's academic advisor and must be approved by the department's graduate program.

Graduate Programs

The graduate programs emphasize theory and research. Students interested in nonuniversity careers also may take courses in applied linguistics and other fields, either in connection with their doctoral work or as an option in the M.A. program.

Master of Arts

Students take a required set of core courses and comprehensive examinations in phonology and syntax. The required core courses are:

- 101:110 Articulatory and Acoustic Phonetics
- 101:111 Syntactic Analysis
- 101:132 Phonological Analysis and Theory
- 101:120 Historical and Comparative Linguistics
- 101:130 Syntactic Theory
- 101:122 Phonological Theory

One of the following:

- 101:113 Linguistic Field Methods
- 101:240 Linguistic Structures
- 101:217 Language Universals and Linguistic Typology

Students who write a thesis take one linguistics course, exclusive of thesis courses, and receive up to six semester hours of thesis credit.

Students who take a degree without thesis complete a total of 12 semester hours of courses, exclusive of thesis courses, and receive up to 6 semester hours of thesis credit.

All electives must be approved by the student's advisor or chosen from the departmental list. Students who write a thesis should take at least 30 semester hours of course work; those who choose the nonsenior option must take at least 36 semester hours. All students must have a minimum of 30 semester hours of graduate credit to receive the degree, regardless of prior preparation.

Doctor of Philosophy

The highly selective Ph.D. program provides students with a strong foundation in theoretical linguistics and helps them develop the skills they will need to explore the close relationship between linguistics and related disciplines. The core requirement includes two upper-level syntax courses (e.g., 101:121 Syntactic Theory and 101:131 Advanced Syntactic Theory, two upper-division phonology courses (e.g., 101:122 Phonological Theory); and at least two seminars, for a total of 18 semester hours. An approved 18-semester-hour specialty area is also required. Students must achieve proficiency in at least two foreign languages, as specified by departmental regulations.

Comprehensive examinations cover phonological theory, syntactic theory, theory of language change (historical linguistics and sociolinguistics), and the specialty area. An oral defense of the dissertation and three years of residence also are required. In addition, all candidates are required to gain supervised experience in teaching and research.

Admission

To be considered for admission to the graduate program in linguistics, prospective students must complete an application, submit GRE General Test scores, and three letters of recommendation sent to the Department of Linguistics. Students whose first language is not English also must submit TOEFL scores. Applications for admission should be submitted as early as possible for the following academic year.

Financial Aid

Fellowships, teaching assistantships, and research assistantships are available to qualified graduate students. Applications are accepted any time, but earlier submission is encouraged. Applications for financial aid are not limited to students whose admission is complete.

English as a Second Language

The English as a Second Language program is offered in three distinct, but related, programs: the ESL credit support courses, the intensive English Program, and the Tests of English as a Foreign Language Preparation in English Program (TEAP). 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 a degree successfully. These courses provide intensive instruction for students who must raise their English proficiency to gain admission to a university or college. The TEAP program prepares students to take the TOEFL exam.

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 590 to 599. ESL courses are offered to increase proficiency in six 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 (IEP)**

The IEP primarily serves students who have not yet been admitted to the University and whose TOEFL scores are below 530. The program offers intensive English instruction and a cultural, social, and academic orientation to the United States. Instruction emphasizes proclivity in spoken and written English, which is crucial to college and university work. Grammar and the basic language skills of writing, reading, listening comprehension, pronunciation, and speaking are taught each day at all levels—beginning, intermediate, and advanced. Each student receives twenty hours of classroom instruction each week, plus individual work in the language laboratory. Field trips and cultural and social experiences are an integral part of the program. Students enrolled in the IEP have full access to all University facilities. The program's intent is to prepare students for enrollment in credit programs. Students admitted to the IEP receive a certificate of eligibility (Form I-20), which permits them to pursue a student visa at the nearest U.S. consulate. Application materials are available from the ESL Program Office.

**Teaching Assistant Preparation in English (TAPE)**

The TAPE program is designed for graduate students whose native language is not English, who need additional work on English pronunciation and classroom presentation techniques, and who will be teaching assistants while at the University of Iowa. Only students who need the program and who have the sufficient competence in English to profit from it are eligible. TAPE courses are open to graduate students who have had the TA certification evaluation and to students if space is available. Instruction is by full-time professional ESL instructors.

**Facilities**

The Department of Linguistics has limited acoustic equipment consisting of a sound spectograph, a studio-type tape recorder, and an acoustic chamber. There is also a remote terminal and a personal computer available to students. The departments of reading room allows a close relationship between faculty and students, a considerable influence of students on departmental affairs, and a high degree of individual instruction. A large part of students' education in linguistics is conducted informally through daily conversations with each other and with faculty members.

**Courses**

**Primarily for Undergraduates**

100000 Cooperative Educational Internship 3 s.h.

1001 Language and Society 4 s.h. Correlates between social and linguistic behavior: methods for discovering and recording societal signified language behavior, interrelated, and political implications of language. For sociology, anthropology, and social work.

10013 Language and Technical English 3 s.h. Introductory sociology/linguistic seminar, with emphasis on human aspects of language. Reading through linguistic studies of linguistics, technical language, and technical English. Focus on pronunciation and production characteristics, organization: GER, preparation or course training.

10098 Special Project 1-12 s.h. Independent research in a linguistic topic, directed by a staff member.

**For Undergraduates and Graduates**

100100 Introduction to Linguistics 3 s.h. Year-long course in general linguistics. Students admitted to the IEP receive a certificate of eligibility (Form I-20), which permits them to pursue a student visa at the nearest U.S. consulate. Application materials are available from the ESL Program Office.

100160 Language, Society, and Education 3 s.h. Society, language, and education: language development at prescriptive, linguistic technique of language as social, cultural, and linguistic metadiscourse. Social, cultural, and linguistic metadiscourse. Social, cultural, and linguistic metadiscourse. Social, cultural, and linguistic metadiscourse.

10060 Teaching English as a Second Language 3 s.h. Advanced methods of teaching English as a second or foreign language. Students admitted to the IEP receive a certificate of eligibility (Form I-20), which permits them to pursue a student visa at the nearest U.S. consulate. Application materials are available from the ESL Program Office.

10061 Introduction to Teaching English as a Second Language 3 s.h. Functional composition, functional and written English, as a foreign language under supervision. Consider the implications of English language instruction. Consider the implications of English language instruction.


100650 Linguistic Field Methods 3 s.h. The methods of collecting and analyzing data in the field. Methods of collecting and analyzing data in the field. Methods of collecting and analyzing data in the field.

100660 Sociolinguistics 3 s.h. Sociolinguistics. Sociolinguistics. Sociolinguistics.

100661 Computational Linguistics 3 s.h. Computational Linguistics 3 s.h. Computational Linguistics 3 s.h.

100662 Language Processing 3 s.h. Language Processing 3 s.h. Language Processing 3 s.h.

100663 Topics in Computational Linguistics 3 s.h. Topics in Computational Linguistics 3 s.h. Topics in Computational Linguistics 3 s.h.

**In History of the English Language** 3 s.h. Development of English and English language, historical context, phonological and morphological changes in English. For ESL instruction. 3 s.h.

100670 Elementary Old English 3 s.h. Elementary Old English. Elementary Old English. Elementary Old English.


100672 Historical Linguistics 3 s.h. Historical Phonology 3 s.h. Historical Phonology 3 s.h. Historical Phonology 3 s.h.


100674 Methods of Teaching English as a Second Language 3 s.h. Methods of teaching English as a second or foreign language. Methods of teaching English as a second or foreign language. Methods of teaching English as a second or foreign language. Methods of teaching English as a second or foreign language.
102:100 Special Projects
Selected theoretical and applied topics in linguistics
3 s.h.

102:201 History of Linguistic Theory
Theory in history of linguistic theory.
3 s.h.

102:204 (Linguistic) Structures
Analysis of prelinguistic and physical structures of a selected language or language family, language history. May be selected with 120:224:225 language; Consent of Instructor Required.
3 s.h.

102:217 Advanced Structural Theory
Reading in works of modern linguistics. Consent of Instructor Required. 102:100 or equivalent.
3 s.h.

102:221 Psychology of Language
Psychology of language. Credit for both 102:221 and 130:221 not permitted. 102:220 or equivalent.
3 s.h.

102:231 History of the Semitic Language
History of the Semitic language. Credit for both 102:231 and 120:231 not permitted.
3 s.h.

102:249 History of the Indo-European Languages
History of the Indo-European languages. Consent of Instructor Required. 102:220 or equivalent.
3 s.h.

102:251 Oratory
Oratory. Consent of Instructor Required. 102:220 or equivalent.
3 s.h.

102:252 Modern High German
Modern High German. Consent of Instructor Required. 102:220 or equivalent.
3 s.h.

102:258 Historical German-Romance Language I
Historical German-Romance language I. Consent of Instructor Required. 102:220 or equivalent.
3 s.h.

102:261 Historical German Romance Language II
Historical German Romance Language II. Consent of Instructor Required. 102:220 or equivalent.
3 s.h.

102:272 Learning, Memory, and Cognition
3 s.h.

102:275 Syntax and Semantics of Language
Syntax and Semantics of Language. Consent of Instructor Required. 102:220 or equivalent.
3 s.h.

102:290 Special Problems
Selected theoretical and applied topics in linguistics
3 s.h.

102:291 Seminar: Psycholinguistics
Seminar: Psycholinguistics
3 s.h.

102:301 Advanced Problems in Linguistics
Selected theoretical and applied topics in linguistics
3 s.h.

102:320 Seminar: Psycholinguistics
Seminar: Psycholinguistics. Consent of Instructor Required. 102:291 or equivalent.
3 s.h.

102:354 Special Topics
Selected theoretical and applied topics in linguistics
3 s.h.

102:360 Master's Thesis
3 s.h.

102:420 PH.D. Thesis
3 s.h.

Special English Courses
For students whose first foreign language is not English.

103:109 Iowa Innovative English Conversation
4 s.h.

103:110 Iowa Innovative English Communication Skills
4 s.h.

103:150 Iowa Innovative English Reading
4 s.h.

103:153 Iowa Innovative English Writing
4 s.h.

103:167 Iowa Innovative English Writing
4 s.h.

103:169 English as a Second Language
3 s.h.

103:190 English as a Second Language
3 s.h.

Chaff: William H. Kunit


The interdisciplinary Program in Literature, Science, and the Arts (LSA) is designed to provide elective courses for all students. The interdisciplinary Program offers students a liberal education broader than that permitted by the requirements for a major in a single subject area. It emphasizes skills in writing, analytical thinking, and discussion while requiring coordination of courses across the disciplines of the liberal arts.

Students applying to the LSA major may find that it prepares them for graduate study in the humanities, law, or social sciences.

The interdisciplinary Program in Literature, Science, and the Arts (LSA) is designed to provide elective courses for all students. The interdisciplinary Program offers students a liberal education broader than that permitted by the requirements for a major in a single subject area. It emphasizes skills in writing, analytical thinking, and discussion while requiring coordination of courses across the disciplines of the liberal arts.

Students applying to the LSA major may find that it prepares them for graduate study in the humanities, law, or social sciences.

Courses are conducted by round-table discussions in a small group of students with two or more faculty representing different departments and disciplinary perspectives. The topics of these courses engage the students in a variety of critical and particular disciplinary issues, while focusing on important problems and values in judgment and in their lives. Meetings are chosen from outstanding works of the past and present.

Specific requirements—beyond the general education course—may be submitted for the B.A. in Literature, Science, and the Arts. The requirements are as follows.

1. Literature
2. Science
3. Arts

12 s.h.

12 s.h.

12 s.h.

12 s.h.

12 s.h.

Natural, social sciences
Philosophy, religious history

12 s.h.
DIVISION OF MATHEMATICAL SCIENCES

Undergraduate degrees offered: B.A., B.S. in Mathematical Sciences

Chair: Herbert W. Netteshein

The Division of Mathematical Sciences is comprised of the Departments of Computer Science, Mathematics, and Statistics and Actuarial Science. For descriptions of these programs, see “Computer Science,” “Mathematics,” and “Statistics and Actuarial Science” in this section of the Catalog.

The B.A. and B.S. in Mathematical Sciences are being phased out, since each department listed above offers its own undergraduate degree. Beginning Fall 1990, the mathematical sciences degrees are closed to new majors. Those already in the programs must complete the degree requirements by August 1995. For a description of the program requirements, see the 1988-89 General Catalog.
Assistantship, Application for Admission
Research and teaching assistantships are available to qualified applicants. Support for students as research assistants is available during the summer; applications for fall semester admission and for financial support should be received by March 1. For application forms and more information about the academic program, write to the Chair of the Program in Applied Mathematical Sciences, The University of Iowa, Iowa City, Iowa 52242.

Courses
15A/15B Seminar in Applied Mathematical Sciences
3 s.h.
15A/15B Reading and Research
3 s.h.

COMPUTER SCIENCE
Chair: Arthur C. Back
Professors: Donald A. Alvin, Donald L. Epkey, Arthur C. Back, Gregorio (Psychology) Associate professors: Robert J. Barrio, Steven C. Breslau, Babak Zadeh, Douglas W. Jones, Terence Hoa
Assistant professors: Marc Armstrong, (Geography), Bohumisl Ctak, Joseph K. Klassow, Chien-Yung (Chang), Min Su Pj, Kenneth Snavely, Harriet Zhang
Lecturers: Walter F. Solvick
Visiting instructors: Robert Christiansen
Graduate degrees offered: B.A., B.S. in Computer Science; Graduate degrees offered: M.S., Ph.D. in Computer Science

Undergraduate Programs
Undergraduate students majoring in computer science must develop competence in mathematics, programming languages, and computer systems. They also must explore at least one area of potential computing applications through a required elective program. Students have great flexibility in their choice of area, but specific courses in that area must be approved by a computer science advisor. The Computer Science Undergraduate Honors program is available for purchase at the Iowa Memorial Union Bookstore, suggests possible off-campus areas and discusses the Cooperative Education Program and student groups such as the University's chapter of the Association for Computing Machinery.

Pre-Computer Science
Existing students who wish to major in computer science are distinguished pre-computer science majors until they have met the entry requirements of the computer science major. Students continue on pre-computer science status until they complete the first four required courses of the major.

22C:16 Introduction to Computer Science 4 s.h.
22C:17 Programming Techniques and Data Structures 3 s.h.
22C:18 Computer Organization and Assembly Language Programming 4 s.h.
22M:15 Calculus I 4 s.h.
22M:15S Engineering Calculus I 4 s.h.
22M:25 Calculus II 4 s.h.
22M:25S Accelerated Calculus I 4 s.h.
22M:26 Calculus B 4 s.h.
22M:35 Engineering Calculus II 4 s.h.
22M:45 Accelerated Calculus II 4 s.h.
22M:27 Introduction to Linear Algebra 4 s.h.

22C:16 Introduction to Computer Science 4 s.h.
22C:17 Programming Techniques and Data Structures 3 s.h.
22C:18 Computer Organization and Assembly Language Programming 4 s.h.
22C:19 Discrete Structures I 4 s.h.
22C:21 Algorithms and Data Structures 3 s.h.
22C:23 Operating Systems and Computers 3 s.h.
22C:24 Introduction to Systems Software 3 s.h.

Total 38 s.h.
In addition, an approved elective program of at least 12 semester hours is required, as described below.

Bachelor of Science
The General Education Requirements for this degree are stated in the "College of Liberal Arts" section of the Catalog. Courses that satisfy General Education Requirements, if chosen carefully, may also satisfy the departmental natural science requirement as described below.

Students must complete all the previously stated computer science requirements for the B.A. degree, including the approved elective program of at least 12 semester hours. In addition, they must meet the following requirements:

Completion of two advanced courses
Completion of a two-semester sequence in a natural science acceptable toward a major in that science; these courses ordinarily are chosen to also satisfy the College of Liberal Arts General Education Requirement in natural sciences. CLEAPST credit cannot be used to satisfy all or part of this requirement; approved natural science sequences are listed below.

Advanced Courses
22C:51 Computer Graphics 3 s.h.
22C:53 Elementary Numerical Analysis 3 s.h.
22C:55 Computer Organization II 3 s.h.
22C:56 Topics in Computer Science 3 s.h.
22C:59 Internship in Computer Science 3 s.h.

Bachelor of Arts
The General Education Requirement for this degree is stated in the "College of Liberal Arts" section of the Catalog.

For the B.A. degree, the following computer science core courses are required:

22M:25 Calculus I 4 s.h.
22M:25S Engineering Calculus I 4 s.h.
22M:26 Calculus II 4 s.h.
22M:35 Accelerated Calculus I 4 s.h.
22M:36 Calculus B 4 s.h.
22M:36S Accelerated Calculus II 4 s.h.
22M:27 Introduction to Linear Algebra 4 s.h.

22C:15C Software Engineering I 3 s.h.
22C:15S Operating Systems and Concurrent Programming 3 s.h.
22C:16C Software Engineering II 3 s.h.
22C:16S Software Engineering III 3 s.h.
22C:17C Operating Systems and Organization of Computers 3 s.h.
22C:17S Programming Language Foundations 3 s.h.
22C:15S Data Abstractions, Types, and Structures 3 s.h.
22C:17C Introduction to Computer Construction 3 s.h.
22C:320 Parallel Programming 3 s.h.
22C:335 Introduction to Computer Theory 3 s.h.
22C:342 Database Management 3 s.h.
22C:345 Artificial Intelligence 3 s.h.
22C:416 Computer Vision and Robotics 3 s.h.
22C:453 Design and Analysis of Algorithms 3 s.h.
22C:457 Data Structures and Graphs 3 s.h.
22C:478 Computer Communications 3 s.h.
22C:485 Software Engineering 3 s.h.
22C:496 Topics in Computer Science (if repeated, may be counted only once as an advanced course) 3 s.h.
22C:196 Individual Programming Projects (if repeated, may be counted only once as in advanced course) 3 s.h.
22M:170 Numerical Analysis 3 s.h.
22M:176 Nonlinear Equations and Approximation Theory 3 s.h.
22M:177 Numerical Analysis 3 s.h.
22M:178 Linear Algebra 3 s.h.
22M:179 Optimization Techniques 3 s.h.
22M:180 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 Sequences
For the B.S. degree, students must take two or more courses in a sequence required of majors in the areas of natural science. The first course must be a prerequisite to the second. This sequence should enhance the student’s perspective by providing a deeper understanding of the scientific method. It is typical, but not required, that these courses be taken in the same science department. This cognate sequence must total at least eight semester hours and may also be chosen to be a more natural science. General Education Requirement. Some possible courses are listed below, and the computer science advisor may approve others.

Astronomy
20:61 General Astronomy (GER, lab), 4 s.h.
20:62 General Astronomy (GER, lab), 4 s.h.

Biology
413 Principles of Chemistry I (GER, GER, lab), 4 s.h.
575 Principles of Animal Biology (GER, lab), 4 s.h.

Botany
21:50 Introduction to Botany (GER, lab), 4 s.h.
21:50 Land Plants: An Evolutionary Survey (not a natural science GER), 4 s.h.

Chemistry
413 Principles of Chemistry I (GER, lab), 4 s.h.
Graduate Course Requirements

Graduate Course Requirements

Elective Courses

Computer Science

Graduate Course Requirements

Computer Science

Graduate Course Requirements

Computer Science

Graduate Course Requirements

Computer Science

Graduate Course Requirements

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Graduate Course Requirements

Computer Science

Graduate Course Requirements

Computer Science
Program B Requirements

Program B requirements for the B.S. degree are the same as those for the B.A. program B, except that two additional courses in mathematics numbered 22M:167 or higher must be completed. The student must choose courses from mathematics with a grade-point average of 3.00 or higher in 22M:167 and at least 15 semester hours of upper-division courses numbered 22M:167 or higher. The B.S. degree in mathematics requires a total of at least 180 semester hours, including 114 semester hours outside the College of Liberal Arts.

General Education Requirements

Students must satisfy the College of Liberal Arts General Education Requirements and are encouraged to select GER courses that use mathematics.

Other Requirements

Additional degree requirements concerning transfer credit, 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 required 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 meet the requirements of program A or program B. Both degrees must be taken in the same department, or R.S. The College of Liberal Arts requires that students seeking a mathematics double major must earn a minimum of 56 semester hours in courses taken toward the division.

Minor

The minor in mathematics requires:
A minimum of 15 semester hours credit earned in the Department of Mathematics courses; at least 3 of these 15 semester hours must be taken at The University of Iowa.

Computer Science

Program 1

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 22C:152-153 or 22C:152-154) and a one-semester course in the same area (e.g., 22C:152-153 or 22C:152-154 or 22C:154-155). The student must have 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 34 semester hours in the following:

Mathematics

Any course numbered 22M:110 or higher.

Computer Science

Any course numbered 22C:122 Advanced Computer Organization and Architecture.

Any course numbered 22C:123 Programming Language Foundations.

Any course numbered 22C:124 Introduction to Computation Theory.

Any course numbered 22C:145 Artificial Intelligence I.

Any course numbered 22C:146 Advanced Artificial Intelligence.

Statistics

Any course numbered 22C:153 Introduction to Probability.

Any course numbered 22C:154 Introduction to Mathematical Statistics.

Any course numbered 22C:187 Introduction to Stochastic Processes.

Any course having any of the above three courses as prerequisites.

Any course numbered 22C:200 or higher programs in mathematics, a student must be able to

Program B

Program B requirements for the B.S. degree are the same as those for the B.A. program B, except that two additional courses in mathematics numbered 22M:167 or higher are required. The student must choose courses from mathematics with a grade-point average of at least 3.00 and complete either an honors project or satisfactory advanced course work. A student planning to do an honors project is responsible for finding a faculty member willing to supervise the project. Students typically register for 22M:167 for at least 3 semester hours. For more information, contact the Mathematics Department honors adviser.
Program II
This program is designed for secondary school teachers. The requirements are the same as those in program I or III, except that two mathematics education courses are required. All mathematics courses numbered 221/170 or above may be used to satisfy the 24-semester hour requirement. Students are encouraged to consult with mathematics education faculty when planning their course of study.

Program III
This program focuses on applied mathematics. It requires two calculus courses and two comprehensive examinations, one focused on mathematical structures (22M:144, 22M:143) and one in numerical analysis/optimization (22M:170, 22M:171, 22M:174). The required courses are:
22M:144 Introduction to Partial Differential Equations I
22M:142 Intermediate Differential Equations
22M:180 Continuum Mathematical Models or
22M:151 Discrete Mathematical Models
22M:174 Optimization Techniques
22M:170 Numerical Analysis: Nonlinear Equations and Approximation Theory
22M:171 Numerical Analysis: Differential Equations and Linear Algebra

Two additional courses from the following:
22M:116 Complex Variables
22M:130 Probability
22M:160 Continuum Mathematical Models
22M:165 Introduction to Mathematical Statistics
22M:152 Theory of Graphs
22M:161 Operating Systems and Concurrent Programming
22M:135 Design and Analysis of Algorithms I
22M:145 Introduction to Probability
22M:142 Introduction to Mathematical Statistics
22M:157 Introduction to Stochastic Processes

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 degree in mathematics if they have maintained a minimum grade-point average of 3.0 in all mathematics courses taken for the master’s degree 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 degree 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 a Ph.D. degree (programs I-III) is based on a student’s academic record, undergraduate course work and grades, letters of recommendation, GRE General Test scores (also TOEFL, access for foreign students), the following guidelines are current although exceptions may be made. Numerical standards are reset every year or two.

- Students must have completed work in an undergraduate mathematics program equivalent to the bachelor’s degree offered by the mathematics department. Students whose preparation does not meet this requirement may be admitted conditionally and are asked to take specific courses that cover the deficiency.

- Students must have an undergraduate grade-point average of at least 3.0. Relevance and difficulty of courses are considered when evaluating grades; grades of C or lower in mathematics courses need to be balanced by higher grades in other courses.

- Students must submit three letters of recommendation to support their applications.

- Students must score at least 550 on the quantitative section of the GRE General Test. Applicants are encouraged to submit scores for the mathematics area examination as well—particularly students who need financial support whose credentials may show weak areas.

- Foreign students are required to demonstrate their competence in English. Normally this is done by scoring at least 550 on the TOEFL.

Doctor of Philosophy
The Ph.D. program places strong emphasis on preparation for research and teaching. The department maintains a division between “pure” and “applied” mathematics. It cooperates in interdisciplinary doctoral programs with the College of Education and also with the Program in Applied Mathematical Sciences.

A Ph.D. student in mathematics must satisfy the following requirements for course work (credits and breadth), examinations, foreign language, and the Ph.D. thesis.

- 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 specific requirements concerning the specific area or areas in which graduate study has taken place, students must be designated as a Ph.D. comprehensive examination candidate for one of two areas: analysis and topology, and logic, and topology and other one-fourth of the preceding or partial differential equations. For each comprehensive area, there is a two-semester, 300-level course sequence designated as preparatory, 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 consists of six faculty members. Candidates also take an oral final examination on their dissertation material.

Candidates are required to demonstrate 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 a foreign language coursework otherwise offered by the appropriate language department, or passing a special examination approved by the mathematics department graduate committee. The demonstration of language competency must take place after the student has exhausted satisfactory coursework.

The most distinctive aspect of a Ph.D. is the thesis. The department expects it to be an original mathematical work complete in content and writing quality to that found in professional journals. The thesis is written under the supervision of a committee headed by a member of the department's faculty, presumably the student's advisor.

Admission
Admission to the Ph.D. program is based on a combination of undergraduate or graduate course work and grades, letters of recommendation, and Graduate Record Examination scores (also TOEFL, scores for foreign students). In addition for admission to the master's program, foreign students may be required to take the GRE General Test. The department generally requires stronger grades and scores for admission.

Undergraduate or graduate grade-point average of at least 3.0. GRE General Test quantitative score of at least 750 TOEFL, score of at least 575. Often new graduate students are admitted as master's
Statistics and Actuarial Science  ●  Liberal Arts  175

225.175-176 Casualty Actuarial Mathematics I-II
or
225.181-182 Life Actuarial Mathematics I-II

*In exceptional cases, the advisor may grant permission to waive 225.120. Otherwise, it should be completed before 225.130.

At least three from the following:

6A.1 Introduction to Financial Accounting
6F.100 Introductory Financial Management
6F.102 General Insurance
6M.100 Introduction to Marketing
6U.07 Introduction to Law
6U.010 Administrative Management

Suggested additional courses
225.179 Advanced Casualty Insurance Topics
225.189 Advanced Life Insurance Topics
6F.121 Property and Liability Insurance
6F.122 Life and Health Insurance
6G.277 Management Science Topics (Senior Research section)

The required and elective courses should be taken in the following order: In order to complete the program in four years, 225.130 Introduction to Probability must be completed prior to the fall semester of the senior year.

Freshman Year
Fall Semester
22M.25 Calculus I
or
22M.35 Calculus I-Calculus II
22M.45 Accelerated Calculus I
10.1 Rhetoric

Spring Semester
22M.26 Calculus II
22M.36 Engineering Calculus II
22M.46 Accelerated Calculus II
10.2 Rhetoric

Sophomore Year
Fall Semester
22M.55 Introduction to Linear Algebra
6E.1 Principles of Microeconomics
20C.7 Introduction to Computing with PASCAL
20C.16 Introduction to Programming with PASCAL

Spring Semester
22M.56 Principles of Macroeconomics
6G.2 Probability and Statistics
225.120 Probability and Statistics
225.125 Actuarial Mathematics I
225.151 Introduction to Probability
225.177 Numerical Analysis for Actuaries Business requirement

Spring Semester
225.126 Actuarial Mathematics II
225.154 Introduction to Mathematical Statistics
225.159 Methods of Statistical Inference Business requirement

Senior Year
Fall Semester
225.175 Casualty Actuarial Mathematics I and/or
225.181 Life Actuarial Mathematics I Business requirement

Spring Semester
225.176 Casualty Actuarial Mathematics II and/or
225.182 Life Actuarial Mathematics II

Applied Statistics
This program is designed to prepare students for careers in applied statistics or for graduate study in applied statistics or other disciplines that incorporate statistical tools. The required courses in the program are:
10C.7 Introduction to Computing with PASCAL
or
22C.15 Introduction to Programming with PASCAL
22M.25-26 Calculus I-II
or
22M.35-36 Engineering Calculus I-II
or
22M.45-46 Accelerated Calculus I-II
22M.27 Introduction to Linear Algebra
22M.36 Calculus III
22M.33 Regression Analysis
22M.153 Introduction to Probability
22M.154 Introduction to Mathematical Statistics
22M.158 Analysis and Design of Experiments I

At least two of the following:
63.153 Introduction to the Design of Sample Surveys
22M.155 Applied Time Series Analysis
22M.161 Application of Multivariate Statistical Techniques
22M.163 Nonparametric Statistical Methods
22M.165 Introduction to Stochastic Processes
22M.166 Analysis and Design of Experiments II

Students in this program are expected to take at least two introductory courses in an area in which statistics is applied, such as geography, biology, or science. Students are also expected to learn to use at least one statistical software computer package.

Mathematical Statistics
This program is designed to prepare students for graduate study in statistics. The required courses in the program are:
22M.25-26 Calculus I-II
or
22M.35-36 Engineering Calculus I-II
or
22M.45-46 Accelerated Calculus I-II
22M.27 Introduction to Linear Algebra
22M.36 Calculus III
22M.05 Fundamental Properties of Spaces and Functions
22M.153 Introduction to Analysis I
22M.155 Introduction to Probability
22M.151 Introduction to Mathematical Statistics

At least three of the following:
22M.152 Regression Analysis
22M.156 Applied Time Series Analysis
22M.158 Analysis and Design of Experiments I
22M.164 Introduction to Discrete Probability Models
22M.144 Introduction to Statistical Process Control

Students are encouraged to learn at least one computer programming language. They are also encouraged to take courses in areas to which statistics is an important tool, such as economics or psychology, and additional courses in mathematics.

Honors
Qualified undergraduate students may earn their degrees 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 at least 290 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. Students can earn a minor in actuarial science by completing 15 semester hours in Department of Statistics and Actuarial Science courses, including 225.120, 225.125, 225.130, and 225.153. For either minor, the grade-point average in departmental courses must be at least 3.0. An additional 15 semester hours is required for two minors (one in statistics, one in actuarial science).
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 required courses, the committee's recommendation usually is based on two written examinations on topics covered in the required courses. For thesis programs, the committee's final recommendation usually is based on an oral defense of the thesis, although it may be based on a single written examination over the topics covered in the candidate's program of study.

With the exception of certain two-course sequences approved by the department, graduate students may not elect on their plan of study any course that they also took as an undergraduate student at The University of Iowa. 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 225.155-156, 225.157-158, and 225.141-142.

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. degree with thesis may earn up to 6 semester hours of credit for thesis preparation. Specific course requirements for the M.S. programs are given below.

Actuarial Science

Most graduate courses are required. The following courses are required:

- 225.155 Introduction to Probability
- 225.154 Introduction to Mathematical Statistics
- 225.150 Math-Actuarial Science
- 225.156 Advanced Probability
- 225.177 Numerical Analysis for Actuaries

Four courses from:

- 225.175-176 Casualty Actuarial Mathematics I-II
- 225.171-172 Life Actuarial Mathematics I-II
- 225.170 Advanced Casualty Insurance Modelling
- 225.169 Advanced Life Insurance Topics

At least one of the sequences marked (*) must be included. The eleventh course may be any course in statistics, management science, or finance approved by the adviser.

Theoretical Statistics and Probability

271M.115 Introduction to Analysis I
271M.113 Introduction to Probability
225.154 Introduction to Mathematical Statistics
225.156 Introduction to Stochastic Processes
225.201 Theory of Statistics I

At least two of these:

- 225.164 Introduction to Probability Models
- 225.172 Topics in Statistics
- 225.202 Theory of Statistics II

225.230 Introduction to the Theory of Nonparametric Statistics
225.233-234 Advanced Inference I-II
225.252 Linear Models
225.256 Multivariate Analysis
225.354-355 Theory of Probability I-II

Applied Statistics

Without Thesis

225.152 Regression Analysis
225.153 Introduction to Probability
225.154 Introduction to Mathematical Statistics
225.156 Analysis and Design of Experiments I
225.173 Data Analysis

At least two of the following:

- 225.156 Applied Time Series Analysis
- 225.161 Application of Multivariate Statistical Techniques
- 225.168 Analysis and Design of Experiments II

The remainder of the program consists of at least two additional courses numbered 225.150 or above, and other courses approved by the student's adviser. 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 advisors 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 biosciatics (preventive medicine and environmental health).

With Thesis

- 225.153 Introduction to Probability
225.154 Introduction to Mathematical Statistics
225.156 Introduction to Stochastic Processes
225.152 Regression Analysis
225.156 Applied Time Series Analysis
225.158 Analysis and Design of Experiments I
225.161 Application of Multivariate Statistical-Actuarial Techniques
225.199 Analysis and Design of Experiments II

The remainder of the program consists of at least two additional courses numbered 225.153 or above, and other courses approved by the adviser. When the adviser'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. The thesis thesis is a statistical project of the results of a meaningful research project in actuarial field, or a study of the characteristics of a new statistical method. It generally requires 3 semester hours of 225.191 Individual Study for two semesters.

Quality Management and Productivity

This innovative M.S. program is sponsored by the Department of Statistics and Actuarial Science in the College of Liberal Arts, Industrial and Management Engineering in the College of Engineering, and Management Sciences in the College of Business Administration. The M.S. program requires 36 semester hours, including at least 27 semester hours in the core, which consists of the following nine courses or reasonable substitutes.

225.130 Probability and Statistics or 225.132-134 Introduction to Probability-Introduction to Mathematical Statistics
225.256 Operations Research M.B.A.
362.312 Quality Control and Engineering Statistics
225.154 Regression Analysis
362.310 Probability and Theory of Practice
362.384 Production Management
363.237 Forecasting
225.150 Analytic and Design of Experiments
225.360 Organisational Design, Change, and Transformation
562.232 Engineering Administration II

Students also must take at least 2 semester hours of seminar and/or practicums. 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:

225.152 Regression Analysis
225.156 Analysis and Design of Experiments I
225.173 Introduction to Stochastic Processes
225.175 Time Series Analysis
225.262-263 Theory of Statistics I-II
225.233 Advanced Inference I
225.255 Linear Models
The qualifying examination covers intermediate probability, mathematical statistics, and regression analysis. These topics generally are covered in 225:202, 225:253, 225:353, and 225:138. If students are interested in these topics, they should take the qualifying examination as soon as possible after the fall semester of their second year.

The qualifying examination consists of a written core examination and a problem examination on statistical inference, linear models, and probability. These topics are generally covered in 225:202, 225:253, and 225:138.

A program that does not conform to the prescribed recommendation but is of high quality may be approved by the department.

Special Features

Because statistics often are teamed with other sciences in research projects, it is important that students gain experience in group efforts. The department tries to provide this experience in several courses.

In addition to the above restrictions, for each semester, graduate students who register for 6 or more semester hours, the department must be at least 80% of the total enrollment. This requirement includes both full-time and part-time students.

During the academic year, students may undertake research work or seminars in other departments to achieve certain ancillary goals of the doctoral degree in statistics. These goals are to refine, in an area of specialization, some field of knowledge, to acquire the ability to use electronic digital computing equipment, or to learn the languages skills needed to read foreign scientific literature.

Students are required to include in their program of study a course in economics that involves specialization in either teaching or statistical consulting.

Students who expect to request financial assistance are advised that they should take the qualifying examination no later than the spring semester of their second year.

For Undergraduates and Graduates

225:406 Cooperative Education Internship 3.0 c.u.
225:481 Reappraisals 3.0 c.u.

225:482 Introductory Statistics 3.0 c.u.
225:482 Introductory Statistics 3.0 c.u.

225:483 Probability and Statistics 3.0 c.u.
225:483 Probability and Statistics 3.0 c.u.

Courses

Primary for Undergraduates

Students may not receive credit for a course in Statistics and Actuarial Science numbered 110 or later unless they are in one of the courses 225:202, 225:253, and 225:353.

225:202 Statistics and Probability 3.0 c.u.
225:202 Statistics and Probability 3.0 c.u.

225:253 Mathematical Statistics 3.0 c.u.
225:253 Mathematical Statistics 3.0 c.u.

225:353 Operational Research Methods 3.0 c.u.
225:353 Operational Research Methods 3.0 c.u.

225:353 Quality Control and Engineering 3.0 c.u.
225:353 Quality Control and Engineering 3.0 c.u.

225:353 Bayesian Statistics I 3.0 c.u.
225:353 Bayesian Statistics I 3.0 c.u.

225:482 Introductory Statistics 3.0 c.u.
225:482 Introductory Statistics 3.0 c.u.

225:482 Introductory Statistics 3.0 c.u.
225:482 Introductory Statistics 3.0 c.u.
laboratories, research laboratories, and industrial laboratories (food, drug, chemical, pharmaceutical, and general engineering companies).

Students who choose to pursue beyond the bachelor's degree have career opportunities in federal, state, and corporate agencies, such as the Environmental Protection Agency and the Department of Energy, as well as opportunities in research and development in various industries.

Undergraduate Program

Bachelor of Science

Undergraduate students majoring in microbiology at The University of Iowa must meet the General Education Requirements of the College of Liberal Arts. They must complete a minimum of 21 semester hours in microbiology to obtain a B.S. degree. No more than 2 semester hours of 600-level courses may be applied toward the 21-hour minimum.

Students who want to apply for certification by the National Registry of Microbiologists are required to earn 30 semester hours of credit in biology, 20 of which must be in microbiology. Certification is required for employment or advancement in some areas, especially in diagnostic microbiology.

Students may take microbiology courses more advanced than 615:151 General Microbiology only if they receive a grade of C or above in 615:152. Mathematics and science courses required for the major may be completed prior to the B.S. degree, but courses must be taken for letter grades.

Microbiology Seminar (615:161) is recommended to be taken before the senior year. Students are encouraged to take the course for 6 semester hours credit during other semesters after they have taken 615:151.

Microbiology majors must take the following courses in addition to required microbiology courses.

413 Principles of Chemistry I 3 s.h.
414 Principles of Chemistry II 3 s.h.
415 Organic Chemistry Lab 1 s.h.
411 Organic Chemistry I 3 s.h.
413 Inorganic Chemistry I 3 s.h.
414 Organic Chemistry Laboratory 3 s.h.
99:12 Biochemistry and Molecular Biology I 4 s.h.
99:13 Biochemistry and Molecular Biology II 4 s.h.
215:10 Methods for the Biological Sciences 3 s.h.
215:20 Methods for the Biological Sciences 3 s.h.
215:35 Exercise Physiology 3 s.h.
215:35 Exercise Physiology 3 s.h.
215:45 Exercise Physiology 3 s.h.
215:12 College Physics 4 s.h.
315 Principles of Animal Biology 5 s.h.

Recommended courses include the following:

816:10 Expository Writing 3 s.h.
816:12 Writing for the Sciences 3 s.h.
221:12 Introduction to Computing with FORTRAN 3 s.h.
221:16 Introduction to Programming with Pascal and 221:72 Programming Techniques and Data Structures 3 s.h.

Honors Program

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 microbiology courses. The honors program in microbiology requires 25 semester hours of coursework, including 6 semester hours in 615:171-172 Honors Microbiology. These courses consist of 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

In an undergraduate minor in microbiology, you must complete at least 21 semester hours of credit in microbiology courses with a minimum grade-point average of 3.00. Of these 21 semester hours, at least 12 must be taken at The University of Iowa in courses numbered 400 and above.

Graduate Programs, Faculty Roster, Courses

See "Microbiology" in The College of Medicine section of the Catalog.

MILITARY SCIENCE (ARMY ROTC)

Instructor: Lieutenant Colonel Perry V. Roberts (Chairman)
Assistant professors: Mark A. Cold (Cincinnati), Richard R. Scudder (Maryland), Frank C. Miller (Columbia), Steve M. F. Marson (Columbia), John A. Wahl (Columbia)
Instructor: Michelle J. Johnston (North Carolina).

The Military Science Department is a mid-degree-producing, academic department that administers the Reserve Officers' Training Corps (ROTC) program. The department provides students with education in the role of the military and leadership in personal responsibility while providing those students who desire to serve in the armed forces, or as an active or reserve status, an opportunity to earn a commission as an army officer.

Courses are open to all students. The course credit that may be applied toward graduation varies. In the College of Liberal Arts, up to 20 semester hours may be applied toward graduation.

Undergraduate Program

Basic Course

The ROTC basic course is designed primarily for freshmen and sophomores. It familiarizes the fundamentals of military management and introduces the rules of the military as affected by national and foreign policy. Students incur no obligation to the military for participation in the basic course. The following courses satisfy the basic course requirements.

23:14 The Profession of Arms 1 s.h.
23:15 The Military in a Modern Society 1 s.h.
23:54 Principles of Modern Warfare 2 s.h.

Students who plan to pursue a commission as an officer should take 23:14 Leadership Laboratory with 23:15. All other basic course classes include a laboratory period. The basic course requirements may be completed over a one-year period or extended by attending a six-week paid camp during the summer. Students with prior military training may be exempt from the basic course requirement.

Advanced Course

The ROTC advanced course, though open to upperclassmen, is designed primarily for students who wish to pursue a commission as an officer in the U.S. Army upon graduation. It is open to both undergraduate and graduate students. Most students in the advanced course incur an obligation with the military that can be satisfied in the regular army or the reserve army.

A grant of First Year is provided to students who elect to serve in the armed forces. Additionally, 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 sophomores, and have at least a 3.2 grade-point average. A 8-week paid camp, normally taken the summer before the senior year, is required for all students wishing to become army officers. The following courses provide the requirements for completion of the advanced course.

23:55 Advanced Military Fitness Training 3 s.h.
23:52 Advanced Military Fitness Training 3 s.h.
23:15 Challenge of Leadership 3 s.h.
23:12 Advanced Individual Tactics and Techniques 3 s.h.
23:14 Military Management 3 s.h.
23:13 Service Orientation 3 s.h.
Students also must complete a capstone in the following areas through other University departments. These courses may be the same as those used to satisfy the College of Liberal Arts General Education Requirements.

Written communications
Human behavior
Mathematics
Military history
Computor literacy

Financial Aid
The Military Science Department allows three- and four-year merit scholarships for students who wish to enter the ROTC program. These scholarships provide payment of tuition at the University of Iowa, $300 for books and supplies each year, up to $350 in academic fees per year, and a $100-per-month, tax-free subsistence allowance during the academic year. Additional scholarships are available for nursing students who wish to become army nurses.

Courses
3281 Leadership Laboratory 3 a.h.
Military skills and applications of leadership theory, imparting cadre, abilities to perform as officers.

2511 The Profession of Arms 1 a.h.
Officer’s value and place in the national defense; organization of the military, basic commands, and a field officer’s approach to leadership.

2522 The Military in a Modern Society 1 a.h.
The military and how it affects the modern world; the role of the military in today’s society, especially both as a force of national security and a force for good.

2509 Survival Skills 1 a.h.
Signs military survival skills in the U.S. Army, land navigation, basic survival techniques, first aid, and communication protocols. Off-set spring semesters. Prerequisites: 2511 or 2512 or consent of instructor.

2504 Principles of Modern Warfare 1 a.h.
Principles of military doctrine and leadership current issues affecting military operations, the evolution of the role of the military, and the struggle of leadership, administration, and evaluation of leadership measures and operations.

2514 Advanced Military Fitness Training 1 a.h.
An advanced physical fitness program to develop physical fitness and endurance.

2599 Fundamentals of Military Organization and Operations 2 a.h.
An introduction to the basic organizational structure and operation of the military.

2515 Challenges of Leadership 1 a.h.

2517 Small Unit Tactics 1 a.h.
Detailed background of military planning and preparation of military operations orders and tactics. Instruction is in small groups and combines written work and field exercises, with two one-hour sessions each week.

2316 Military Management 2 a.h.
Leadership and management in large organizations; military principles, logistics, and planning principles of military justice, national security. Off-set spring semesters. Prerequiste: 2511 or consent of instructor.

2319 Staff Duty Operations 2 a.h.
Climaxing course that integrates previous leadership and management principles for roles in staff planning, logistics, personnel administration, training, and professional development. Off-set spring semesters. Prerequisites: 2514 or consent of instructor.

2311 Readings in Contemporary Military Issues 1 a.h.
Independent study for special projects and requirements; research paper based upon research report. May be repeated.

MOLECULAR BIOLOGY
Graduate degree offered: Ph.D. in Molecular Biology
The Molecular Biology Ph.D. Program is an interdisciplinary program involving members of the Departments of Biochemistry, Biology, Microbiology, and Physiology and Biophysics as well as a number of faculty members from clinical departments. See "Molecular Biology" in the Course of Medicine section of the Catalog for a list of participating faculty members, degree requirements, and courses.

MUSEUM TRAINING
Chair and director: George O. Schenck, Asst. deapart. professor; George O. Schenck, Asst. Professor: William W. Whitcomb, Museums.
Collections and use the tangible objects of scientific history, and re`

Courses
26180 Cooperative Education Internship 2 a.h.

26182 Museum Techniques 2 a.h.

26180 Museum Laboratory Methods 2 a.h.

26184 Museum Laboratory Methods 2 a.h.

26186 Museum Discussions 1 a.h.

26188 Museum Discussions 1 a.h.

26189 Introduction to Museology 1 a.h.

26190 Introduction to Curatorial Practices 1 a.h.

26191 Introduction to Conservation of Museum Objects 1 a.h.

26192 Introduction to Conservation of Museum Objects 1 a.h.

26193 Introduction to Conservation of Museum Objects 1 a.h.

26194 Advanced Study in Curatorial Practices 1 a.h.

26195 Advanced Study in Curatorial Practices 1 a.h.

26196 Advanced Study in Curatorial Practices 1 a.h.

26197 Advanced Study in Curatorial Practices 1 a.h.

26198 Advanced Study in Curatorial Practices 1 a.h.

26199 Advanced Study in Curatorial Practices 1 a.h.
Undergraduate Programs

The school offers the Bachelor of Arts and the Bachelor of Music. Candidates for the B.M. degree may choose more than 50 semester hours of coursework in music toward the 124 semester hours required for graduation; candidates for the B.A. may not.

Areas of concentration offered in both programs are performance, composition, theory, music history, musicology, and music therapy. Programs leading to certification, if available, are available in music education and music therapy.

General Requirements

At undergraduate levels require School of Music approval. Entering undergraduate students who plan to major in music are expected to audition either in person or by tape recording in advance of registration. Transfer students also must provide evidence of acceptable levels of performance proficiency and must enroll with a representative from the theory area to organize their level of competency in that area.

Bachelor of Music

Course Work

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: 25-14 Music Theory and Librarianship 14 s.h. 25-71 Group Instruction in Flute, French Horn, or Saxophone 14 s.h. 25-74 History of Music 4 s.h. 25-154 Soccer Recital 1 s.h. (To complete the senior recital, students must have achieved applied and major status or be enrolled in upper-level applied music courses. See “Applied Music” in this section of the Catalog.) At least four semester hours of effectives from those: 25-155 Composition 4 s.h. 25-114 Arranging for Band 2 s.h. 25-145 Counterpoint before 1600 3 s.h. or 25-147 Counterpoint after 1600 3 s.h. 25-148 Analysis of Music Literature 1600-1700 3 s.h. 25-145 Analysis of Music Literature 1700-1825 3 s.h. 25-156 Analysis of Music Literature 1800-1900 3 s.h. 25-157 Analysis of Music Literature 1900-1950 3 s.h. 25-102 Analysis of Music Literature Special Topics 2 s.h. 25-158 Keyboard Harmony 3 s.h. 25-159 Orchestration 2 s.h. 25-151 Gregorian Chant 3 s.h. 25-101 Jazz Improvisation I 1 s.h. or 25-102 Jazz Improvisation II 1 s.h. or 25-104 Jazz Improvisation III 1 s.h. or 25-144 Jazz Improvisation IV 1 s.h. (The combination of courses 25-145 and 25-147 or courses 25-101 and 25-102 or courses 25-144 and 25-144 may not be used exclusively to fulfill this four-semester-hour requirement.)

Applied Music

Four years of applied music are required. Instruction is required in two levels, lower and upper. Students must achieve upper-level status before they can give the aural-recital. Determination of readiness for passing into upper-level applied music is determined in the student's area of instruction. Students are allowed a maximum of 6 semester hours (not including summer) in the lower-level applied instruction. Those wishing to continue beyond the minimum allowable lower-level registration must do so under the upper major category.

Ensemble Requirements

Students must also participate in a major combination of at least two ensembles. During the summer semesters, students must be available for ensemble participation as needed. Ensemble assignments are made at the discretion of the major teacher and ensemble director. String students participate in University Orchestra and Clarinet Orchestra. 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.

Any requests for adjustment of this requirement should be submitted in writing to a review committee consisting of the appropriate choral-instructor, the advisor, the major teacher, and a representative from the directors of the orchestra. The committee meets regularly at the end of each major registration period.

Major ensembles are: 25-162 Orchestra Singers 1 s.h. 25-194 Symphony Band/Concert Band University Band (1-6 s.h.) 25-193 University Chamber Orchestra 3 s.h. 25-185 Kentet/University Choir 25-192 Orchestral Orchestra 4-8 s.h.

Students may take advanced electives in performance (including chamber music and small group ensembles), theory, composition, music education, music history, music literature, research, and conducting.
Performance Major

Performance majors are available in each of the orchestral areas—singing, courses in woodwinds, and percussion—singing in voice and choral music. Performance majors may, at least 17 additional semester hours beyond the School of Music general course requirements, be chosen from a list of electives unique to each performance major. Course offerings 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 admitted, they are assigned a jazz studies advisor in addition to their regular music advisor. Senior recital and recital attendance requirements are the same as for the B.M. degree plus an additional 28 semester hours of jazz courses for performance majors, or an additional 16 semester hours for those in the music education certification program. Students in the jazz studies emphasis program must attend a weekly jazz seminar.

Music Therapy

Admission to the program in music therapy is based on successful completion (grade of C or better) of 25:114 Orientation to Music Therapy and 25:116 Clinical Experience in Music Therapy, both elective courses in music therapy listed below, specific courses are required, including psychology, social psychology, and physical education.

A six-month internship in an approved off-campus clinical facility is required before the completion of the degree. Following successful completion of the internship, students may apply for permission to the National Association for Music Therapy and are qualified to sit for the board certification examination. To increase their job opportunities in the education sector, students are encouraged to complete the music education 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:

25:114 Music Therapy Practicum (three semester-hours, 1 for 1, 2, and 3, respectively)
25:96 Music Techniques in Special Education and Recreation
25:114 Orientation to Music Therapy
25:144 Psychology of Music
25:146 Behavioral Research in Music
25:158 Music Therapy Techniques: Abnormal Children
25:19 Music Therapy Techniques: Adult Clients
25:190 Internship in Music Therapy

Composition Major

Applicants should submit examples of creative work for consideration to the composition faculty. Upon admission to the program, students are assigned a faculty advisor.

Students fulfill the general requirements of the Bachelor of Music degree as stated in the Catalog. Beyond these requirements, additional hours of electives are required, including studies in composition, experiential music studies, music theory, music history, and applied music. An appropriate plan of study is designed by the students in consultation with the advisor. The Bachelor's Thesis (25:95) replaces the recital requirement of applied music majors. It consists of one or more compositions, approved by a committee of three faculty members, and performed on regularly scheduled School of Music recitals.

Theory Major

Applicants should submit proofs (and other evidence of scholarly performance) of evaluation by the theory faculty. Upon admission to the program, students are assigned a faculty advisor.

Students fulfill the general requirements for the Bachelor of Music degree as stated in the Catalog. Beyond these requirements, additional hours of electives are required, including studies in music theory, music history, composition, and applied music. An appropriate plan of study is designed by the students in consultation with the advisor. The Bachelor's Thesis (25:96) replaces the recital requirement of applied music majors. It consists of a paper that deals scholarly fashion with theoretical matters, approved by the theory faculty.

Bachelor of Arts

The B.A., with its 50 semester hours of allowable electives, is offered to students who wish to perform majors listed under the B.M. degree as well as history and composition.

The B.A. is not available in music therapy, music therapy, or jazz emphasis programs. Students may apply for certification if they complete the curriculum listed for the appropriate certification program (e.g., singing, voice, voice, woodwind, and vocal education). See “Teacher Certification (Music Specialist)” below.

Course specific requirements vary for each of the available tracks under the B.A. degree. Although all College of Liberal Arts General Education Requirements must be met for each student, the students should check with their advisors, the area head, or the music office for specific program requirements.

Teacher Certification (Music Specialist)

Areas of concentration in music education are instrumental music, vocal music, 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 “Secondary Education” in the “College of Education” section of the Catalog.

String Majors

Instruction in performance (violin and viola) includes one year of 25:213; cell and bass majors include one year of 25:214 (cello) or 25:215 (bass).

25:110 Class String compositions take viola and bass, viola take viola and bass, cellists take viola and bass; basics take viola and viola.

25:115 Instrumental Techniques (some years offered); 25:116 Instrumental Conducting; 25:25 String Methods and Materials

25:34 Introduction to Teaching Music


25:151 Observation and Laboratory Practica in the Secondary School

25:14 Special Area Student Teaching

25:18 Seminar: Curriculum and Student Teaching

String majors preparing for music teacher certification must pass the examinations of 25:76-72 Group Basic Tests in Piano I-III.

Arias, Woodwinds, and Percussion Majors

Music History, and percussion majors in music education participate in a concert band each semester and in marching band for two or more semesters during the freshman year in residence at the University. Participation in this policy must be approved by the music education adviser.

Courses required include the following:

25:114 Instrumental Techniques

25:19 Marching Band Techniques

25:144 Methods and Materials: Elementary School Instrumental Conducting

25:44 Introduction to Teaching Music

25:135 Private Band Instrument Care and Repair

25:190 Band Methods and Materials

25:135 Introduction to Teaching Music

25:144 Methods and Materials: Elementary School Instrumental Conducting

25:135 Observation and Laboratory Practica in the Secondary School

25:144 Special Area Student Teaching

25:18 Seminar: Curriculum and Student Teaching

Studies preparing for music teacher certification must pass the auditions examinations of 25:76-72 Group Basic Tests in Piano I-III.
Vocal and Keyboard Majors

Vocal performance majors should consult the music office for recommendations. 75:130 Child and Adolescent Voice Production 2 s.h.
75:147 Choral Methods 3 s.h.
75:148 Choral Conducting and Literature 3 s.h.
75:155-156 Electives for Singers III 4 s.h.
75:96 Introduction to Teaching Music 2 s.h.
75:145 Methods and Materials: Elementary School General Music 3 s.h.
75:142 Methods and Materials: Secondary School General Music 3 s.h.
75:151 Observation and Laboratory Practice in the Secondary School 6 s.h.
75:152 Special Area Student Teaching 6 s.h.
75:157 Seminar Curriculum and Student Teaching 1 s.h.

Vocal and Keyboard majors preparing for music teacher certification must pass the proficiency examination of 75:171-712 Group Instruction in Piano I-II. In addition, keyboard majors should register for 25:17 Non-Major Piano for two semesters.

Keyboard Majors (Nonvocal)

Keyboard majors who elect to teach in the nonvocal area must complete the requirements in either the keyboard-wind-percussion or string area and pass the proficiency examination of 25:17-18 Non-Major Piano for two semesters.

Elementary Education Music Endorsement

Students majoring in elementary education may earn an area of specialization in music by completing the approved certification program for elementary teachers and 24 semester hours as follows:

All of these (8 semester hours): 15:25 Music literacy and Theory I 5 s.h.
15:26 Music literacy and Theory II 5 s.h.
Students with trained experiences in music may find it fruitful to register for 25:10 Fundamentals of Music (3 s.h.), offered fall and spring semesters, before registering for 25:12.
Two of these (4 semester hours): 25:71-72 Group Instruction in Piano I-II 4 s.h. (or successful completion of proficiency exams I and II) 2 s.h.
25:24 Beginning Folk Guitar 2 s.h.
25:17 Non-Major Voice (2 semesters) 0-1 s.h.
25:18 Non-Major Piano (2 semesters) 0-1 s.h.
One of these (1 semester hour): 25:95 Old Gold Singers 0-2 s.h.
25:485 Kassailee University Choir 1 s.h.
25:486 Copperstate Singers 1 s.h.
25:191 University Chorale 1 s.h.
All students must audition prior to registering for choral ensemble.

Two of these (6 semester hours): 25:103 World Music I 3 s.h.
25:104 World Music II 3 s.h.
25:105 History of Black Music 3 s.h.
25:107 Masterpieces of Music I 3 s.h.
25:14 Masterpieces of Music II 3 s.h.
Both of these (5 semester hours): 75:145 Methods and Materials: Elementary School General Music 3 s.h.
75:192 Special Area Student Teaching 2 s.h.
Total 24 s.h.

Students who want to complete the area of specialization in music without certification endorsement may substitute other courses for 75:192 with the advisor's approval.

Honors

Freshman and sophomore music majors with an interest in scholarship and a grade-point average of at least 2.80 are invited to become members of the College of Liberal Arts Honors Program (see the "College of Liberal Arts" section of the Catalog). They may also take part in the honors program of the School of Music. Those entering freshmen are advised to register in the honors program immediately and are invited to register in the honors program in the school of the college in the college. They may take honors courses in any course with the consent of the course instructor.

Students with junior standing or major standing who are in the honors program may undertake work leading to the baccalaureate degree of B.M. or B.A. within honors requirements. Honors with a major in music are awarded after completion of 6-8 semester hours in honors courses in music. Honors projects for which credit is given in 25:17 include honors performances (duo and/or ensembles), honors compositions (or transcriptions, orchestrations, arrangements), and honors essays, research papers, oiling, translations. A combination of at least two of these types of projects is required. None of the projects may duplicate projects assigned in other courses, nor may they be required for graduation (e.g., 25:145 Honor Recital). Honors students in music are encouraged to take graduate-level courses and advanced course work in music history, music theory, and languages and to participate in the Master of Arts program. An honors committee appointed by the honors advisor and the student's faculty sponsor evaluates the student's work. See the music honors advisor for more information.

Financial Aid

A number of Music activity scholarships are available to qualified undergraduate music majors. For information, write to the School of Music.

Minor

Students may minor in music by completing 15 semester hours in the School of Music, 12 of which must be in advanced courses. A complete list of advanced courses is available at the music office.

Graduate Programs

Enrolling graduate students must take the School of Music advisement examination in music theory (harmony, counterpoint, and theoretical background courses) and history and literature before registering. The advisory examination is given each session on the two days (excluding Sunday) before registration. Students with deficiencies in these subjects must take 25:11 Review Theory. A list of the general content of these tests 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 Counterpoint after 1600 3 s.h.
25:323 Observation and Laboratory Practice in Theory 1-2 s.h.
25:230 Methods and Techniques of Teaching Static Theory 3 s.h.
Three of these: 25:148 Analysis of Music Literature 1660-1750 3 s.h.
25:149 Analysis of Music Literature 1750-1825 3 s.h.
25:150 Analysis of Music Literature 1825-1900 3 s.h.
25:151 Analysis of Music Literature 1900-Present 3 s.h.
25:152 Analysis of Music Literature Special Topics 3 s.h.
25:285 Honors Chamber Ensemble 3 s.h.

Master of Arts

The Master of Arts is offered in performance (including conducting), composition, music theory, musicology, and music education. Performance majors present a public recital in lieu of a written thesis. The Master of Arts without thesis is offered in music education. Both theses/recitals and performances must be approved by the thesis supervisor, who must submit a proposal to the Graduate Committee. Information about thesis/ recital and performance requirements is available from the School of Music. All curricula must include the requirements listed below.

General Requirement

25:321 Introduction to Graduate Study in Music 2 s.h.
Music Theory
25:240 Introduction to Contemporary Analysis and Theory 3 s.h.
25:151 Review. Theory as determined by advisatory exam.

Music History
25:150 450 Advanced History and Literature of Music 14-18 or satisfactory advisory examination score.

Ensemble Participation
Students participate in a major ensemble each semester of residence (see list of major ensembles in this section of the Catalog). During the junior-senior session, students must be available for ensemble participation as needed. Ensemble assignments are made by the major teacher(s) and the ensemble director. Keyboard majors may substitute accomplishments in participation in a major ensemble, at their advisor's discretion. Theory, composition, musicology, and music education majors may, with their advisor's permission, substitute other ensembles.

Requirements for adjustment of this requirement must be made in writing to a review committee consisting of the ensemble director (or advisor, the major teacher, and a representative from the director's office). The committee meets regularly at the end of each annual registration period.

Admission
Before applicants are considered for admission, they must submit supporting evidence of qualified major area of concentration, as follows:
Composition—representative musical scores
Theory—analysis or research papers
Performance—demonstrated ability of recommendation
Pedagogy—contact School of Music
Information about specific admission and curricular requirements for each area is available from the director's office.

Master of Fine Arts
The M.F.A. is for students of superior ability in composition, instrumental or vocal performance, conducting, and other areas directing. It requires a minimum of 60 semester credit hours. In addition to the entrance and curricular requirements for the Master of Arts degree, students must also present at least two full-length recitals or programs (25:490 M.F.A., Thesis), for which a maximum of 6 semester credit hours of credit is granted. Students may earn a Master of Arts degree while working toward the Master of Fine Arts degree, but all requirements for each degree—including two final examinations—must be met separately, with a minimum combined total of 60 semester hours of graduate credit. See the "Graduate College" section of the Catalog for further details.

Doctoral Degrees
General Requirements
All doctoral study in music includes:
Minimum course requirements listed under the M.A. degree.
One or more additional courses from the following: 25:146, 25:147, 25:148-152, 25:211, 25:255 Musical Acoustics;
Reading proficiency in at least one foreign language must be completed before comprehensive examinations. Music education students may substitute two courses in statistics for this requirement; and
Dissertation.

Doctoral students must participate in a major ensemble during each term of registration unless excused by their advisors (see list of major ensembles in this section of the Catalog). During the junior-senior session, students should be available for ensemble participation as required. Keyboard majors may substitute professional accomplishment in place of a major ensemble, at the advisor's discretion.

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 have already achieved 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. major dissertation consists of three full-length recitals or two recitals and a concerto performance with orchestra or other appropriate ensemble. Vocation may add the exclusions of one or more major roles in a large-scale work for one of their recitals. Co-factors present two additional requirements.

D.M.A. candidates also must complete a scholarly investigation of limited scope in a written thesis.

Admission
Students are considered for admittance to a doctoral program, they must have a minimum of 60 semester hours of graduate credit. See "Graduate College" section of the Catalog for further details.

Composition—representative musical scores—analysis or research papers
Music education—research papers
Music literature—research papers and audition
Musicology (including conducting)—audition
Music history and musicology—research papers, theses

Graduate Awards
Qualifying 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 have an avocational interest in it include 25:13-14 Masterpieces of Music 35:150 Late Eighteenth- and Nineteenth-Century Composers 25:160 Eighteenth- and Nineteenth-Century Composers; the sequence 25:160-164 World Music 18; for students interested in Western music and 25:10 Fundamentals of Music. 25:78 Beginning Folk Guitar is available for nonmajors who wish to develop elementary performance skills for personal musical growth and enjoyment.

Participation in School of Music ensembles is open to all University students with the ensemble director's approval (see list of major ensembles in this section of the Catalog).

Nonmajors interested in participating should consult music advisors regarding appropriate courses in applied music.

Special Programs
The Center for New Music is a performance ensemble within the School of Music. Founded in 1966 with a grant from the Rockefeller Foundation, the center provides a venue for skilled resident musicians who form a nucleus ensemble for the purpose of performing twentieth-century music. As a vital component of the School of Music's comprehensive program, the Center for New Music functions as a research and performance laboratory for staff and students, and as a repertoire ensemble for
the continued performance of new music. Audition information is available on request.

Facilities

The Iowa Center for the Arts has one of the nation's finest facilities for teaching and performance in music. In addition to class and seminar rooms, the Music Building includes 55 teaching studios, 73 practice rooms, a theater, two electronic music laboratories, ear training and listening facilities with 50 listening posts, four large rehearsal halls, ample solo and ensemble practice facilities, professional recording facilities, a live music computer studio with six terminals and five microcomputers, seven practice and vocal organs, the 800-seat Kofahl Urgo Studio, and the 720-seat Clapp Recital Hall. Recital Auditorium seats 2,640 people for concerts and 2,400 for opera and other stage productions.

Resources of the Rita Benton Music Library include more than 68,000 volumes of music and books, some 3,000 titles in microfiche, over 4,000 sound recordings (including compact discs and videotapes), and 300 current periodicals in several languages. The collection of reference materials is particularly strong, supporting research in many areas of musical study. The rare book holdings include a large number of late eighteenth- and nineteenth-century scores. The library's quarters in the Music Building provide seating for 100 people in the reading room and 20 at the listening stations in the sound recording room. Physical facilities also include a combined rec room and recreation room and space for musicological research, typography, and video editing.

Courses

General

250.900 Cooperative Education Internship 3 s.h.
251.004 Misreadings of Mode I 3 s.h.
251.203 Improvisation 3 s.h.
251.205 Theory and Composition 3 s.h.
251.300 Masterclass and Theory II 4 s.h.
251.302 Masterclass and Theory III 4 s.h.
251.303 Masterclass and Theory IV 4 s.h.
251.500 Masterclass and Theory V 4 s.h.
251.501 Masterclass and Theory VI 4 s.h.
251.550 Masterclass and Theory VII 4 s.h.
251.900 Masterclass and Theory VIII 4 s.h.
251.901 Masterclass and Theory IX 4 s.h.
251.902 Masterclass and Theory X 4 s.h.
251.903 Masterclass and Theory XI 4 s.h.
251.904 Masterclass and Theory XII 4 s.h.
251.905 Masterclass and Theory XIII 4 s.h.
251.906 Masterclass and Theory XIV 4 s.h.
251.907 Masterclass and Theory XV 4 s.h.
251.908 Masterclass and Theory XVI 4 s.h.
251.909 Masterclass and Theory XVII 4 s.h.
251.910 Masterclass and Theory XVIII 4 s.h.
251.911 Masterclass and Theory XIX 4 s.h.
251.912 Masterclass and Theory XX 4 s.h.
251.913 Masterclass and Theory XXI 4 s.h.
251.914 Masterclass and Theory XXII 4 s.h.
251.915 Masterclass and Theory XXIII 4 s.h.
251.916 Masterclass and Theory XXIV 4 s.h.
251.917 Masterclass and Theory XXV 4 s.h.
251.918 Masterclass and Theory XXVI 4 s.h.
251.919 Masterclass and Theory XXVII 4 s.h.
251.920 Masterclass and Theory XXVIII 4 s.h.
251.921 Masterclass and Theory XXIX 4 s.h.
251.922 Masterclass and Theory XXX 4 s.h.
251.923 Masterclass and Theory XXXI 4 s.h.
251.924 Masterclass and Theory XXXII 4 s.h.
251.925 Masterclass and Theory XXXIII 4 s.h.
251.926 Masterclass and Theory XXXIV 4 s.h.
251.927 Masterclass and Theory XXXV 4 s.h.
251.928 Masterclass and Theory XXXVI 4 s.h.
251.929 Masterclass and Theory XXXVII 4 s.h.
251.930 Masterclass and Theory XXXVIII 4 s.h.
251.931 Masterclass and Theory XXXIX 4 s.h.
251.932 Masterclass and Theory XL 4 s.h.
251.933 Masterclass and Theory XLI 4 s.h.
251.934 Masterclass and Theory XLII 4 s.h.
251.935 Masterclass and Theory XLIII 4 s.h.
251.936 Masterclass and Theory XLIV 4 s.h.
251.937 Masterclass and Theory XLV 4 s.h.
251.938 Masterclass and Theory XLVI 4 s.h.
251.939 Masterclass and Theory XLVII 4 s.h.
251.940 Masterclass and Theory XLVIII 4 s.h.
251.941 Masterclass and Theory XLIX 4 s.h.
251.942 Masterclass and Theory L 4 s.h.
251.943 Masterclass and Theory LI 4 s.h.
251.944 Masterclass and Theory LII 4 s.h.
251.945 Masterclass and Theory LIII 4 s.h.
251.946 Masterclass and Theory LIV 4 s.h.
251.947 Masterclass and Theory LV 4 s.h.
251.948 Masterclass and Theory LV I 4 s.h.
251.949 Masterclass and Theory LVII 4 s.h.
251.950 Masterclass and Theory LVIII 4 s.h.
251.951 Masterclass and Theory LIX 4 s.h.
251.952 Masterclass and Theory LX 4 s.h.
251.953 Masterclass and Theory LXI 4 s.h.
251.954 Masterclass and Theory LXII 4 s.h.
251.955 Masterclass and Theory LXIII 4 s.h.
251.956 Masterclass and Theory LXIV 4 s.h.
251.957 Masterclass and Theory LXV 4 s.h.
251.958 Masterclass and Theory LXVI 4 s.h.
251.959 Masterclass and Theory LXVII 4 s.h.
251.960 Masterclass and Theory LXVIII 4 s.h.
251.961 Masterclass and Theory LXIX 4 s.h.
251.962 Masterclass and Theory LXI 4 s.h.
251.963 Masterclass and Theory LXII 4 s.h.
251.964 Masterclass and Theory LXIII 4 s.h.
251.965 Masterclass and Theory LXIV 4 s.h.
251.966 Masterclass and Theory LXV 4 s.h.
251.967 Masterclass and Theory LXVI 4 s.h.
251.968 Masterclass and Theory LXVII 4 s.h.
251.969 Masterclass and Theory LXVIII 4 s.h.
Applied Music Courses

Major Field

Students are charged a fee of $84 per semester for registration in all applied music courses in their major field of performance. Courses consist of individual and class instruction, at the instructor’s option. Lessons are a minimum of one hour per week. Students may register for 1-6 semester hours as recommended by their advisor.

Students electing two applied music courses in the same semester are assessed a fee of $190. All music majors are expected to attend seminars of the applied music courses for which they register.

Undergraduate Major

Lower Level

25.59 Orchestral Level Value am
25.61 Lower Level Piano am
25.62 Lower Level Organ am
25.63 Lower Level Voice am
25.64 Lower Level Viola am
25.65 Lower Level Violin am
25.66 Lower Level Cello am
25.67 Lower Level String Bass am
25.68 Lower Level Flute am
25.69 Lower Level Oboe am
25.70 Lower Level Clarinet am
25.71 Lower Level Bassoon am
25.72 Lower Level Saxophone am
25.73 Lower Level Horn am
25.74 Lower Level Trumpet am
25.75 Lower Level Trombone am
25.76 Lower Level Tuba am

Upper Level

25.110 Orchestra Level Value am
25.120 Upper Level Piano am
25.130 Upper Level Organ am
25.140 Upper Level Voice am
25.150 Upper Level Viola am
25.160 Upper Level Violin am
25.170Upper Level Cello am
25.180 Upper Level String Bass am
25.190 Upper Level Flute am
25.200 Upper Level Oboe am
25.210 Upper Level Clarinet am
25.220 Upper Level Bassoon am
25.230 Upper Level Saxophone am
25.240 Upper Level Horn am
25.250 Upper Level Trumpet am
25.260 Upper Level Trombone am
25.270 Upper Level Tuba am

Continuing Education Program

25.14 Early Stage am
25.15 MDR Studio Technique am
25.16 Introduction to Opera am
25.17 Basics of American Music am
25.18 The Composer-Improviser in Voice am
25.19 Improvisation Forms am
25.20 Getting Started as a Free Jazz Artist am
25.21 Improvisation Musical Styles am
25.22 Popular American Music am
25.23 Music Apprenticeship am
Graduate Major
20:020 Major Voice
20:024 Major Piano
20:026 Major Harpsichord
20:028 Major Organ
20:028 Major Organ
20:028 Major Flute
20:028 Major Oboe
20:035 Major String Bass
20:037 Major Horn
20:037 Major Oboe
20:037 Major Clarinet
20:037 Major Saxophone
20:037 Major Trumpet
20:037 Major Trombone
20:037 Major Euphonium
20:037 Major Tuba
20:037 Major Percussion
20:031 Major songwriting

Senior Major
Instruction in the student's minor field of performance or instruction is offered for a fee of $55 per course per semester. A course consists of one half-hour lesson or two hours of class instruction weekly, at the option of instruction. All minimum courses are required for all levels of performance. No minor grades may be given.

Undergraduate Nonmajor
20:17 Non-Major Voice
20:17 Non-Major Piano
20:17 Non-Major Organ
20:23 Non-Major Harp
20:33 Non-Major Viola
20:23 Non-Major Cello
20:23 Non-Major Double Bass
20:23 Non-Major Bassoon
20:23 Non-Major Oboe
20:23 Non-Major Clarinet
20:23 Non-Major Saxophone
20:23 Non-Major Trumpet
20:23 Non-Major Trombone
20:23 Non-Major Euphonium
20:23 Non-Major Tuba
20:23 Non-Major Percussion

Ensembles
No fee is charged for ensemble courses. Consent of instructor required. See also 25:253 Multi-Media III under "Dance and Composition" in this course listing.

20:05 Old Gold Singers
20:10 Conservatory Singers
20:11 University Chorus
20:13 Chamber Orchestra
20:14 Collegiate Musicians
20:14 Symphony Orchestra
20:14 Massed University Chorus
20:16 Procession Accompaniment
20:17 Bassoon Chorus Music
20:18 Wind Chamber Music
20:19 Wind Chamber Music
20:20 Wind Chamber Music
20:21 Wind Chamber Music
20:22 Wind Chamber Music
20:23 Wind Chamber Music
20:24 Wind Chamber Music
20:25 Wind Chamber Music
20:26 Wind Chamber Music
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20:97 Wind Chamber Music
20:98 Wind Chamber Music
20:99 Wind Chamber Music
20:00 Wind Chamber Music

Graduate Nonmajor
20:520 Non-Major Voice
20:520 Non-Major Piano
20:520 Non-Major Organ
20:520 Non-Major Harpsichord
20:520 Non-Major Viola
20:520 Non-Major Cello
20:520 Non-Major Double Bass
20:520 Non-Major Bassoon
20:520 Non-Major Oboe
20:520 Non-Major Clarinet
20:520 Non-Major Saxophone
20:520 Non-Major Trumpet
20:520 Non-Major Trombone
20:520 Non-Major Euphonium
20:520 Non-Major Tuba
20:520 Non-Major Percussion

20:020 Opera Coaching and Accompaniment
20:100 Voice Repertoire and Vocal Production

NEUROSCIENCE
Graduate degrees offered: Ph.D. in Neuroscience.
The Neuroscience Ph.D. program is an interdisciplinary program involving members of the Departments of Anatomy, Pharmacology, Physiology, and Psychobiology, and Psychology as well as a number of faculty members from biological departments. See "Neuroscience" in the College of Medicine sections of the Catalog for a list of participating faculty members, degree requirements, and courses.

PHILOSOPHIES AND ETHICS OF POLITICS, LAW, AND ECONOMICS
Chair: Phillip Common

PEOPLE Program
The College of Liberal Arts offers an interdisciplinary program leading to a certificate in Philosophies and Ethics of Politics, Law, and Economics—or PEOPLE. Departments primarily involved in the program include Economics, Philosophy, and Political Science. Students pursuing majors or minors in these departments are eligible to join the PEOPLE program; pre-law students may find it especially attractive.

Philosophies and Ethics of Politics, Law, and Economics is based on the assumption that societies institutionalize values. They generate institutions that guide conduct by governing opportunities, prescribing behavior, and influencing beliefs and attitudes. As people examine their behavior in society, they find that their rules are shared with other subjects, decision makers, and inquirers must be studied at both individual and institutional levels. The PEOPLE program enables its students to select courses that explore the behavior of institutions, nations, and values in behavior and how they interact.

Because of the program's multiple requirements, students should begin in freshman or sophomore year. However, students who have already taken introductory courses that satisfy PEOPLE requirements can enter and complete the program by the time they graduate. Students who complete the program requirements earn a certificate, and the notation "Certificate in the Philosophies and Ethics of Politics, Law, and Economics" appears on their transcript.
Students interested in enrolling in the PEOPLE program should contact the Office of Academic Programs, College of Liberal Arts.

Program Requirements

Students must complete 36 semester hours to earn the PEOPLE certificate. Those who have a major in one of the program's core departments and a minor in another may participate as long as they can fulfill the certificate requirements.

A course that meets a General Education Requirement and/or a requirement in the major or minor may also be used to meet a PEOPLE requirement.

Students must complete the following course of study.

Foundation

Each PEOPLE student must complete a major or minor in economics, philosophy, or political science. Within the chosen discipline, the student must take courses that provide basic familiarity with issues and methods of the discipline and that emphasize causes, reasons, or values. Requirements for each discipline are as follows:

Economics

Students must choose either the microeconomics or the macroeconomics track.

Microeconomics
6E.1 Principles of Microeconomics
6E.103 Microeconomics
6E.161 History of Economic Thought
6E.166 The Political Economy of Socialism

One course on issues in microeconomics, chosen from:
6E.111 Labor Economics
6E.130 Environmental Economics
6E.171 Quantitative Legal and Economic Analysis
6E.173 Advanced International Economics
6E.175 Economic Analysis of Labor Markets
6E.177 Industrial Organization

Macroeconomics
6E.2 Principles of Macroeconomics
6E.105 Macroeconomics
6E.161 History of Economic Thought
6E.166 The Political Economy of Socialism

One course on issues in macroeconomics, chosen from:
6E.117 Money and Banking
6E.190 Economics of the Government Sector
6E.122 Political Economy of the Military-Industrial Complex
6E.125 International Economics
6E.126 Economic Development

Underdeveloped Areas
6E.121 Agricultural and Food Policy
6E.125 Regional and Urban Economics
6E.141 Economics of American Industries
6E.170 Advanced International Economics
6E.174 Monetary Economics

Philosophy

26.34 Philosophy and Human Nature
26.130 Introduction to Ethics

One course in the history of philosophy, chosen from:
26.111 Ancient Philosophy
26.112 Medieval Philosophy
26.114 Seventeenth-Century Philosophy
26.116 Eighteenth-Century Philosophy
26.117 Nineteenth-Century Philosophy
26.12 Twenty-First-Century Philosophy
26.225 American Philosophy
26.241 Continental Philosophy

One course on ethical issues, chosen from:
26.104 Introduction to Philosophy of Science
26.102 Political Philosophy
26.123 Philosophy of History
26.187 Epistemology
26.196 Philosophy of the Human Sciences

Political Science

30.36 Introduction to Political Thought and Political Action

One course on methods of political analysis, chosen from:
30.114 Law and Social Change
30.125 Introduction to Positive Political Theory
30.140 Humanism Seminar on the Study of Politics

One course on the history of political theory, chosen from:
30.131 Foundations of Political Theory
30.132 Modern Political Theory
30.133 Postmodern Political Theory
30.134 American Political Theory

One course on issues in political theory, chosen from:
30.138 Origins of Uneasy Truth
30.139 Current Political Theory
30.139 Political Issues

Fields

Students must complete three courses (9 semester hours) in each of two of the following fields—economics, ethics, politics, and law—as follows:

Economics
6E.1 Principles of Microeconomics
6E.2 Principles of Macroeconomics
6E.103 Microeconomics
6E.2 Principles of Microeconomics

Philosophy

26.161 History of Economic Thought
26.164 The Political Economy of Socialism

Ethics

26.102 Introduction to Ethics

One course in the history of ethics, chosen from:
26.130 Political Philosophy
26.135 Analytic Ethics
26.182 History of Ethics
26.194 Moore, Pinchard, and Ross

One course on issues in ethics, chosen from:
26.132 Political Philosophy
26.135 Analytic Ethics
32.508 Religious Ethics: Moral Character and Religious Faith
32.159 Political Theology and Social Conscience
32.160 Christian Ideas of Church
32.161 History of Religious Ethics
32.163 Introduction to Bioethics

Politics

30.36 Introduction to Political Thought and Political Action

One course on the history of political theory, chosen from:
6E.165 Marx
30.113 Foundations of Political Theory
30.121 Modern Political Theory
30.122 Postmodern Political Theory
30.124 American Political Theory

One course on issues in political theory, chosen from:
30.138 Origins of Uneasy Truth
30.139 Current Political Theory
30.139 Political Issues

Law

Liberal Arts undergraduates typically are not permitted to register for courses in the College of Law (prefix 91). PEOPLE program students may register for law courses if they register under a cross-listed liberal arts number, obtain prior approval from the director of the PEOPLE program, and obtain consent of instructor. Students may count the credit toward a liberal arts degree but not toward any subsequent University of Iowa law degree. The requirements are as follows:

One course on principles of legal theory, chosen from:
91.258 144.251 Jurisprudence
91.350 144.350 Issues in Law and Philosophy
91.327 144.253 Social Science in the Law
91.317 144.255 Legal Reasoning
One course on the history of legal theory, chosen from:

145.134 or 91.256 Foundations of Anglo-American Law
145.140 American Constitutional Law and Politics
91.250 or 145.110 Law in American History I
91.251 or 145.111 Law in American History II
144.201 or 144.206 Legal History Seminar
145.227 or 145.230 Modern Constitutional History

One course on issues in legal theory, chosen from:

30.118 and Social Change
30.117 The Politics of Civil Rights and Liberties
30.178 or 145.030 Women and the Law
91.190 or 145.206 Human Rights in the World Community: Problems of Law and Policy
91.207 or 144.209 Legal Control of Sexuality and Sexual Conduct
91.345 or 144.210 Hard Cases: Science, Policy and Values
91.319 or 144.211 Native American Law
91.660 or 144.222 Law, Medicine, and Public Policy
91.859 or 829.29 Law and Lawyers in Literature

Integration

The following are required.

Theory of Inquiry

One course chosen from:

25.104 Introduction to Philosophy of Science
25.105 Philosophy of the Human Sciences
30.102 Honors Seminar on the Study of Politics

Senior Seminar

144.144 Seminar: Philosophies and Ethics of Politics, Law, and Economics

Courses

144.112 Seminar: Philosophies and Ethics of Public Law, Law, and Economics
144.130 Social and Political Theory
145.061 Foundations of Anglo-American Law
144.062 Legal Reasoning

Philosophy

Chair: Richard Fariña

Professor: Lanard Addis, Paraskos Batistachen, Philip Pincus, Guarino, Richard
Associate professor: Alex Fisk, Scott MacDonald
Assistant professor: Gregory Landis, David Stans, Guenther Dettler

Graduate degree offered: M.A., Ph.D.

Undergraduate Program

Undergraduate courses in philosophy are designed to impart knowledge of fundamental issues and main developments in philosophy while strengthening logical and analytic skills. A major in philosophy develops abilities useful for graduate or professional work in many fields—law, for example—under any situation requiring clear, systematic thinking. A graduate degree is necessary for college teaching in philosophy.

Bachelor of Arts


The final 12 semester hours of philosophy courses used to complete the departmental requirement must be taken at The University of Iowa. In addition to prerequisites listed for individual courses, considerations such as the 20.111 or 26.107 must be considered relevant to the effective structuring of a major’s undergraduate education. 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 with a 2.00 grade-point average. Of these, a minimum of 12 semester hours must be in philosophy courses 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.

Honor Program

The department administers an honors program for undergraduate students of superior ability. In order to be admitted to the honors program in philosophy, a student must be registered in the College of Liberal Arts Honors Program and must have a minimum grade-point average of 3.80 in philosophy courses. In order to graduate with honors in philosophy, the student must complete the regular requirements for a major in philosophy with a grade-point average of at least 3.80 in philosophy courses and must write an acceptable honors thesis on a significant subject. The director of undergraduate studies can provide more information.

Graduate Program

The graduate program is designed to train teachers and scholars in philosophy. The main areas in the graduate curriculum are philosophy, 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 oral final examination also is required. There is no foreign language requirement. The director of graduate studies can provide more information.

Doctor of Philosophy

The Ph.D. degree requires a minimum of 72 semester hours of graduate credit by the time the dissertation is completed. Candidacy for the doctoral program is determined by a formal vote of the entire faculty of the Department of Philosophy, usually after the student has completed
three semesters of graduate study in residence.

Requirements include courses in metaphysics and epistemology, history of philosophy, logic and philosophy of science, and ethics. Also required in a written comprehensive examination consisting of a traditional defense, a special area examination, and a presentation of the dissertation. The comprehensive examination may be taken only after the student has 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, 620 English/Philosophy Building, shortly before early registration.

For Undergraduates Only

261 Problems of Moral Reasoning
Philosophical introduction to ethical thought, emphasizing on its implications for contemporary moral controversies.

262 Problems of Political Philosophy
Philosophical study of the social body and the relation of the individual to the state.

263 Philosophy and Human Nature
Philosophical and historical development of theories of human nature by various authors from ancient times to the present. Emphasis on the relationship between human nature and human culture.

264 Philosophy and Natural Science
Theories of the nature of scientific knowledge and the relation of science to society and technology. Focus on scientific perspectives.

265 Philosophy and the Natural Sciences
Introduction to the history and philosophy of natural sciences. Emphasis on the nature of scientific knowledge and the relationship of science to human values.

266 Introduction to Philosophy
Introduction to the major traditions and philosophical issues and arguments. Topics may include formal logic, metaphysics, the self, identity, and the nature of religious life. (Lecture-Debate)

For Undergraduates and Graduates

From the fall semester:

2839 Introduction to Ethics
Analytical and practical introduction to historical and contemporary ethical theory. Focus on the nature of values and the application of ethical theories. (Lecture-Seminar)

2840 Introduction to Logic
Basic principles of deductive and inductive logic, with applications to ethical theory and the foundations of mathematics. (Lecture-Seminar)

2841 Introduction to Tractatus Logico-

2842 Introduction to Philosophy of Science
New views on contemporary philosophy of science.

2843 Ancient Philosophy
Main ideas and major figures such as Plato and Aristotle.

2844 Medieval Philosophy
Main ideas and major figures such as Augustine and Aquinas.

2845 Seventeenth-Century Philosophy
Main ideas, central arguments, and major positions from Bacon and Descartes to Leibniz and Locke.

2846 Eighteenth-Century Philosophy
Main ideas, central arguments, and major positions from Berkeley to Kant.

2847 Nineteenth-Century Philosophy
Main ideas and major figures of nineteenth-century analytic philosophy and continental philosophy.

2848 Twentieth-Century Philosophy
Main ideas and major figures of twentieth-century analytic philosophy and continental philosophy.

2849 American Philosophy
Important figures in American philosophy, including John Locke, Thomas Jefferson, and others.

2850 Aesthetics
Major figures in philosophy of the arts.

2851 Political Philosophy
Major problems in political philosophy.

2852 Philosophy of History
Major problems in philosophy of history.

2853 Philosophy of Religion
Major traditions in philosophy of religion. (Lecture-Seminar)

2854 Philosophy of Language
Philosophical development of theories of language and meaning in the twentieth century.

2855 Philosophy of the Mind
Major problems of artificial intelligence.

2856 Existentialist Philosophy
Chains of existentials, including Kierkegaard, Nietzsche, Heidegger, Sartre, and Camus.

2857 European Philosophy of the West
Comprehensive analysis of ideas in classic and modern European philosophy.

2858 Indian Philosophy
Major ideas and major texts.

2859 Buddhist Philosophy
Introduction to the major ideas of Buddhist philosophy.

2860 Religious Philosophy
An introduction to world religions, focusing on the way in which religious beliefs are shaped by cultural and historical factors.

2861 Undergraduate Seminar in Philosophy
Introduction to the major philosophical traditions and historical periods.

2862 Topics in Ancient Philosophy
Introduction to the major philosophical ideas and arguments of ancient philosophers.

2863 Topics in Arabic Philosophy
An introduction to the major philosophical ideas and arguments of Arabic philosophers.

2864 Topics in Modern Philosophy
Major ideas and major texts. (Lecture-Seminar)

2865 Kant
Introduction to the major ideas and arguments of Immanuel Kant.

2866 Analytic Philosophy
Major ideas and major texts. (Lecture-Seminar)

2867 Mill
An introduction to the major ideas and arguments of John Stuart Mill.

2868 Hume
An introduction to the major ideas and arguments of David Hume.

2869 Hegel
An introduction to the major ideas and arguments of Georg Wilhelm Hegel.

2870 Marx
An introduction to the major ideas and arguments of Karl Marx.

2871 Nietzsche
An introduction to the major ideas and arguments of Friedrich Nietzsche.

2872 Freud
An introduction to the major ideas and arguments of Sigmund Freud.

2873 Adorno
An introduction to the major ideas and arguments of Theodor Adorno.

2874 Husserl
An introduction to the major ideas and arguments of Edmund Husserl.

2875 Wittgenstein
An introduction to the major ideas and arguments of Ludwig Wittgenstein.

2876 Derrida
An introduction to the major ideas and arguments of Jacques Derrida.

2877 Foucault
An introduction to the major ideas and arguments of Michel Foucault.

2878 Deleuze
An introduction to the major ideas and arguments of Gilles Deleuze.

2879 Badiou
An introduction to the major ideas and arguments of Alain Badiou.

2880 Analytic Ethica
Selected topics in contemporary ethics. (Lecture-Seminar)

2881 History of Ethics
Selected topics in the history of philosophical ethics. (Lecture-Seminar)

2882 Philosophy of Mind
Selected topics in the philosophy of mind. (Lecture-Seminar)

2883 Philosophy of Language
Selected topics in the philosophy of language. (Lecture-Seminar)

2884 Philosophy of Science
Selected topics in the philosophy of science. (Lecture-Seminar)

2885 Philosophy of Religion
Selected topics in the philosophy of religion. (Lecture-Seminar)

2886 Philosophy of Art
Selected topics in the philosophy of art. (Lecture-Seminar)

2887 Philosophy of Law
Selected topics in the philosophy of law. (Lecture-Seminar)

2888 Philosophy of Mind
Selected topics in the philosophy of mind. (Lecture-Seminar)

2889 Philosophy of Language
Selected topics in the philosophy of language. (Lecture-Seminar)

2890 Philosophy of Science
Selected topics in the philosophy of science. (Lecture-Seminar)

2891 Philosophy of Art
Selected topics in the philosophy of art. (Lecture-Seminar)

2892 Philosophy of Mind
Selected topics in the philosophy of mind. (Lecture-Seminar)

2893 Philosophy of Religion
Selected topics in the philosophy of religion. (Lecture-Seminar)

2894 Philosophy of Language
Selected topics in the philosophy of language. (Lecture-Seminar)

2895 Philosophy of Science
Selected topics in the philosophy of science. (Lecture-Seminar)

2896 Philosophy of Art
Selected topics in the philosophy of art. (Lecture-Seminar)

2897 Philosophy of Mind
Selected topics in the philosophy of mind. (Lecture-Seminar)

2898 Philosophy of Religion
Selected topics in the philosophy of religion. (Lecture-Seminar)

2899 Philosophy of Language
Selected topics in the philosophy of language. (Lecture-Seminar)

2900 Philosophy of Science
Selected topics in the philosophy of science. (Lecture-Seminar)

2901 Philosophy of Art
Selected topics in the philosophy of art. (Lecture-Seminar)

2902 Philosophy of Mind
Selected topics in the philosophy of mind. (Lecture-Seminar)

2903 Philosophy of Religion
Selected topics in the philosophy of religion. (Lecture-Seminar)

2904 Philosophy of Language
Selected topics in the philosophy of language. (Lecture-Seminar)

2905 Philosophy of Science
Selected topics in the philosophy of science. (Lecture-Seminar)

2906 Philosophy of Art
Selected topics in the philosophy of art. (Lecture-Seminar)

2907 Philosophy of Mind
Selected topics in the philosophy of mind. (Lecture-Seminar)

2908 Philosophy of Religion
Selected topics in the philosophy of religion. (Lecture-Seminar)

2909 Philosophy of Language
Selected topics in the philosophy of language. (Lecture-Seminar)

2910 Philosophy of Science
Selected topics in the philosophy of science. (Lecture-Seminar)

2911 Philosophy of Art
Selected topics in the philosophy of art. (Lecture-Seminar)

2912 Philosophy of Mind
Selected topics in the philosophy of mind. (Lecture-Seminar)

2913 Philosophy of Religion
Selected topics in the philosophy of religion. (Lecture-Seminar)

2914 Philosophy of Language
Selected topics in the philosophy of language. (Lecture-Seminar)

2915 Philosophy of Science
Selected topics in the philosophy of science. (Lecture-Seminar)

2916 Philosophy of Art
Selected topics in the philosophy of art. (Lecture-Seminar)

2917 Philosophy of Mind
Selected topics in the philosophy of mind. (Lecture-Seminar)

2918 Philosophy of Religion
Selected topics in the philosophy of religion. (Lecture-Seminar)

2919 Philosophy of Language
Selected topics in the philosophy of language. (Lecture-Seminar)

2920 Philosophy of Science
Selected topics in the philosophy of science. (Lecture-Seminar)

2921 Philosophy of Art
Selected topics in the philosophy of art. (Lecture-Seminar)

2922 Philosophy of Mind
Selected topics in the philosophy of mind. (Lecture-Seminar)

2923 Philosophy of Religion
Selected topics in the philosophy of religion. (Lecture-Seminar)

2924 Philosophy of Language
Selected topics in the philosophy of language. (Lecture-Seminar)

2925 Philosophy of Science
Selected topics in the philosophy of science. (Lecture-Seminar)

2926 Philosophy of Art
Selected topics in the philosophy of art. (Lecture-Seminar)

2927 Philosophy of Mind
Selected topics in the philosophy of mind. (Lecture-Seminar)

2928 Philosophy of Religion
Selected topics in the philosophy of religion. (Lecture-Seminar)

2929 Philosophy of Language
Selected topics in the philosophy of language. (Lecture-Seminar)

2930 Philosophy of Science
Selected topics in the philosophy of science. (Lecture-Seminar)
DIVISION OF PHYSICAL EDUCATION

EXERCISE SCIENCE

Chair: Jerry A. Meynord

Undergraduate degree offered: B.S., B.S. Education degree offered: M.A., Ph.D.

The Department of Exercise Science offers Bachelor of Science degree programs in both exercise science and physical education. The graduate program includes the Master of Arts degree without thesis, the Master of Science degree with thesis, and the Ph.D. degree. Students may select from several different areas of specialization for the M.A. with thesis, and the Ph.D.

Undergraduate Programs

Bachelor of Science degree programs provide preparation for continuing education at the graduate level in exercise science or physical education and for careers in physical education and athletic training.

Candidates for the B.S. degree in exercise science are expected to satisfy the College of Liberal Arts General Education Requirements in natural sciences by taking 4-13-14 Chemistry and 37.3 Principles of Animal Biology. The social sciences General Education Requirement should be satisfied by taking 30.2 Elementary Psychology.

Candidates for the B.S. degree in physical education are expected to satisfy the College of Liberal Arts General Education Requirements in natural sciences by taking Chemistry 4-7 and Animal Biology 37.3. The social sciences General Education Requirement should be satisfied by taking 31.1 Elementary Psychology.

Bachelor of Science in Exercise Science

The exercise science major is designed primarily for students who intend to pursue advanced degrees in an exercise science specialization or to seek admittance to a professional program in the health sciences (e.g., medicine, dentistry, or physical therapy). The sub-specialties in the program are anatomy, biomechanics, exercise physiology, and motor control.

Qualifications for admission to the major program include completion of a minimum of 90 semester hours of course work with a cumulative grade point average of 2.75 or higher, and attainment of a cumulative grade-point average of 3.00 or higher for the following courses: 20.1 and 20.2, or 10.3, 11.3, 22.5 M 1225 M or 22.52 M, 31.1, and 31.3.

Exercise Science majors must complete the following core courses plus seven semester hours in their elected sub-specialty.

414 Principles of Chemistry II 3 s.h.
71-143 Introduction to Statistical Methods 3 s.h.
225-102 Introduction to Statistical Methods 3 s.h.
225-100 Biostatistics 3 s.h.

227-101 Introduction to Computing with FORTRAN 3 s.h.
68-20 Computer Analysis 3 s.h.
20-11 College Physics 4 s.h.
25-172 College Physics 4 s.h.
37-3 Principles of Animal Biology 3 s.h.
72-140 Human Physiology 4 s.h.
21-150 Introductory Physiology 4 s.h.

The following courses should be completed prior to the senior year:

23-152 Cross Anatomy for Exercise Science 2 s.h.
23-153 Anatomy Lab for Exercise Science 2 s.h.
23-180 Histocompatibility of Human Mucosa 4 s.h.
27-141 Exercise Physiology 1 s.h.
27-142 Exercise Physiology Laboratory 1 s.h.
25-180 Motor Control I 3 s.h.
31-150 Research in Exercise Science 3 s.h.

Anatomy Specialization

23-153 Advanced Anatomy 2 s.h.
23-154 Advanced Anatomy and Kinesiology 2 s.h.
23-155 Skeletal Muscle Biology 3 s.h.
27-137 The Qualitative Analysis of Human Motion 3 s.h.
27-186 Exercise Science Senior Seminar 2 s.h.
31-113 Cell, Tissue, and Organ Biology 5 s.h.
27-231 Laboratory in Advanced Anatomy 6 s.h.

Kinesiology Specialization

22-154 Introductory Endocrinology 2 s.h.
General Major
Students who elect the general major in physical education must complete the core requirements listed below and the following courses:

138:103 Administration of Physical Education and Athletics
2.3 s.h.
127:105 Physical Education for the Handicapped
3 s.h.
(See also 138:165)
28:20 Psychosocial Dimensions of Physical Activity
3 s.h.
136:142 Contemporary Issues of Health Education
3 s.h.

Athletic Training Program
The athletic training program provides concentrated studies and clinical experiences leading to National Athletic Training Association certification in athletic training. Employment opportunities for graduates include serving as trainers for professional teams as well as university, college, and secondary school athletic teams. Teacher certification is recommended but not required.

Students who have not formally contacted the athletic training program director prior to registering at The University of Iowa should talk to an athletic training advisor or their college advisor upon entering the University. Early advising should be sought for course counseling since prerequisites and sequenced skill development must be completed along with general education course work.

Students are formally admitted into the program and begin clinical experience as sophomores. Application is made between January 1 and April 1 of the freshman year. To be considered for admission, students must be certified in first aid and CPR and must complete at least one college-level course in each of the following areas: animal husbandry, chemistry, mathematics, physics, recreation psychology, human anatomy, human growth and development, and introductory athletic training.

Program requirements include:
7C:196 Counseling for Related Professions
3 s.h.
17:141 Introductory Nutrition
3 s.h.
138:142 Contemporary Issues of Health Education
3 s.h.
71:109 Drugs: Their Nature, Action, and Use
4 s.h.
127:106 Human Physiology
3 s.h.
27:140 Motor Control I
3 s.h.
27:157 Exercise Physiology for Practitioners
3 s.h.
27:162 Clinical Sciences in Athletic Training I
3 s.h.
27:183 Clinical Sciences in Athletic Training II
3 s.h.
27:184 Seminar in Athletic Training
3 s.h.
27:253 Laboratory in Advanced Anatomy
6 s.h.

EMT-A or comparable emergency care certification
*Enrollment is limited to students formally admitted to the athletic training program.

Minor in Physical Education
The minor in physical education requires at least 15 semester hours to include an upper division course and an introductory course in the area of physical education. The following courses are recommended for the minor in physical education:

138:103 Administration of Physical Education and Athletics
3 s.h.
138:111 Human Growth and Motor Development
3 s.h.
27:107 Biomechanics of Physical Activity
3 s.h.
138:116 Motor Learning and Motor Control
3 s.h.
27:140 Exercise Physiology for Practitioners
3 s.h.
27:163 Human Anatomy
3 s.h.
28:20 Psychosocial Dimensions of Physical Activity
3 s.h.
27:167 Measurement and Evaluation in Physical Education
3 s.h.
(See also 138:167)

No course accepted toward the minor may be taken pass/no credit.

Graduate Programs
Master of Arts without Thesis
The program leading to the M.A. degree without thesis is designed as a terminal unit of advanced study for physical education teachers and athletic coaches. Emphasis is on applying research findings to the organization, teaching, and evaluation of basic physical education programs for all students in schools and colleges, and to coaching interscholastic and intercollegiate athletic teams. The program focuses on problems associated with teaching and coaching in public schools and community colleges.

The following undergraduate course work is required background for the master's M.A. program in physical education:

Human anatomy
3 s.h.
Human physiology
3 s.h.
Personal health (or equivalent)
2 s.h.
Administration of physical education
3 s.h.
Methods in physical education
2 s.h.
Practicum teaching (or equivalent)
2 s.h.
Teaching of skills in physical education
4 s.h.
Coaching of a sport
1 s.h.
Classroom in physical education and related areas
11 s.h.
Total
30 s.h.

For the M.A. degree without thesis, students must complete a minimum of 30 semester hours.
Master of Arts with Thesis

The thesis program leading to the M.A. degree in exercise science or physical education is designed primarily as a first step in graduate study leading to the doctor of philosophy. It also provides advanced preparation for persons who are teaching or who intend to teach undergraduate physical education in four-year colleges but do not plan to pursue doctorates.

The thesis program for the M.A. degree in exercise science or physical education is a research-oriented program. It introduces students to the nature and extent of research in exercise science and physical education, and gives them an opportunity to specialize in an area of interest.

Because the M.A. degree with thesis is regarded as the first step toward the Ph.D. degree in one of nine areas of specialization, the undergraduate course work required depends on the area in which the candidate intends to specialize: for doctoral study. Specific courses in mathematics, chemistry, physics, biology, physiology, or psychology are required in some areas of specialization. These courses must be approved by the M.A. advisor and the professor in charge of the emphasis area selected by the candidate.

The following courses are required for the A.A. degree with thesis:
Two courses outside the area of specialization, from the following:

27141 Exercise Physiology 5 s.h.
27142 Exercise Physiology Laboratory 1 s.h.
27153 Advanced Anatomy and Kinesiology 2 s.h.
27157 Biomechanics of Human Motion 4 s.h.
27205 Adapted Physical Education: Special Topics and Research 3-4 s.h.
27207 Public School Curriculum in Physical Education 2.5 s.h.
27242 Supervision of Physical Education 3 s.h.
27267 Advanced Measurement and Evaluation in Physical Education 3 s.h.

Three courses related to basic research tools, from the following:
77143 Introduction to Statistical Methods 3 s.h.
63161 Introduction to Biostatistics 3 s.h.
An approved graduate-level course in computer science 2-4 s.h.
An approved graduate-level course in scientific writing 3 s.h.
Specialization area:
27404 Thesis: M.A. 4 s.h.
Specialization courses approved by advisor 5-7 s.h.
Electives 4-5 s.h.
Total 30 s.h.

Doctor of Philosophy

Admission

Admission to the Ph.D. program is based on applicants' grade point average on work completed; for the M.A. or M.S. 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 3.00 or higher on all graduate work.

For admission to the Ph.D. program in therapeutics, 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 and physical education and 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 or physical education.

Specialization areas offered include adapted physical education; administration, curriculum, and supervision in physical education, anatomy, biomechanics; exercise physiology; measurement and evaluation in physical education, motor control, and kinesiology. The thesis program for the Ph.D. degree, together with the Ph.D. core courses, provides students with additional training for the Ph.D. candidate's specialization. Candidates must complete a minimum of 71 semester hours beyond the B.A. or B.S. degree. This must include the completion of a dissertation on a problem in the area of specialization. It is required that an appropriate manuscript of the dissertation be submitted on an approved professional journal for publication. Many of the courses in the specialization areas are offered by departments other than the Department of Exercise Science. Permission from these departments is frequently necessary on comprehensive examination committees and on dissertation committees for the initial presentation of 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 the following requirements:
Completion of the M.A. or M.S. degree with thesis; this may or may not include The University of Iowa M.A./M.S. degree requirements in the Department of Exercise Science.

Ph.D. degree courses include a minimum of 10 semester hours of independent research exclusive of the thesis requirement; the extent of the independent study is to be determined by the student and the student's advisor. Students must submit such completed projects for publication.

At least 30 semester hours of graduate credit beyond the B.A. degree. Ph.D. degree in exercise science typically exceeds 60 semester hours.

Core Course Requirements

Two approved courses in statistics
One approved computer science course 27124 Seminar in College Teaching (minimum of 3 s.h.)
27125 Seminar in College Teaching (minimum of 10 s.h.)
27405 Thesis: Ph.D. (12 s.h.)

In order to ensure that exercise science requirements include a minimal breadth of knowledge over the key scientific areas that constitute the basis of the major, the following scientific area core 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. Three must be in the major courses.

Students specializing in other areas must select one course in each of the four areas. Two must be second-level courses.
Students specializing in therapeutics may submit a formal request to the Exercise Science faculty to substitute specific courses from their program. (For scientific arts courses listed below, the student must pass both a lecture and a laboratory tier.)

**Anatomy**
- First level: 27.15H and 27.15 (4 s.h.)
- Second level: 27.53 (5 s.h.)

**Biochemistry**
- First level: 27.16 (3 s.h.)
- Second level: 27.197 (4 s.h.)

**Motor Control**
- First level: 27.156 (3 s.h.)
- Second level: 27.193 (4 s.h.)

**Exercise Physiology**
- First level: 27.21 and 27.142 (4 s.h.)
- Second level: 27.274 and 27.203, or 27.275 and 27.304, or 27.276 and 27.305 (5 s.h.)

**Qualifying and Comprehensive Examinations**
To assess general background knowledge, all Ph.D. candidates must pass an initial 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 (with the consent of students entering with only the Bachelor's degree). Candidates specializing in exercise physiology who wish a major 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.

Candidates are expected to obtain a broad knowledge base within their area of specialization. This normally entails approximately 30 semester hours. Recommended courses for each area of specialization are as follows:

### Adapted Physical Education
- 70.130 Exceptional Physical Education 3 s.h.
- 27.504 Special Topics and Research 3-4 s.h.
- 60.101 Human Anatomy 4 s.h.
- 27.253 Laboratory in Advanced Anatomy 4 s.h.

### Administration, Curriculum, and Supervision
- 27.242 Supervision of Physical Education 3 s.h.
- 70.201 Foundations of School Administration 3 s.h.
- 27.261 Advanced Administration of Physical Education 3 s.h.
- 27.937 Research Models and Theory in Physical Education Curriculum 3 s.h.

### Anatomy
- 27.253 Laboratory in Advanced Anatomy 4 s.h.
- 60.217 Developmental Anatomy 5 s.h.
- 60.234 Medical Neuroanatomy 4 s.h.

### Motor Control
- 27.295 Electromyography in Kinesiology and Biomechanics 3 s.h.
- 27.314 Seminar in Motor Control 3 s.h.
- 27.320 Introduction to the Neurosciences 3 s.h.
- 27.312 Biomedical instrumentation 3 s.h.

These courses may be taken from the following areas: computer science, neuroscience, biophysics, anatomy, and exercise science.

### Therapeutics
Candidates for this specialization must be accepted into the graduate program in physical therapy education as well as core science (neuroscience, biophysics, anatomy, and exercise science.

### General Core
- 22C.103 Introduction to Compiling with Fortran 2 s.h.
- 63.217 Research Data Management 3 s.h.
- 27.240 Data Processing 3 s.h.
- 27.415 Statistical Methods 3 s.h.
- 104.214 Advanced Seminar in Physical Therapy 3 s.h.
- 106.209 Teaching Practicum 3 s.h.
- Total 23 s.h.

### Research
- 27.243 Research 3 s.h.
- 104.268 Practicum in Research 3 s.h.
- 104.219 Independent Study 3 s.h.
- 190.327 Research in Therapeutics 3 s.h.
- Total 15 s.h.

### Specialty Electives
- Individual plans of study are developed jointly by the graduate student and faculty advisor. Course requirements depend on the student's specific specialty area.

### Facilities
- The Field House, Recreation Building, and Indoor Practice Facility provide excellent facilities for the physical education skills program and the undergraduate and graduate instructional programs.
- Research laboratories for anatomy, biomechanics, physiology of exercise, and motor control are located in the Field House and in other buildings on campus. They provide excellent facilities for instruction and research at both the undergraduate and graduate levels.
- Cooperative efforts with other departments facilitate specialization by allowing exercise science and physical education students to use additional special facilities.
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 submit a transcript and a non-Degree 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 accepted from the department office. Deadline for fall semester admission is March 1, for spring semester, October 1.

Requirements

Students must take 34 semester hours of core courses, including:

104-60 Leisure in Contemporary Society 3 s.h.
104-65 Recreation Leadership and Programming 4 s.h.
104-103 Leisure Research 3 s.h.
104-105 Introduction to Therapeutic Recreation 3 s.h.
104-108 Administration of Recreation 3 s.h.
104-191 Internship in Recreation 2 s.h.
104-198 Internship in Recreation 7 s.h.
104-199 Internship in Recreation 8 s.h.
2736 or 2737 First Aid and CPR 2 s.h.

Students also must take 9-15 semester hours of courses in one of the following areas of concentration:

Community Recreation

The community recreation concentration is designed for students preparing for positions as program administrators and recreationists, program, facilities, and administrative. It is oriented primarily to municipal, district, and co-operative recreation and park departments.

Required courses are:

104-110 Park and Recreation Fund Management 3 s.h.
121-124 Introduction to Planning and Design of Recreation and Park Areas and Facilities 3 s.h.
Three courses selected with advisor approval

Therapeutic Recreation

Therapeutic recreation prepares students to organize, plan, and lead recreation programs in treatment and non-treatment settings for people who are ill, handicapped, aged, disabled, and disadvantaged.

Required courses are:

104-121 Orientation to Special Populations vs. Therapeutic Recreation 4 s.h.
121-126 Role of Therapeutic Recreation in Rehabilitation 5 s.h.
Physiological Education, Teacher preparation Program • Liberal Arts 199

101:130 Health Promotion and Wellness for
College Students 3 a.h.
Problems of college students, stress, efforts to treat or prevent a long-term goal of health promotion, disease prevention, and showing the decline of treatment strategies to show individuals independence and lifelong education.

101:160 Computer Applications for Park and
Recreation Professionals 3 a.h.
Basic skills using Microsoft and the University's special applications for recreation management, administrative and research and eye designs as required and general understanding of office systems (e.g., processors, databases and networks, and recreation and research.

101:180 Independent Study 3 a.h.
Investigation of a problem to a special area of interest.

101:200 Problem in Urbanism 1 a.h.

101:290 Internship in Recreation 1 a.h.
Practicum with experienced 30% to 60% arranged to include direct leadership of program planning, administration and leadership. Contact the Department of Recreation.

101:390 Internship in Recreation 1 a.h.
Completion of 190.

Primarily for Graduates

124:120 Problems 1 a.h.
Credited as department head requirement.

124:139 Graduate Practicum 3 a.h.

124:131 Graduate Practicum 3 a.h.

124:294 Practicum in Therapeutic Recreation 3 a.h.
Practicum experiences, modalities of therapeutic recreation therapy, needs, recreation, computer science, and direct therapeutic recreation activities that contribute to clients' maximum recreational functioning. Element of Practicum required. 3 1/2 semester credits required.

124:298 Development of Therapeutic Recreation 3 a.h.
Initiation, evaluation, development of therapeutic recreation services for the cognizant person. Prerequisites: program evaluation provision, a practical knowledge of therapeutic recreation program. 6 1/2 semester credits required. 2 1/2 semester credits required.

124:329 Seminar: Administration of Recreation 3 a.h.
Problems of administration, supervision, and programming in recreation program.

124:330 Philosophy and Deeds in Recreation 3 a.h.
Historical and philosophical development of education, teaching and recreation, influencing program patterns, current issues, and education for future recreationists.

124:391 Theory and Methods in Social
Psychology of Human Behavior 3 a.h.

124:398 Recreation College Teaching 3 a.h.

124:403 Seminar: Ethics I 1 a.h.

124:402 Seminar: Ethics II 1 a.h.


Physical Education B.A. or B.S. with Teacher Certification

The following academic, activity, and
teacher certification courses are required.

Academic

126:219 Introduction to Physical Education 1 a.h.
126:219 Theory and Principles of
Fitness 1 a.h.
126:250 Laboratory in Teaching of
Physical Activities 1 a.h.
126:277 Teaching of Dance 1 a.h.
126:291 First Aid and CPR 1 a.h.
126:518 Human Anatomy 3 a.h.
126:519 Human Growth and Motor
Development 2 a.h.
126:520 Physiological-Social Dimensions of
Physical Activity 3 a.h.
126:521 Administration of Physical Education, and Athletics 2 a.h.
126:555 Physical Education for the Handicapped 2 a.h.
126:556 Motor Learning and Control 3 a.h.
126:557 Contemporary Issues of
Health Education 3 a.h.
126:558 History of Sport in the
United States 2 a.h.
126:559 Measurement and Evaluation in Physical Education 3 a.h.
21:550 Kinesiology or
21:551 Biomechanics of Physical Education 3 a.h.
21:556 Physiology of Exercise 3 a.h.
21:557 Exercise Physiology for
Preceptors 3 a.h.

Activity

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 exception tests for the courses marked

126:556 Field Sports (Flag football, Indoor sports) 1 a.h.
126:557 Soccer 1 a.h.
126:558 Basketball 1 a.h.
126:559 Basic Dance Skills 2 a.h.
126:566 Track and Field 1 a.h.
126:568 Swimming Clinic 1 a.h.
126:577 Tumbling and Apparatus 1 a.h.
126:588 Weight Training 1 a.h.
126:599 Coaches, Games and Tennis Handball 1 a.h.
126:670 Recreational Skills (archery, badminton, bowling, racquetball, table tennis) 1 a.h.

Teacher Certification

126:71 Human Growth and Motor Development 2 a.h.
126:72 Instructional Strategies and
Design in Physical Education 3 a.h.
126:73 Methods and Materials in
Elementary Physical Education 3 a.h.
126:74 Practicum Elementary School 3 a.h.
126:75 Educational Psychology and Measurement 3 a.h.
126:76 Introduction to
Microcomputing for Teachers 1 a.h.
126:79 Human Relations for the
Classroom Teacher 3 a.h.
126:70 Issues in Education 2 a.h.
126:746 Methods of Secondary 3 a.h.
126:787 Seminar: Curriculum and Instruction 3 a.h.
126:791 Observation and Laboratory Practice in the Secondary School 3 a.h.
126:792 Special Area Student Teaching 6 a.h.

Coaching Endorsement

The Iowa Department of Education requires
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. One of these is recommended:

126:33 Coaching of Football 2 a.h.
126:34 Coaching of Baseball 2 a.h.
126:35 Coaching of Track and Field Athletics 2 a.h.
126:36 Coaching of Basketball 2 a.h.
126:38 Coaching of Competitive Sports 2 a.h.
126:39 Coaching of Wrestling 2 a.h.

All of these are required:
126:38 Theory of Coaching 2 a.h.
126:55 Human Growth and Motor Development 2 a.h.
126:56 Administration of Physical Education and Athletics 2 a.h.

27:57 Athletic Training 7 a.h.
Health Endorsement
The full-fledged program has been approved by the Iowa Department of Education for certification to teach health. The following courses are required.

17.41 Introductory Nutrition 3 s.h.
18.68 Human Anatomy 3 s.h.
18.71 Human Growth and Motor Development 3 s.h.
20.142 Contemporary Issues of Health Education 3 s.h.
18.97 First Aid and CPR 2 s.h.
20.142 Contemporary Issues of Health Education 3 s.h.
20.143 First Aid and CPR 2 s.h.
30.112 Human Sexuality 3 s.h.
17.222 Materials and Methods in Family Life Education 3 s.h.
71.126 Drugs: Their Nature, Action, and Use 2 s.h.
46.56 Non-Prescription Drugs 2 s.h.
27.140 Exercise Physiology for Practitioners 3 s.h.
28.106 Physiology of Exercise 3 s.h.
31.163 Abnormal Psychology 3 s.h.
32.193 Suffering, Death, and Faith 2 s.h.
15.156 Administration and Management of School Programs 3 s.h.

Courses
18.104 Theory of Counseling 1 s.h.
18.121 and 18.123 Method and Materials of Teaching English, Social Studies, Science, or History 3 s.h.
18.50 Introduction to Physical Education 1 s.h.
20.211 Principles of Physical Education 1 s.h.
20.50 Laboratory in Teaching of Physical Activities 1 s.h.
19.580 Physical Education for Teachers 2 s.h.
19.762 Teaching of Dance 2 s.h.
19.763 Teaching of Swimming 3 s.h.
20.140 Exercise Physiology for Practitioners 3 s.h.
20.142 Contemporary Issues of Health Education 3 s.h.
18.97 First Aid and CPR 2 s.h.
18.98 Coordinating of First Aid and CPR 1 s.h.
18.143 Coordinating of First Aid and CPR 2 s.h.
18.144 Coordinating of First Aid and CPR 2 s.h.
46.56 Non-Prescription Drugs 2 s.h.
27.140 Exercise Physiology for Practitioners 3 s.h.
28.106 Physiology of Exercise 3 s.h.
31.163 Abnormal Psychology 3 s.h.
32.193 Suffering, Death, and Faith 2 s.h.
20.142 Contemporary Issues of Health Education 3 s.h.
20.143 First Aid and CPR 2 s.h.
20.142 Contemporary Issues of Health Education 3 s.h.
20.143 First Aid and CPR 2 s.h.
20.143 First Aid and CPR 2 s.h.
20.145 Exercise Physiology for Practitioners 3 s.h.
20.145 Exercise Physiology for Practitioners 3 s.h.
18.144 Coordinating of First Aid and CPR 2 s.h.
18.144 Coordinating of First Aid and CPR 2 s.h.
18.143 Coordinating of First Aid and CPR 2 s.h.
18.144 Coordinating of First Aid and CPR 2 s.h.
46.56 Non-Prescription Drugs 2 s.h.
27.140 Exercise Physiology for Practitioners 3 s.h.
28.106 Physiology of Exercise 3 s.h.
31.163 Abnormal Psychology 3 s.h.
32.193 Suffering, Death, and Faith 2 s.h.
20.142 Contemporary Issues of Health Education 3 s.h.
20.143 First Aid and CPR 2 s.h.
20.142 Contemporary Issues of Health Education 3 s.h.
20.143 First Aid and CPR 2 s.h.
20.142 Contemporary Issues of Health Education 3 s.h.
20.143 First Aid and CPR 2 s.h.
20.142 Contemporary Issues of Health Education 3 s.h.
20.143 First Aid and CPR 2 s.h.
Physical Education Program (Non-teaching)

Core Requirements

29.19 Introduction to Physical Education 1 s.h.
29.37 First Aid and CPR 3 s.h.
29.69 Theory and Principles of Weight Training 3 s.h.
28.81 Kinesiology 3 s.h.
28.83 Psych-Social Dimension of Physical Activity 3 s.h.
or
22.14 History of Sport in the United States 3 s.h.
28.97 Aerobics (optional) 6-12 s.h.
28.30 Exercise of Exercise 3 s.h.
28.114 Methods and Materials for Sport-Wellness Promotion 3 s.h.
28.113 Stress Management 2 s.h.
28.132 Administration of Sport-Wellness Programs 3 s.h.

Activity Requirements

All students specializing in fitness/wellness or sport management complete four classes: one class is sport, one dance activity, one racquet sport, one aquatic activity, one fitness activity, one individual activity, and two additional activities of their choice. Any or all of these requirements may be satisfied by making skill and knowledge tests for the sport or activity.

Fitness/Wellness

28.53 Yoga/Designs for Exercise Programs 2 s.h.
28.132-140 Contemporary Issues of Health Education 3 s.h.
28.94 Principles of Exercise 4 s.h.
22.01 Survey of Computing 3 s.h.
17.051 Introductory Nutrition 3 s.h.

Sport Management

28.14 Theory of Coaching 2 s.h.
28.155 Masses in Sport 3 s.h.
26.30 Spor and the Media 2 s.h.
22.01 Survey of Computing 3 s.h.
28.112 Communication and Public Relations 3 s.h.
28.113 Psychology and Professional Speaking 3 s.h.
28.105 Design and Production of Media for Instruction 2 s.h.

Minor in Physical Education

The minor in physical education requires at least 15 semester hours of credit at a minimum grade-point average of 2.00. Twelve of the 15 semester hours must be taken at the University of Iowa in advanced courses. Students may choose from the following:

28.80 Human Anatomy 4 s.h.
28.81 Psychosocial Dimension of Physical Activity 3 s.h.
28.106 Physiology of Exercise 3 s.h.
28.112 Administration of Sport-Wellness Programs 3 s.h.
28.106 History of Sport in the United States 2-3 s.h.

188.10-140 Contemporary Issues of Health Education 3 s.h.
27.007 Biomechanics of Physical Education 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 work. Honors students in physical education take 29.30 Honors Readings, complete a reading 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 at least a 3.25 graduate-point average at the beginning of the junior or senior year, when honor courses are taken. To qualify for the honors degree, students must maintain at least a 3.25 grade-point average through the remainder of their degree work.

Graduate Programs

This UI physical education department has been a pioneer in providing graduate physical education programs for women, especially at the doctoral level. It has received more than 400 master's degrees and more than 150 doctoral degrees during the past 30 years. It graduates have received distinguished service through teaching, coaching, research, administration, and other leadership roles in physical education, dance, and athletics. The department's proud heritage of producing leaders has been furthered by recent graduates, and it continues to encourage high aspirations of the young women and men who study.

The curriculum assumes previous education in the respective fields. A program is proposed individually with consideration given to the student's previous education and anticipated career goals. 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 in the Department of Physical Education and Sports Studies, but the minimum of the Division of Physical Education and the entire University are available in several areas. Work outside the department provides a broad view and an important element in the broad specialization of master's and doctoral candidates.

Internships are available in many areas and are required for students specializing in administration and coaching. The graduate student group is cosmopolitan and international.

Master of Arts

The M.A. degree is awarded on completion of at least 30 semester hours of graduate work including Thesis or 36 semester hours of course work without thesis. The curriculum leads to teaching, administration, coaching, recreation, or preparation for advanced degree work.

Core Requirements

Students must demonstrate competence in physiology of exercise and kinesiology. Competence may be demonstrated by completion of a course at the undergraduate or graduate level or by satisfactory performance on a written examination. The following courses are required:

28.205 Techniques of Research 3 s.h.
28.202 Seminar: Perspectives in Human Movement 2 s.h.
29.01 Thesis (for students on thesis option) 3 s.h.
4 analytics course 3 s.h.

The sport studies core consists of four areas: philosophy of sport, sport psychodynamics 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 fitness/wellness program may choose to select courses from only two areas. The following courses satisfy the sport studies core requirements:

28.245 Psychology of Sport 3 s.h.
28.257 Social Psychology and Sport 3 s.h.
28.248 Sociology of Sport 3 s.h.
28.137 Sociology of Women in Sport 3 s.h.
28.156 Minorities in Sport 3 s.h.
28.164 History of Sport in the United States 3 s.h.
28.174 Sport in Western Civilization, Greeks to Present

Program Options

M.A. students may elect a general sport studies curriculum or a specialization in administration of athletics or physical education, administration of fitness/wellness programs, teaching, education, psychodynamics of sport or sociology of sport. Students interested in other specializations may submit a course of study to the graduate committee for consideration.

In addition to the required courses listed above, students must take 8-10 core courses in their area of specialization as indicated below and electives selected in consultation with the advisor.

Administration of Physical Education and Athletics

28.106 Principles of Administration 3 s.h.
28.247 Principles of Administration 3 s.h.
28.306 Advanced Athletic Administration 3 s.h.
28.219 Administration in Physical Education 3 s.h.
Administration of Fitness/Wellness Programs
28:114 Principles of Exercise Testing and Prescription 4 s.h.
28:115 Stress Management 2 s.h.
28:132 administration of Sport/Wellness Programs 3 s.h.
28:165 Internships 2-3 s.h.
28:174 Physical Responses to Exercise and Training 3 s.h.
28:176 Advanced Exercise and Training 3 s.h.
28:131 Introduction to Computer Programming for Teachers 2-3 s.h.
28:165 Design and Production of Media for Instruction (Graphic Design and Video) 2 s.h.

Coaching
All students must have or earn a coaching endorsement.
28:102 Psychological Sport (Women in Sport) 2-3 s.h.
28:165 Internships 1-2 s.h.
28:160 Current Issues 2 s.h.
28:118 Advanced Coaching 2 s.h.

Sociology of Sport
28:155 Sociology of Women in Sport 3 s.h.
28:165 Internships 2-3 s.h.
28:165 Sport and the Media 2 s.h.
28:341 Seminar in Sociology of Sport 2 s.h.
28:48 A Cultural Analysis of Sport

Sport Psychology
28:113 Stress Management 2 s.h.
28:301 Seminar in Sport Psychology 3 s.h.
28:201 Selected Issues in Social Psychology and Physical Activity 3 s.h.
28:401 Social Psychology Electives 5 s.h.

Sport Studies
Note: In the general sport studies program, students 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:
28:201 Administration of Athletics, or Physical education, or Fitness/wellness Coaching
28:112 History of Sport
28:115 Philosophy of Sport
28:301 Sociology of Sport
28:302 Sport psychology

Doctor 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.

Prerequisites
Competence in the areas noted under the M.A. program also is required for doctoral program. Deficiencies in these areas must be remedied 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 with 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 3 semester hours as approved by the departmental graduate committee.

Required Courses
28:203 Research in Sport 0 s.h.
28:302 Internship Perspectives in Human Movement 2 s.h.
28:401 Thesis or:

Specialization
Students must complete a specialization of 30 semester hours, including dissertation; 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.

Comprehensive Examination
All doctoral students must pass a comprehensive examination focused on, but not necessarily limited to, their area of specialization. The examination may be oral. The examination is conducted according to the policies established by the departmental graduate committees and is taken on a date set by the student and his or her advisor. The program of study and dissertation topic must be filed with the university and the tool requirements must be met before the student can take the comprehensive examination.

Dissertation
All doctoral students are required in order to take a dissertation. A final examination is held with an appropriate committee.

Residency Requirement
Doctoral students must complete two semesters of at least 9 semester hours each in residence at The University of Iowa.

Faculty
Faculty members represent diverse backgrounds and specializations; their abilities and interests are complementary. All hold advanced degrees, several training educational backgrounds from abroad, and all are experienced teachers. Graduate faculty members have expertise in research and writing and are available to guide graduate students in their areas of specialization. Much student leadership positions and are frequently called upon for lectures, speeches, and research presentations.

Facilities
Gymnasiums, dance studio, special course rooms, and pro shop are used in the various programs in Halsey Hall, North Hall, the Fluid House, and the Recreation Building. A variety of fields for outdoor sports are available on campus. The proximity of the Iowa River makes canoeing instruction feasible in a regular class schedule. The archery range is located along the river in a rustic setting; outdoor fields and a track are available. The University golf course is used for some classes.

A research laboratory equipped for psychological, measurement, and motor learning research is available in the department, and laboratories dealing with virtually all aspects of physical education are available within the division. The division also houses computer terminals, and students may use facilities of the University’s Wing Computing Center for research. A physical education library is located in the Field House.

Courses

Physical Education and Sports Studies—Primarily for Undergraduates
28:106/28:106 Cooperative Education Internship 9 s.h.
28:115/28:115 NFL Applications in Physical Education 1 s.h.
28:116/28:116 NFL Applications in Physical Education 1 s.h.
28:117/28:117 NFL Applications in Physical Education 1 s.h.
28:118/28:118 NFL Applications in Physical Education 1 s.h.
28:119/28:119 NFL Applications in Physical Education 1 s.h.
28:120/28:120 NFL Applications in Physical Education 1 s.h.
28:121/28:121 NFL Applications in Physical Education 1 s.h.
28:122/28:122 NFL Applications in Physical Education 1 s.h.
28:123/28:123 NFL Applications in Physical Education 1 s.h.
28:124/28:124 NFL Applications in Physical Education 1 s.h.
28:125/28:125 NFL Applications in Physical Education 1 s.h.
28:126/28:126 NFL Applications in Physical Education 1 s.h.
28:127/28:127 NFL Applications in Physical Education 1 s.h.
28:128/28:128 NFL Applications in Physical Education 1 s.h.
28:129/28:129 NFL Applications in Physical Education 1 s.h.
28:130/28:130 NFL Applications in Physical Education 1 s.h.
28:131/28:131 NFL Applications in Physical Education 1 s.h.
28:132/28:132 NFL Applications in Physical Education 1 s.h.
28:133/28:133 NFL Applications in Physical Education 1 s.h.
28:134/28:134 NFL Applications in Physical Education 1 s.h.
28:135/28:135 NFL Applications in Physical Education 1 s.h.
28:136/28:136 NFL Applications in Physical Education 1 s.h.
28:137/28:137 NFL Applications in Physical Education 1 s.h.
28:138/28:138 NFL Applications in Physical Education 1 s.h.
28:139/28:139 NFL Applications in Physical Education 1 s.h.
28:140/28:140 NFL Applications in Physical Education 1 s.h.
28:141/28:141 NFL Applications in Physical Education 1 s.h.
28:142/28:142 NFL Applications in Physical Education 1 s.h.
28:143/28:143 NFL Applications in Physical Education 1 s.h.
28:144/28:144 NFL Applications in Physical Education 1 s.h.
28:145/28:145 NFL Applications in Physical Education 1 s.h.
28:146/28:146 NFL Applications in Physical Education 1 s.h.
28:147/28:147 NFL Applications in Physical Education 1 s.h.
28:148/28:148 NFL Applications in Physical Education 1 s.h.
28:149/28:149 NFL Applications in Physical Education 1 s.h.
28:150/28:150 NFL Applications in Physical Education 1 s.h.
28:151/28:151 NFL Applications in Physical Education 1 s.h.
28:152/28:152 NFL Applications in Physical Education 1 s.h.
28:153/28:153 NFL Applications in Physical Education 1 s.h.
28:154/28:154 NFL Applications in Physical Education 1 s.h.
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28:159/28:159 NFL Applications in Physical Education 1 s.h.
28:160/28:160 NFL Applications in Physical Education 1 s.h.
28:161/28:161 NFL Applications in Physical Education 1 s.h.
28:162/28:162 NFL Applications in Physical Education 1 s.h.
28:163/28:163 NFL Applications in Physical Education 1 s.h.
28:164/28:164 NFL Applications in Physical Education 1 s.h.
28:165/28:165 NFL Applications in Physical Education 1 s.h.
28:166/28:166 NFL Applications in Physical Education 1 s.h.
28:167/28:167 NFL Applications in Physical Education 1 s.h.
28:168/28:168 NFL Applications in Physical Education 1 s.h.
28:169/28:169 NFL Applications in Physical Education 1 s.h.
28:170/28:170 NFL Applications in Physical Education 1 s.h.
28:171/28:171 NFL Applications in Physical Education 1 s.h.
28:172/28:172 NFL Applications in Physical Education 1 s.h.
28:173/28:173 NFL Applications in Physical Education 1 s.h.
28:174/28:174 NFL Applications in Physical Education 1 s.h.
28:175/28:175 NFL Applications in Physical Education 1 s.h.
28:176/28:176 NFL Applications in Physical Education 1 s.h.
The Department of Physics and Astronomy provides comprehensive and rigorous instruction in all basic aspects of its subjects. It also provides research facilities and guidance for individual scholarly work at an advanced level in specialized specialties. The enrollment in the University typically is 3,000, each semester of the academic year and 200 students who complete all courses and advanced laboratories are taught by full-time faculty members. Faculty members also teach elementary courses and supervise associated laboratories taught by graduate students.

Beyond the introductory level, typical course enrollment is 50; there is ample opportunity for individual work. Special introductory courses are offered for majors in physics and astronomy and for others with special interest in these subjects. There are about 100 undergraduate majors—25 of whom are physics students and 90 graduate students in physics or astronomy.

About 50 percent of graduates with bachelor's degree pursue advanced study. Others find positions in secondary school teaching and in government and industrial laboratories. Some use their training as the basis for careers in other fields.

Graduates with M.S. or Ph.D. degrees in physics or astronomy have many opportunities for employment in universities, colleges, and research laboratories in government and industry.

Undergraduate Programs

The department offers the following programs in physics, Bachelor of Science and Bachelor of Arts degrees and an undergraduate major in the same programs in astronomy. In addition, a double major in physics and astronomy is offered. Each program is described below.

Bachelor of Science in Physics

The B.S. program provides preparation for graduate study in physics and related sciences, or for employment in research laboratories.

Required Courses

The following courses or their equivalents are required for the Bachelor of Science degree with a major in physics. Students must select Group 1 or Group 2.

**Group 1**

- 22M:45-46 Calculus I-II
- 22M:45-46 accelerated Calculus I-II
- 22M:47 Introduction to Linear Algebra
- 22M:48 Calculus III

**Group 2**

- 22M:45-46 Engineering Calculus I-II

The following courses or their equivalents are required for the Bachelor of Arts degree with a major in physics.

- 22M:45-46 Calculus I-II
- 22M:45-46 accelerated Calculus I-II
- 22M:47 Introduction to Linear Algebra
- 22M:48 Calculus III
- 22M:45-46 Engineering Calculus I-II

Other Required Courses

- 26L:12 College Physics
- 26L:13 Intermediate Physics
- 26L:14 Intermediate Mechanics
- 26L:15 Statistical Physics
- 26L:16 Electromagnetics
- 26L:17 Electricity and Magnetism
- 26L:18 Intermediate Laboratory (two semesters)

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 teacher certification.

Minor in Physics

A program of physics courses satisfying the 15 semester hours, with a minimum grade-point average of 2.00, is required for a minor by the College of Liberal Arts must include 12 semester hours of upper-level physics courses taken at The University of Iowa, including 26L:19 (Introduction to Linear Algebra and 26L:17) and all 100-level physics courses.

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 in advanced study in astrophysics, radio astronomy, or space astrophysics.

The following courses or their equivalents are required for the Bachelor of Science degree with a major in astronomy. Students must select Group 1 or Group 2.

**Required Courses**

**Group 1**

- 22M:55-56 Calculus I-II
- 22M:45-46 accelerated Calculus I-II
- 22M:47 Introduction to Linear Algebra
- 22M:48 Calculus III

**Group 2**

- 22M:55-56 Calculus I-II
- 22M:45-46 accelerated Calculus I-II
- 22M:49 Matrix Algebra for Engineers
- 22M:41 Differential Equations for Engineers
- 22M:42 Vector Calculus for Engineers

Other Required Courses

Students also must take the following:

- 26L:12 College Physics
- 26L:13 Intermediate Physics
- 26L:14 Intermediate Mechanics
- 26L:15 Statistical Physics
- 26L:16 Electromagnetics
- 26L:17 Electricity and Magnetism
- 26L:18 Intermediate Laboratory (two semesters)
Minor in Astronomy

A minor in astronomy requires 15 semester hours of astronomy courses with a minimum grade-point average of 2.00. The 15 semester hours should include 6 semester hours selected from the following:

25:115-116 Introduction to Astronomy I-II

An additional 6 semester hours of these courses or of 100-level physics courses are also required. These 12 semester hours must be taken at The University of Iowa.

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. Those interested in such a combination should consult with their adviser. For the requirements of the College of Liberal Arts, see the "College of Liberal Arts" section of the Catalog.

Honors

Junior and senior majors who are members of the College of Liberal Arts Honors Program may take 6-8 semester hours of 29:50 Astronomy Seminar and conduct an independent research project 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 research report (paper thesis) and describe the results of the research at a departmental seminar.

Graduate Programs

Two advanced degrees are offered in physics: the Master of Science—with either thesis or critical essay—and the Doctor of Philosophy. One is offered in astronomy: the Master of Science—with either thesis or critical essay. Students who want to pursue a career in astronomy beyond the M.S. level may qualify for a Ph.D. degree in physics with specialization in astronomy; the Master of Science degree is not prerequisite to the Ph.D. degree.

The Department of Physics and Astronomy participates in an M.S.-to-Ph.D. interdepartmental doctoral program with the Chemistry Department.

Each entering graduate student is assigned a faculty adviser, 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 the academic year; each year and must be taken by all first-year graduate students. After a student has selected a research specialty, the appropriate thesis or essay adviser then becomes the candidate's general adviser and the chair of the final dissertation committee.

Master of Science in Physics

The M.S. degree in physics is offered with either thesis- or critical essay. The degree may be terminal or for intermediate study toward a Ph.D. degree. 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. degree with thesis requires 30 semester hours of graduate work (300- or 400-level courses) and a thesis based on an original experimental or theoretical investigation by the candidate. No more than 6 of the minimum 30 semester hours may be for research (29:281 Research, Physics).

The program for the M.S. degree with a critical essay requires 36 semester hours of graduate work (300- or 400-level courses), an independent study of 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 (29:281 Individual Critical Study). Up to one-third of the graduate program may be in related scientific fields other than physics and mathematics—for example, chemistry, astronomy, geology, or engineering.

Candidates for either of the M.S. degree programs must have satisfactorily completed the following courses or their equivalents as undergraduates or graduate students:

25:115 Intermediate Mechanics

25:115 Intermediate Mathematical Physics

25:115 Intermediate Statistics

25:119-120 Introduction to Electromagnetism and Waves

25:132 Intermediate Laboratory

25:137 Astronomical Laboratory
Course requirements or their equivalents for undergraduate or graduates are:

29:115 Intermediate Mechanics 3 s.h.
29:116 Intermediate Quantum Mechanics 3 s.h.
29:117 Optics 3 s.h.
29:118 Classical Mechanics 3 s.h.
29:119-121 Introduction to Astrophysics I-III 9 s.h.
29:120-120 Electricity and Magnetism 6 s.h.
29:131 Advanced Laboratory 2 s.h.
29:137 Astronomical Laboratory 2 s.h.
29:172 Mathematical Methods of Physics 6 s.h.
29:191 Atomic Physics 3 s.h.
29:194 Plasma Physics 3 s.h.

Students who wish 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.

29:195 Plasma Physics 3 s.h.
29:202-203 Theoretical Astrophysics I-II 6 s.h.
29:254 Stellar Structure and Evolution 3 s.h.
29:258 Special Topics in Astrophysics 3 s.h.
29:260 Seminar: Astrophysics 2 s.h.

Doctor of Philosophy in Physics

The program of study for the Ph.D. degree with a specialization in physics is designed to allow the student to pursue work in both classical and quantum mechanical physics for all courses, either their specialized research to be in classical or a theoretical area. All candidates must take comprehensive examinations in their areas of specialization. In addition, each student must complete a research project that satisfies the following minimum requirements for the dissertation.

They must take at least 27 semester hours of 200-level courses in the department, including 29:258, 29:260, and seminars. The following minimum requirements are recommended for the comprehensive examinations.

29:191 Atomic Physics 3 s.h.
29:192 Intermediate Particles and Nuclear Physics 3 s.h.
29:204 Introduction to Solid State Physics 3 s.h.
29:214 Quantum Mechanics I 3 s.h.
29:215 Quantum Mechanics II 3 s.h.
29:255-256 Quantum Mechanics I-II 6 s.h.

Advanced mathematics, such as the theory of functions of a complex variable and vector and tensor analysis, is used freely in these courses. An introduction to these fields is given in 29:171-172 Mathematical Methods of Physics I-II. The selection of an advanced course that will depend on the noblest of the student's preparation for graduate work; the student’s choice of more advanced and specialized courses will depend on the direction in which their interests develop. No more than 32 of the maximum 72 semester hours may be in research and seminars.

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, with the approval of the research advisor, to a widely distributed, refereed scientific journal.

Financial Aid

Students qualified for graduate study are encouraged to apply for fellowships and assistantships. The requirements should be directed to the department chair.

Research and Facilities

The department has a large library and a number of well-equipped laboratories and observatories. Several YAC computers are available within the department and the associated facilities of the University's Computing Center are available for research by students and staff. Oscillographs and computers are available via telephone. The computer science department is fully equipped and offers skilled instrument makers and machine technicians. The department has several electron microscopes and microscopes. Electron microscopes are available for constructing equipment for satellites and spacecraft and for computerized detection and analysis of data.

A versatile S/M/S Van de Graaff accelerator, which has been modified for research up to 14 MeV, is used to studies of nuclear reactions and production of light and heavy elements. Experiments on fundamental thermodynamics, electrical, magnetic, and mechanical properties of metals, alloys, composites, and high-temperature superconductors are included in the experimental solid state phase program, as are surface studies of metals and semiconductors. Several experimental plasma devices, including a Q-machine, are used in studies of low-energy, low-energy, and high-energy effects in steady-state plasmas. State-of-the-art laser systems are available for high-resolution spectroscopic measurements and ultraviolet-pump probe studies of molecular systems. Collisional relaxation and nonlinear optical effects in atomic and molecular systems and semiconductor materials, and for plasma diagnostics.

Experimental research in elementary particle physics is carried out at Fermi National Accelerator Laboratory, Los Alamos National Laboratory, and the Stanford Linear Accelerator Center, ESRF in Germany, and other international laboratories. The present generation of high-energy experiments has been designed to probe both the strong nuclear force and the weak interactions.

The department is well-equipped for research in observational astrophysics. The primary optical instrument, a 24-inch reflector with a computer-controlled photoelectric, is used for stellar, planetary, and cometary research. Observations in galactic and extragalactic radioastronomy are carried out using an 18.3-meter parabolic reflector located at the U.S. National Radio Observatory near town, Utah. The radio telescopes in the U.S. Very Long Baseline Interferometry network. Current long-term research activities include studies of extragalactic radio sources and diffuse star. Students and faculty also conduct research programs using the Very Large Array, the National Radio Observatory, the Kitt Peak National Observatory, the ANSAR Observatory, the Infrared Telescope Facility, the International Ultraviolet Explorer, and the Very Long Baseline Interferometry network.

Active theoretical research is carried on in astrophysics, atomic, molecular, and optical physics, plasma physics, magnetohydrodynamics, nuclear physics, elementary particle physics, and theoretical physics. Much of the numerical work for this research is performed on high-speed computers and a supercomputer. The physics of light is the focus of the exchange of ideas between mathematics and physics.

Courses

Prerequisites and corequisites are specified as a guide to current grades by the instructor. Students may not repeat an equivalent course for credit at the graduate level if they have completed a higher level course for which the equivalent course is a prerequisite. In a prerequisite course, 26:3, 29:3, 29:11-12, 29:17-18, 29:25, and 29:26-27 are accepted toward the degree of the College of Arts and Sciences. The following courses are available in the department of the physical sciences.

Physics—Primarily for Undergraduates

20000-20999 University Physics I-II 12 s.h.
22000-22999 Mechanics and Physics of Materials 12 s.h.
23000-23999 Inorganic Chemistry and Physics of the Earth 12 s.h.
24000-24999 Quantum Mechanics and Principles of Chemistry and Physics of the Earth 12 s.h.
25000-25999 Advanced Topics in Physics and Chemistry 12 s.h.
26000-26999 Advanced Topics in Physics and Chemistry 12 s.h.
27000-27999 Advanced Topics in Physics and Chemistry 12 s.h.
28000-28999 Advanced Topics in Physics and Chemistry 12 s.h.
29000-29999 Advanced Topics in Physics and Chemistry 12 s.h.
30000-30999 Advanced Topics in Physics and Chemistry 12 s.h.
31000-31999 Advanced Topics in Physics and Chemistry 12 s.h.
32000-32999 Advanced Topics in Physics and Chemistry 12 s.h.
33000-33999 Advanced Topics in Physics and Chemistry 12 s.h.
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35000-35999 Advanced Topics in Physics and Chemistry 12 s.h.
36000-36999 Advanced Topics in Physics and Chemistry 12 s.h.
37000-37999 Advanced Topics in Physics and Chemistry 12 s.h.
38000-38999 Advanced Topics in Physics and Chemistry 12 s.h.
39000-39999 Advanced Topics in Physics and Chemistry 12 s.h.
40000-40999 Advanced Topics in Physics and Chemistry 12 s.h.
41000-41999 Advanced Topics in Physics and Chemistry 12 s.h.
42000-42999 Advanced Topics in Physics and Chemistry 12 s.h.
43000-43999 Advanced Topics in Physics and Chemistry 12 s.h.
44000-44999 Advanced Topics in Physics and Chemistry 12 s.h.
45000-45999 Advanced Topics in Physics and Chemistry 12 s.h.
Graduate Programs

At the graduate level, the department has a program leading to a Doctor of Philosophy in political science for students planning academic careers. The Master of Arts in public affairs is a nongrained program designed for students planning careers in government service, public affairs, or in industry and community colleges. The general M.A. degree usually is pursued by persons whose ultimate degree objective is the Ph.D.

Master of Arts in Public Affairs

Completion of this degree requires a minimum of 45 semester hours of credit. Of these, 24 are earned in core courses required of all students, and 12 are earned in electives chosen individually to fulfill special interests. Students are encouraged to use all 36 elective hours in developing applied knowledge and skills in a particular subfield.

The degree does not require a final thesis. In the last semester of course work, students take a written examination that tests both core and specialized knowledge. Students must pass the comprehensive examination as well as complete all course work with at least a 3.0 grade-point average. All degree requirements must be met by the end of the semester in which the comprehensive examination is taken.

During the final semester, students usually gain practical experience in administrative and policy work through internships in governmental or other public institutions. The internship is jointly supervised by the director of the Master of Arts in Public Affairs and by the relevant agency head. At the same time, students may submit a thesis report to the M.A. program director.

Students who do not participate in internships may complete practice—applied seminars focusing on areas such as policy studies or public affairs teaching—is their last term.

Master of Arts with Thesis

Except for the M.A. in public affairs and the M.A. M.A. under a joint program with the College of Law (see the "College of Law" section of the Coursey), the department usually offers the master's degree only as a preliminary step toward the Ph.D.

Students obtain the M.A. degree by completing at least 36 semester hours with a grade point average of at least 3.25, submitting a thesis, and passing a final oral examination. At least 30 semester hours of these credits must be at the graduate level. The final oral examination covers both thesis and course work.

Master of Arts without Thesis

If the evaluation committee convened at the end of the student's fourth year of course work finds that a student's work provides sufficient evidence of the student's mastery of courses, the department may recommend that the student be allowed to proceed with a dissertation or to complete a Ph.D. dissertation in the master's thesis. The requirements for the M.A. without thesis include completion of at least 36 semester hours of graduate work with a grade point average of at least 3.25 and review of the student's record by a final examination committee, which may waive the final oral examination.

The same requirements apply where a five-year evaluation committee finds that a student's work is inadequate for completing a dissertation. The department may then recommend that the student be permitted to seek the Master's degree as a terminal degree.

Doctor of Philosophy

The Ph.D. program in political science is designed to prepare students for research, teaching, and scholarly endeavors in academic settings and private or public governmental institutions. It produces graduates who are well-equipped to contribute to the study of politics, familiar with fundamental knowledge and complex processes of political life, and capable of making contributions to the discipline of political science and to society.

About two Ph.D. students are admitted each year. Students are expected to develop research proposals often collaborating with faculty members in research and public affairs. Graduates students know one another and enjoy supportive and congenial working conditions.

Curriculum

Doctoral study usually lasts four years. In the first year, the curriculum for all graduate students covers core courses equally divided between substance and methodology. Emphasis is on basic research methods—including quantitative methods—that today's political scientist usually thorough understanding. Special attention is given to research design, documentation of observations, analysis and interpretation of data, research, and social science software. Most first-year students complete this training with service as research fellow in investigative projects directed by the faculty.

The second and third years of study are spent in small seminars with focused, substantive topics. Papers written for these seminars might be submitted to journals or presented at professional meetings. Students must take their comprehensive examinations by the end of the third year.

The fourth year is spent on dissertation research and writing. Students engaged in basic research and data gathering usually require a fifth year to complete the dissertation.

Five fields of study are available: American politics, comparative politics, international relations, political ideology, and those who wish to go beyond the basic methods of political science. Research methods. Each student chooses three fields of study for the comprehensive examination.

A comprehensive list of departmental requirements is set forth in the Graduate Bulletin in Political Science. For general graduate admission and degree requirements, see the "Graduate College" section of the Catalog.

Courses

3100 Cooperative Educational Training 3 a.h.
3110 Introduction to American Politics 3 a.h.
3115 Introduction to the Scientific Method and the Use of Research Data 3 a.h.
3121 Introduction to Political Theory and Methodology 3 a.h.
3122 Introduction to the Politics of the Industrial Democracy 3 a.h.
3124 Introduction to the Politics of Consumer Society 3 a.h.
3125 Introduction to the Politics of the Third World 3 a.h.
3126 Introduction to Political Behavior 3 a.h.
3127 Introduction to the Politics of International Relations 3 a.h.
3128 Introduction to the Work of Contemporary Political Theorists 3 a.h.
3130 Introduction to American Foreign Policy 3 a.h.
3131 Introduction to Comparative Politics 3 a.h.
policy, your world political, special attention to point-biserial correlation in the United States, Europe, human rights, and the developing countries.

15.200 Politics in International Politics 2-4 hrs.

15.391 South Asian Political Economy 2-4 hrs.

15.391A Internship in Public Policy 2-4 hrs.

15.392 Practicum in Public Policy 2-4 hrs.

15.393A Internship in Policy 2-4 hrs.

15.393B Practicum in Policy 2-4 hrs.

15.394A Research Topics 2-4 hrs.

15.395A Undergraduate Faculty member required.

15.395B Undergraduate faculty member required.

15.395C Undergraduate faculty member required.

15.395D Undergraduate faculty member required.

See "Spanish and Portuguese."
Graduate Program

The graduate program in psychology is designed primarily for students seeking the Ph.D. degree. Except in very special circumstances, applications are considered only for that degree. For students entering without previous graduate work, it is a four-year program, those entering with previous graduate training may take four to six 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 control investigation of basic and applied problems, and determined to make contributions in the discipline of psychology and to society.

Graduate training is organized in four broad training areas: clinical psychology, experimental psychology, personality psychology, and social psychology. Each entering student is expected to identify one of these as his or her primary area and to follow a program that develops thorough understanding of the substantive material and methods of investigation central to that subdiscipline. While pursuing specialty training, all students must meet course requirements in statistics, research methods, learning, and several content areas other than their primary training area.

The department has three areas of research emphasis: clinic training area and combine methodological expertise of faculty and students with special resources within and outside of the department; cognitive psychology; developmental psychology, and health psychology. Students who have particular interests in any of these areas may apply to any one of the training areas and indicate a focus in a designated research area. However, students are not required to concentrate their research interest in one of these areas. Many faculty members have rewarding and collaborative research projects that contribute to one or more of the research areas. Consequently, students can easily complete the requirements of a training area while developing research knowledge and skills within the boundaries 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 mixing course work in two areas, and research supervision or co-supervision by faculty members from both areas. The department also is prepared to help students develop additional expertise in any of the following interest areas: human factors, aging, experimental and consumer behavior, communications, and cognitive science. Preparation in one of these interest areas involves some special advanced research within the department, directed 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. degree requires satisfactory completion of at least 72 semester hours of graduate work in psychology, including at least 32 semester hours in the department. All students must satisfy, through use of several options, requirements as established and research methods, and in learning. A course is the history and (or) the philosophy of psychology is strongly encouraged. Students also are expected to take sufficient course work outside the primary training area to develop a reasonable breadth of 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 training areas and depends on the individual student’s background and interests.

During each of the first three semesters, graduate students take two courses. The courses, for example, a general core course in a primary training area, and a core/core elective. Students also become familiar with the literature, research methodologies and important research projects in one or more areas through engagement in individually supervised research projects. This research project, which may be at one faculty member’s laboratory or a joint project, is designed to help students develop, by early in the second year, a reasonably detailed plan for the master-project research project.

By the end of the second year—typically early in the third year—students are expected to have completed their master’s project and to have defended their Thesis Defense. In Ph.D. candidacy is based on a faculty-wide review of the student a mid-year portfolio for the master’s degree, in course work, and in locating, reading, writing, and teaching.

During the third year, students continue selected course work in the training and interest areas, develop a prospectus for the dissertation, and prepare for the comprehensive examination. This examination consists of a set of questions that test the student’s knowledge and ability in at least 60% of the following areas:

1. Biological Aspects of Behavior
2. Psychological Aspects of Behavior
3. Principles of Developmental Psychology
4. Principles of Experimental Psychology
5. Principles of Social Psychology
6. Cognition and Language
7. Cognition and Learning
8. Cognition and Memory
9. Cognition and Attention
10. Social Cognition
11. Social Psychology
12. Social Psychology
13. Social Psychology
14. Social Psychology
15. Social Psychology
16. Social Psychology
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59. Social Psychology
60. Social Psychology
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. degree with thesis is a required step for students preparing for the Ph.D. This degree requires satisfactory completion of at least 30 semester hours of graduate coursework in psychology, 18 of which must be taken at The University of Iowa. The coursework must include the statistics sequence, a learning course, and at least one course outside the primary specialty area. Students should consult an acceptable scholarly thesis topic conduct a successful oral defense of the thesis.

**Master of Arts without Thesis**

The M.A. degree without thesis is an option available to those few students who intend to work in their department after four semesters. This degree requires satisfactory completion of at least 30 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 learning course, and at least one course outside the primary area. Students must perform successfully on 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 a scientific approach to the study of psychopathology. It is designed for students who are interested in pursuing an academic career, whether through scholarly understanding of clinical phenomena and acquiring research skills necessary to the systematic investigation of such phenomena. Recognizing that students must become familiar with clinical material and competent in the application of clinical skills, the department currently integrates practicum experience in the Carl I. Sesmaeber Psychology Clinic with course work and supervised research experience.

Students in the clinical program may develop special competence in areas such as psychopharmacology, personality, affective disorders, behavioral and cognitive therapies, child psychology, and clinical health psychology. Faculty members collaborate with colleagues in departments such as otorhinolaryngology, psychiatry, pediatrics, anesthesiology, and surgery, and from other units, such as the Coor for Health Services Research, the School of Social Work and the Gerontology Program, and nearby area education agencies. Particular emphasis is placed on cooperation of each collaboration, behavioral medicine and aging are interest areas in which a number of clinical faculty members are prepared to offer research supervision. Within the department, joint graduate programs combining a clinical specialty with another training area have been established and are available to students with strong interests in two specialty areas.

Advanced students have opportunities to gain additional practice 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 psychologist" on their official transcript must satisfactorily complete a one-year internship at an approved agency before receiving the doctoral degree. The internship ordinarily begins after completion of all course work and internship, if not all, of the dissertation project.

**Human Experimental Psychology**

Students affiliated with the human experimental program concentrate their training in the broad areas of perception and cognition, information processing, and learning. Current faculty members specialize in the following areas: learning, memory, and problem solving in children; language and cognition; mathematical psychology; psychophysical scaling; and signal detection theory; cognitive effects of drugs; human judgment and decision making; information processing; visual perception; and psychophysiology.

Faculty members in the human experimental area are prepared to help students gain additional expertise in a variety of interest areas, including human factors, communications, aging and cognitive and organizational behavior. Collaborative research is under way with faculty members from the College of Business Administration, the Center for Health Services Research, and several departments, including neurology, industrial psychology, health psychology, and audiology, and aesthetics.

**Neuroscience and Behavior**

The focus of the program in neuroscience and behavior is on the analysis of learning and motivation, primarily in nonhuman animals, through the application of behavioral and biomedical principles. Special faculty strengths are in classical and operant conditioning, comparative psychology, motivation, neuroendocrinology, neurochemistry, and neuroanatomy. Students in this program have the opportunity to learn state-of-the-art techniques in computer-controlled experimental manipulation and electronic instrumentation, and modern analytic and laboratory techniques in neuroendocrinology, neuroanatomy, and biochemical analysis.

Faculty members in the neuroscience and behavior area interact extensively with colleagues from a number of basic science departments in the College of Medicine. These collaborative activities provide excellent research and training opportunities for students interested in emerging interdisciplinary fields such as behavioral medicine and neuroscience.

**Social Psychology**

The social psychology program offers a variety of approaches in social psychology. Students develop some familiarity with all of the approaches but may focus their graduate training in any of several subfields, such as attitudes, social cognition, attribution, social influences on behavior, close relationships, the social psychology of groups, and the study of social psychopathology's 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 factors, and behavioral medicine. Such preparation, which ordinarily will involve selected coursework outside the department (e.g., in the College of Business Administration or the Department of Communication Sciences), and participation in special research projects, will broaden students' employment prospects.

**Admission**

Since the graduate program in psychology is designed primarily for students seeking the Ph.D. degree, all applicants are considered on the basis of their potential for advanced work only through the M.A. level. It may be advisable to pursue a joint graduate program involving psychology and another discipline or profession. A person interested in such a program should contact the department before filing an application.

The deadline for applications is February 1. For additional information, the Graduate Record Examination (GRE) General Test should be taken in October, certainly no later than in December. The subject test in psychology is not required. Applicants may be admitted at any time, but are considered only once each year between February 1 and March 15 for admission the following fall. Admission is based on a composite consideration of prior academic performance, letters of recommendation, scores on the verbal, quantitative, and analytic sections of the GRE General Test, and the applicant's statement about background and purpose. Initial review of admission materials is done by faculty members in the applicant's primary training area.

An undergraduate major in psychology—including a laboratory course in methods, a course in statistics, and additional work in the natural sciences—
The University's Weeg Computing Center currently operates an IBM 4341, five PDP-11, and a VAX 6460. Students and faculty have ready access to these systems through terminals located in Snellgrove Hall. Microcomputers of varying kinds are widely available. Office space for graduate students and faculty is provided in Snellgrove Hall. The psychology branch of the University's main library, with major collections in all areas, is conveniently located in the west wing of Snellgrove Hall.

The research and teaching activities of the department greatly benefit from the facilities and endowments of the University and its local agencies, including The University of Iowa Hospitals and Clinics, the Psychiatric Hospital, the Veterans Administration Medical Center, the University Counseling Service, the Child Development Clinic, the Wende Johnson School and Henry Ford Clinic, the Center for Health Services Research, and the School of Social Work, genogram project.

Courses

For Undergraduates

31:1 or 31:3 is equivalent to prerequisite to all other psychology courses. Only one of these may be taken for credit.

31:4, 31:12, 31:14, 31:16, 31:17, and 31:19 are open to students who have satisfactorily completed an introductory psychology course (31:1 or equivalent).

31:6 Elementary Psychology

34:3 h.

Survey of psychology and its relation to science. Subject matter includes the nature of psychological science and its relation to other sciences, the methods of psychological research, and the role of psychological science in various aspects of everyday life.

31:8 General Psychology

4 h.

Introduction to psychology, as an experimental science, with emphasis on methods of research. Students are required to become familiar with various methods of psychological testing and other subtopics in psychology. Objectives of the course include the study of scientific method, analysis of data, and research in psychology.

31:12 The Human Behavior in Social Relations

3 h.

Survey of the major theories of social relations in the field of psychology, with emphasis on the nature of social relations in the development of the individual and the social psychology of groups.

31:14 Introduction to Child Psychology

3 h.

Survey of current social research and psychoanalytic approach in psychology. Contents may include topics in child development, social psychology, social perception, social cognition, and group processes. Emphasis on research in the area of child development.

31:16 Introduction to Social Psychology

3 h.

Survey of current research and psychoanalytic approach in social psychology. Contents may include topics in social perception, social cognition, and group processes. Emphasis on research in the area of social psychology.
3116 Language Processing 3.96
   Formal linguistic procedures and the content of cognitive processes, speech perception, speech, and word production of language acquisition. Same as 3016. 486.32 or 3016.
3117 Cognitive Development of Children 3.96
   Developmental research and theory concerning children's information processing, verbal concepts, and memory. 481.31 or 3174.
3118 Psychology of Sex Differences 3.96
   Topics in the nature of sex differences in intelligence, potential causes of these differences, and the influence of social and cultural factors on differences in achievement. Emphasis on experimental literature in psychology. 481.31 or 3174.
3119 Memory and Cognition 3.96
   Introduction to contemporary psychological theory and research in memory, acquisition processes, and related topics in linguistics. 481.31 or 3174.
3120 Experimental Psychology I 3.96
   Logic and experimentation as essential methods in analyzing behavior. Description of experimental procedures in major areas of experimental psychology. Prerequisites: Psychology 3116 or 3174.
3121 Experimental Psychology II 4.96
   Laboratory experience is an integral aspect of this course. Each week students meet in groups and report in a particular aspect of behavior, their approach, method, and experimental psychological phenomena. May be repeated. Prerequisites: Psychology 3116 or 3174; same weeks may have additional prerequisites.
3122 Theory of Learning 3.96
   Theoretical and experimental bases of learning and human behavior. 481.31 or 3174.
3123 Psychophysiological Psychology and Physiology 3.96
   Introduction to basic concepts and techniques in the measurement and the application to the analysis of sensory processes, animal behavior, motivation, and learning. 481.31 or 3174.
3124 Psychology of Dependence Behavior 3.96
   Behavior that is maintained or modulated by reinforcement and response-contingent systemic reinforcers. Emphasizes laboratory research conducted under controlled conditions. 481.31 or 3174.
3125 Psychology of Addictive Behavior 3.96
   Behavioral, motivational, and social factors that influence addictive behavior. Emphasis on experimental and clinical psychology. 481.31 or 3174.
3126 Psychology of Titration 3.96
   Problem solving, measuring, arranging, and controlling both animal and human behavior, with emphasis on the functional relationship between stimuli and responses. Emphasis on techniques of behavior analysis. Required: 3125 or 3126.
4127 Addictions 3.96
   A course in the field of addiction, primarily drug addiction, emphasizing both etiology and treatment of alcoholism and drug addiction. 481.31 or 3174.
3128 Psychobiology of Feeding 3.96
   The biological bases of feeding are prenoted in the experimenters. A study of the nature and mechanisms of feeding behavior. 481.31 or 3174.
3129 Psychology of Pain and Analgesia 3.96
   Physiological psychology, psychology and physiography of brain structures, and neural mechanisms governing the perception of pain and the production of analgesia, stimulant and depressant state tasks as they relate to the psychology of pain and analgesia. 481.31 or 3174.
3131 Conceptual Theory 3.96
   Theories in the experimental analysis of equipment and the relationship between conceptual theory and psychological processes with contemporary applications. Developmental and experimental conditioning models and environmental influences. 481.31 or 3174.
3132 Cate, Power, and Research 3.96
   Consideration of philosophical, psychological, and technical issues challenging the individual researcher in a complex society. 481.31 or 3174.
3134 Psychology of Interpersonal Relations 3.96
   Study of psychological theories and findings on how people relate to others. Focus on cooperation, altruism, empathy, perceived similarity and comparability, social influence, social comparison, and social relations. Prerequisites: Psychology 3134 or 3174.
3135 Introduction to Statistics in Psychology 3.96
   Statistical and research methods are presented in terms of their applications to real-world psychological problems. Same as Psychology 3135 or 3174.
3136 Intermediate Statistics in Psychology 4.96
   Planning and analysis of research in psychology; introduction to the design and analysis of experiments. Emphasis on research design, data collection, and parameter estimation. Basic concepts and techniques. Core course content analyzed in other advanced biostatistical techniques. May be repeated. Prerequisites: Psychology 3135 or 3174 or equivalent.
3137 Introduction to Psychological Measurement 3.96
   Understanding the basic concepts and techniques of psychological and psychometric measurement: normal and nonnormal psychological phenomena such as signal detection theory, unidimensional and multidimensional utility, and classical and modern interval scale theory. Emphasis on 3135 or 3174 or equivalent course. Required: 3135 or 3174.
3138 Psychology of Aging 3.96
   Overview of psychological aspects of the aging process. Review of developmental psychology and aging, intellectual performance, social behavior, personality, memory, and biological senescence. Required: 3135 or 3174.
3139 Psychology of Behavioral Medicine 3.96
   Behavioral and physiological mechanisms underlying health behavior and illness. Required: 3135 or 3174.
3136 Statistical Factor Engineering 3.96
   Design of cause-effect systems and development of techniques with emphasis on applying principles of factor analysis, factor models, and matrix models to psychological data and experimental design. Required: 3135 or 3174.
3137 Psychology of Management 3.96
   Theories of management and human behavior in business organizations. Emphasis on techniques of communication, group processes. Required: 3135 or 3174.
3138 Personality 3.96
   Theories of personality from classical to humanistic, with particular emphasis on modern research techniques. Required: 3135 or 3174.
3139 Abnormal Psychology 3.96
   Analysis of the major types of mental disorders, personality disorders, and somatic illness. Emphasis on the development of human and psychological treatment. Required: 3135 or 3174.
3140 Depression and Mania 3.96
   Theories of the symptoms, etiologies, and neurotic and psychotic mechanisms of depression and mania. Required: 3135 or 3174.
3141 Behavioral Psychotherapy 3.96
   Review of major schools of psychotherapy: behaviorism, logical behaviorism, and behavioral approaches in treatment of depression and mania. Required: 3135 or 3174.
3142 Behavioral Methods 3.96
   Basic approaches to the evaluation of clinically relevant behavior therapy principles and techniques. Required: 3135 or 3174.
3171 Behavioral Medicine 3.96
   Basic knowledge of behavioral science in physical health and wellness, the relationship between personality characteristics and health behavior, and the behavioral response to illness. Required: 3135 or 3174.
3172 Medical Psychology 3.96
   May be repeated for credit under new work or new applications in an approved research project at the senior or graduate level. May be repeated. 3135 or 3174.
3173 Research Practicum in Psychology 4.96
   Group directed practicum in behavior analysis designed to develop skills in designing, conducting, analyzing, interpreting, and writing up. May be repeated. Open only to psychology majors. Consent of instructor required.
3174 Special Readings and Projects 4.96
   Open only to intégration majors in philosophy. Open only to psychology majors. Consent of instructor required.
3175 Research Practicum in Psychology 4.96
   Group directed practicum in behavior analysis designed to develop skills in designing, conducting, analyzing, interpreting, and writing up. May be repeated. Open only to psychology majors. Consent of instructor required.
3176 Research Practicum in Psychology 4.96
   Group directed practicum in behavior analysis designed to develop skills in designing, conducting, analyzing, interpreting, and writing up. May be repeated. Open only to psychology majors. Consent of instructor required.
3177 Research Practicum in Psychology 4.96
   Group directed practicum in behavior analysis designed to develop skills in designing, conducting, analyzing, interpreting, and writing up. May be repeated. Open only to psychology majors. Consent of instructor required.
3178 Research Practicum in Psychology 4.96
   Group directed practicum in behavior analysis designed to develop skills in designing, conducting, analyzing, interpreting, and writing up. May be repeated. Open only to psychology majors. Consent of instructor required.
3179 Research Practicum in Psychology 4.96
   Group directed practicum in behavior analysis designed to develop skills in designing, conducting, analyzing, interpreting, and writing up. May be repeated. Open only to psychology majors. Consent of instructor required.
3180 Social Cognition 3.96
   Theories and research methods of social cognition, particularly social perception and social interaction. Required: 3135 or 3174.
3181 Interpersonal Behavior 3.96
   A course in the study of interpersonal behavior. Emphasis on theoretical and empirical methods of interpersonal psychology. 481.31 or 3174.
3182 Human Communication 3.96
   Theories of the process of communication; factors in interpersonal communication. Required: 3135 or 3174.
3183 Research in Communication 3.96
   A course in the study of interpersonal behavior. Emphasis on theoretical and empirical methods of interpersonal psychology. 481.31 or 3174.
3184 Social Cognition 3.96
   Theories and research methods of social cognition, particularly social perception and social interaction. Required: 3135 or 3174.
3185 Social Psychology 3.96
   Theories and empirical methods of interpersonal psychology. Emphasis on interpersonal psychology. Required: 3135 or 3174.
3186 Social Psychology 3.96
   A course in the study of interpersonal behavior. Emphasis on theoretical and empirical methods of interpersonal psychology. 481.31 or 3174.
3187 Social Psychology 3.96
   Theories and empirical methods of interpersonal psychology. Emphasis on interpersonal psychology. Required: 3135 or 3174.
3188 Social Psychology 3.96
   A course in the study of interpersonal behavior. Emphasis on theoretical and empirical methods of interpersonal psychology. 481.31 or 3174.
3189 Social Psychology 3.96
   Theories and empirical methods of interpersonal psychology. Emphasis on interpersonal psychology. Required: 3135 or 3174.
3190 Social Psychology 3.96
   A course in the study of interpersonal behavior. Emphasis on theoretical and empirical methods of interpersonal psychology. 481.31 or 3174.
Honor}

The honors major is for students of superior ability who want to pursue individual research. To undertake the honors major in religion, the student must be admitted to the College of Liberal Arts Honors Program by the director of that program and the director of the honors program in the School of Religion.

Application should be made by the beginning of the junior year but may be made earlier.

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 22100 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 tracks, thesis and nonthesis, toward the M.A. In both tracks, students must earn a minimum of 36 semester hours in the School of Religion. Most of these hours must be earned in courses that fall into one of the areas in accordance with the Hebrew Bible and its early interpretations; Judaism and Christianity in the Greco-Roman world; history, religion, and religion thought in the West; theology and ethics; and history of Asian religions. Students in the thesis program take at least one seminar in this area and may opt for the thesis for all of the seminar hours required. Students in the nonthesis 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 requirements for languages and other research tools.

All students are required to take a written M.A. examination that tests competence in the area of concentration.

Master of Arts in Religion and Health

Study of the role of religion in illness and health requires a combination of theoretical and clinical investigation. The University of Iowa Hospitals and Clinics provides setting for research and training in this program.

Students may choose a thesis or nonthesis program. In either, they are required to earn 26 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 322.44 Clinical Study of Religion or present equivalent experience. The program also includes required courses in religion and personality and at least four courses (for a minimum of 16 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, religion, and religion thought in the West; theology and ethics; and history of Asian religions.

The student's advisory committee may require languages or other research tools.

All students take as M.A. examination.

Doctor of Philosophy

The broad-based Ph.D. program places a high priority on the academic study of religion in its broad intellectual and cultural contexts. The program is structured to facilitate development of the research skills necessary to undertake effective teaching and to foster the generation of new knowledge. As teaching assistants, Ph.D. students have maximal opportunity to develop teaching skills.

Candidates for the Ph.D. must complete a minimum of 72 semester hours of graduate coursework, of which 6 semester hours of religion courses are in 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, religion, and religion thought in the West, theology and ethics, and history of Asian religions.

No later than the middle of the student's fourth year of graduate study, the faculty advises the student to complete the written examination for the Ph.D. degree. The student must take the introductory colloquium designed to orient new graduate students to basic trends in the academic study of religion; show evidence of the ability to write scholarly papers; judgment in based on a series of papers, one for each course of intensive study, which the program faculty has previously judged to represent satisfactory progress toward the degree; have a cumulative grade-point average of at least 3.25; make satisfactory progress in the language requirements appropriate to his or her field; and file a plan of study that lists course work and language and research tools in
Traditionally at Iowa, many students have combined their study of the Russian language with a double major in economics, global studies, history, journalism and mass communication, or political science. They have been better equipped to gain employment in the Russian-Slavic area, and have enjoyed an enhanced knowledge of and understanding of the culture, history, peoples, and politics of the Soviet Union.

Through the University's new Bachelor of Arts degree program in Soviet and East European studies, interested students can now focus their undergraduate training precisely on this region of the world. For more information on this complementary B.A. program, see "Soviet and East European Studies" in this section of the Catalog.

With the increasing importance of Russian as a language of science and commerce, many students find that training in the language is an important start to careers in the natural and physical sciences, engineering, medicine, and business. Students of journalism, library science, and the social and military sciences also have strengthened their career preparation through the study of Russian. Some students major in Russian before going into law, international relations, or another profession; others study Russian as preparation for graduate work in Slavic languages and literatures, comparative literature, English, or other humanistic disciplines.

Russian majors with the B.A. and the required education courses occasionally seek teaching careers in secondary schools (see the relevant teacher-preparation programs in the "College of Education" section of the Catalog). A number of government agencies annually recruit job candidates who have advanced training in Russian; these agencies give preference to applicants who couple strong language proficiency with a broad background in area studies. Students who develop an exceptional knowledge of the Russian language may pursue careers in literary and technical translation and interpretation.

Undergraduate Program

Students working toward the Bachelor of Arts in Russian must complete the College of Liberal Arts degree requirements (see the "College of Arts" section of the Catalog) and earn at least 28 semester hours of credit in advanced Russian courses. Required courses are:

41:109 Intensive Conversation 3 s.h.
41:110 Intensive Conversation 3 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 Translation 1800-1880 3 s.h.
41:152 Russian Literature in Translation 1889-1917 3 s.h.
41:155 Tolstoy and Dostoevsky 3 s.h.
41:181 Soviet Literature since Stalin 3 s.h.
41:185 Russian Culture 3 s.h.
41:186 Soviet Union Today 3 s.h.
41:191 Russian Civilization 3 s.h.

Students majoring in Russian are urged to choose elective courses in economics, geography, history, or political science. Nearly every area of professional training and employment available requires a solid background in Russian area studies. For example, a recent statement on the criteria for U.S. Government employment cites as requisite a "substantial knowledge of the area in history, economics, political science, sociological disciplines, scientific specialties, demography, military-related skills, and in some cases cultural and religious background. In-depth knowledge of literature or linguistics without other substantive background may be viewed as overspecialization in a field of limited practical use."

Minor

A minor in Russian requires 15 semester hours with a minimum grade-point average of 2.00. Of these 15 semester hours, 12 must be taken at The University of Iowa. The department recommends that students seeking a minor in Russian focus their preparation on advanced (100-level) courses, such as these sequences:

Honor Society

Russian majors of junior or senior standing with a grade-point average of at least 3.00 in Russian language courses are eligible for membership in the honors program in Russian. An exclusive study organization with circulations, regular reports, and a quarterly paper, honors students work a total of 7 semester hours. Students may take up to 9 semester hours of honors in Russian.

Graduate Program

Offered with or without thesis, the Master of Arts program in Russian offers two major emphases, literary or language study.

The focus in literary studies is on the development of Russian literature, both as a national phenomenon and as a part of European culture. Students are expected to analyze written/style, perceptive literary techniques, recognize literary influences, and develop the ability to sound a critical view of topics, such as, content, and language of works in all genres.

Students who elect a language studies emphasis focus on the historical development of Russian and do advanced study of contemporary phonology, morphology, syntax, and stylistics.

Candidates for the master's degree must have completed the equivalent of the undergraduate major in Russian. Deficiencies in previous training may be made up by taking appropriate courses.

Candidates for the master's degree 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, political science, philosophy, and other languages. Students in the thesis program may earn 4-6 semester hours of credit for thesis preparation. Prior to scheduling the M.A. examination and submitting the thesis (where applicable), candidates must pass a comprehensive Russian language examination; they also must demonstrate a reading knowledge of either French or German.

Financial Aid

Aid is available to graduate students in the form of tuition scholarships, and teaching and research assistantships. It is awarded annually on a competitive basis. Teaching assistantships usually are not awarded to first-year students, although exceptions occasionally occur based on the quality of advanced language work. Applications are considered only from students who have been accepted into the program. Inquiries should be addressed to the departmental office.

Summer and Study Abroad Programs

The department strongly encourages undergraduate students to participate in intensive programs of language study, both in the United States and in the Soviet Union. In recent years, more than 20 students have studied in summer, semester, and academic-year programs at Leningrad State University under the auspices of the Council on International Educational Exchanges, as well as in American Council of Teachers of Russian Programs at a variety of Moscow and Leningrad institutes that specialize in teaching Russian as a foreign language. Other students have accelerated and refined their Russian language skills at various intensive summer programs at major American universities, including the program at the University of Iowa. Inquiries should be directed to the Russian Department office.

Course Work for Nonmajors

The department offers a special, two-semester sequence of courses (41:105-106) designed primarily for students who need to develop a reading proficiency in Russian for research purposes in the
Undergraduate Programs

The undergraduate program in science education represents a transdisciplinary major in science for students interested in education. The science education major is not intended to prepare students for advanced study in one area of science. When graduates of the Science Education Program elect to pursue graduate studies in a single area of science, they often must complete additional courses in that discipline after they are admitted to the Graduate College.

All of the emphasis areas in science education have the following characteristics in common:

- Depth in a general area of science: equivalent to three or six semesters of sequential study.
- Preparation in a second area of science: equivalent to two or four semesters of sequential study.
- Introduction to two other fields of science.
- A specified proficiency in mathematics as a tool of science (more mathematics study is required for the physical science emphases than for the biological ones).
- A view of science from a historical/philosophical/cultural perspective; and
- Experience with the application of scientific knowledge.

Admission to the Major

Candidates for a bachelor's degree in science education must be admitted to the science education teacher education program (TEP). In order to be considered for admission to the TEP, students must have completed a minimum of 20 semester hours of course work with a minimum cumulative grade-point average of 2.50. A limited number of applicants are accepted into the science education TEP, so having a 2.50 grade-point average does not ensure admission. Admission decisions are based on grade-point averages in science courses and other criteria relevant to teaching. Procedures and deadlines for TEP applications are described in the College of Education section of the Catalog under "Curriculum and Instruction."

Major Requirements

The major in science education requires a minimum of 56 semester hours earned in selected courses in College of Liberal Arts science departments, science applications courses, and courses in the history, philosophy, and sociology of science. Students may choose from six areas of emphasis within the science education major: (a) Biology, earth science, chemistry, physics, physical science, and general science. The requirements for the major for the six emphasis areas are as follows:

**Biology Emphasis**

At least 25 semester hours must be earned in 100-level courses.
- 211 Introduction to Biology 4 s.h.
- 317 Principles of Animal Biology 5 s.h.
- Electives (in biology, entomology, or zoology; including work in genetics, ecology, and physiology) 14 s.h.
- 415 Principles of Chemistry I-I 5 s.h.
- 416 Principles of Chemistry Lab I 2 s.h.
- 421 Organic Chemistry I 3 s.h.
- Chemistry electives 5 s.h.
- 125 Introduction to Geology 4 s.h.
- Approved geology elective 4 s.h.
- 2011 College Physics Mathematics course at the level of 221M-11 or 225-8 or higher 3-4 s.h.

**Application of Science**

- 91103 Societal and Educational Applications of Biological Sciences 3 s.h.
- 91102 Societal and Educational Applications of Earth Sciences and Environmental Sciences 3 s.h.
- 91105 Societal and Educational Applications of Physical Sciences 3 s.h.

Transfer courses from areas such as engineering, agriculture, and technical schools may be substituted for 91102 or 91105 with the advisor's approval.

**History/Philosophy/Sociology of Science**

- 91218 History of Science 2-3 s.h.
- 91130 Science in Historical Perspective 2-3 s.h.

**Earth Science Emphasis**

At least 25 semester hours must be earned in the 100-level courses.

- 125 Introduction to Geology 4 s.h.
- 1255 Environmental Geology Problems 4 s.h.
- 129 Evolution of the Earth 4 s.h.
- 124 Geology and the History of Life 4 s.h.
- 1241 Mineralogy 4 s.h.
- 12110 Geology of Iowa 3 s.h.
- 2211 College Physics 4 s.h.
- 2011 College Physics 4 s.h.
- 12180 Solid Earth Geophysics 3 s.h.
- 2661 General Astronomy 4 s.h.
- 41101 Climatology 3 s.h.
- 41110 Principles of Physics II 6 s.h.
- 41105 Principles of Physics Lab I 2 s.h.

**Physics Emphasis**

At least 25 semester hours must be earned in 100-level courses.

- 91103 Societal and Educational Applications of Physical Sciences 3 s.h.
- 91105 Societal and Educational Applications of Biological Sciences 3 s.h.
- 91102 Societal and Educational Applications of Earth Sciences and Environmental Sciences 3 s.h.
- 91101 Societal and Educational Applications of Biological Sciences 3 s.h.

Transfer courses from applied areas such as engineering, agriculture, and technical schools may be substituted for 91102 or 91105 with the advisor's approval.

**History/Philosophy/Sociology of Science**

- 91218 History of Science 2-3 s.h.
- 91130 Science in Historical Perspective 2-3 s.h.

**Physics Emphasis**

- 91103 Societal and Educational Applications of Physical Sciences 3 s.h.
28.17-18 Introductory Physics I & II
28.9 Introductory Physics III

Physics electives

28.9J Introductory Calculus I & II
4.12-14 Principles of Chemistry I & II
4.15 Principles of Chemistry Lab I & II
4.12 Organic Chemistry I & II
4.12I Physical Chemistry I

Application of Science

97.101 Societal and Educational Applications of Physical Sciences
97.102 Societal and Educational Application of Earth Sciences and Environmental Sciences
97.103 Societal and Educational Applications of Biological Sciences

Transfer courses from applied areas such as engineering, agriculture, and technical schools may be substituted for 97.102 or 97.103.

History/Philosophy/Sociology of Science
97.128 Meaning of Science
97.130 Science in Historical Perspective

Physical Science Emphases

Science
9.13-14 Principles of Chemistry I & II
4.16 Principles of Chemistry Lab I & II
29.11-11 College Physics
12.5 Introduction to Geology
Physics electives
Chemistry electives
Artificial physical science electives (geology, geography, chemistry, physics)

Application of Science

97.101 Societal and Educational Application of Physical Sciences
97.102 Societal and Educational Application of Environmental Sciences
97.103 Societal and Educational Applications of Physical Sciences

History/Philosophy/Sociology of Science
97.128 Meaning of Science
97.130 Science in Historical Perspective

General Science Emphases

Science
9.13-14 Principles of Chemistry I & II
4.16 Principles of Chemistry Lab I & II
4.12 Organic Chemistry I
29.11 College Physics
28.12 College Physics
12.5 Introduction to Geology
2.1 Introduction to Botany
20.7 Principles of Animal Biology

Electives must be chosen so there are at least 21 semester hours in either biology, chemistry, physics, or geology.

Application of Science

Two of the following:
97.102 Societal and Educational Application of Earth Sciences and Environmental Sciences
97.103 Societal and Educational Application of Biological Sciences
97.105 Societal and Educational Application of Physical Sciences

History/Philosophy/Sociology of Science
97.128 Meaning of Science
97.130 Science in Historical Perspective

Education Course Work for Teacher Certification

Interested students must apply for the Teacher Education Program in room T918 Lindquist Center.

To qualify for a secondary teaching certificate with endorsement to teach science, students must have a 2.50 grade-point average and must complete all College of Liberal Arts General Education Requirements, the requirements for a science education major, and the following professional education courses:

97.75 Educational Psychology and Measurement

97.131 Science Methods I
Elementary School Seminar and Practicum

97.132 Science Methods II:
Required, Research, Teaching Strategies, and Curriculum Development for K-12 Science

97.153 Science Methods III:
Middle/High School (taken with 97.187)

97.187 Issues in Education

97.180 Issues in Education

97.188 Seminar: Elementary School

97.190 (97.190) Individual Projects in Laboratory Practice
97.190 (97.190) Observation and Laboratory Practice in the Secondary School

97.192 (97.192) Observation and Laboratory Practice in the Secondary School

12.5 Human Relations for the Classroom Teacher

Students who complete 97.105 are recommended for K-12 certification.

Minors in Science Teaching

Six Science minor certification endorser-eras are available for persons with teaching majors in other academic areas: biology, chemistry, physics, general science, earth sciences, and physical sciences. All require 33 semester hours of credit.

Students who want to pursue a science teaching minor should consult with their advisor.

All science teaching minors must take:
97.131 Science Methods I
97.132 Science Methods II: Resources, Research, Teaching Strategies, and Curriculum Development for K-12 Science
97.153 Science Methods III
97.187 Elementary Special Subject Student Teaching
97.188 Meaning of Science
97.180 Issues in Education

Biology
2.1 Introduction to Botany

97.3 Principles of Animal Biology
97.103 Societal and Educational Applications of Biological Sciences

Chemistry
4.13-14 Principles of Chemistry I & II

9.16 Principles of Chemistry Lab I & II
97.105 Societal and Educational Applications of Physical Sciences

Physics
28.11-11 College Physics

28.12 College Physics

97.102 Societal and Educational Application of Physical Sciences

General Science
2.1 Introduction to Botany
12.5 Introduction to Geology

29.11 College Physics

97.102 Societal and Educational Application of Physical Sciences

Earth Science
12.5 Introduction to Geology

29.51 General Astronomy

97.102 Societal and Educational Application of Earth Sciences and Environmental Sciences

Physical Science
4.13-14 Principles of Chemistry I & II
4.16 Principles of Chemistry Lab I & II
29.11-11 College Physics

12.5 Introduction to Geology
97.102 Societal and Educational Applications of Earth Sciences and Environmental Sciences

97.105 Societal and Educational Application of Physical Sciences
Special Rules
Since the Science Education Program may involve many faculty advisers and several colleges and departments, some special rules and regulations apply to science education students. They include the following:

1. At least 10 semester hours of graded credit in science must be earned at The University of Iowa.
2. Transfer students must complete their last 30 semester hours in residence at the College of Liberal Arts at The University of Iowa in order to be eligible for the B.S. degree.

No science core courses numbered 11 or credit from the JESP Natural Science General Examination may be used toward the major in science education.

Science courses taken in other colleges of the University (e.g., college of Engineering and Medicine) will not be accepted in lieu of the required course work for the major unless one of the science departments of the College of Liberal Arts certifies in writing to the Registrar's Office that such a course is equivalent to the one offered in that department.

Courses used for the major may not be taken pass/fail/unsatisfactory grades from all courses used for the science education major will be used in computing a student's grade-point average in the major both at The University of Iowa and overall.

Since mathematics forms an integral part of most aspects of modern science, all science education students are urged to enroll in at least one mathematics course in both pure and applied mathematics (including statistics and computer science) so that they may be qualified to do graduate work and quantitative research later.

Honors
To graduate with honors, students must maintain a 3.20 grade-point average and complete 39.00 hours Research Project in addition to other science education requirements.

Iowa-SSP and the Iowa Science and Humanities Symposium
The Iowa Secondary Student Training Program (Iowa-SSP) is a special summer program that emphasizes research experience for talented secondary students. Participating schools and students are provided with research laboratories in a variety of science areas. Various programs, such as Young Scientists and National Science Foundation Internship Programs, are funded by Iowa-SSP when funding is obtained.

The statewide Iowa Science and Humanities Symposium are sponsored by the U.S. Army Research Office each February involves about 180 students in over 80 teachers. The symposium emphasizes career opportunities in science and related fields by focusing on ongoing 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 in the "College of Education" section of the Catalog under "Secondary Education." The Master of Science with specialization in elementary school science education is described in "Early Childhood and Elementary Education."

Special Programs
The Iowa Cudahay Program involves 200 participants in four or five workshops for teachers grades 4-9. The Cudahay focuses on introductory science/technology/society materials and approaches. Another program is Project STIPS, which helps upper elementary and middle school teachers use and evaluate logical and higher order thinking skills. Project POCS is a recently funded NSF grant that allows middle school teachers to conduct authentic research. Other efforts focus on strategies for teachers who work with gifted and talented students and programs that stimulate interdisciplinary faculty exchanges.

Many Science Education Center activities are funded by NSF. Title II, the Iowa lottery program, and industries such as the Iowa Utility Association help many researchers through in-service programs targeted to graduate degree programs.

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

- Attitudinal and other affective outcomes of instruction
- Philosophy and socioeconomics of science
- Individualized learning
- Computer-assisted learning
- Classroom interaction studies
- Creativity

Student outcomes/perceptions of learning

- Intellectual development related to science teaching and learning
- Education in less developed countries
- Health education

International Programs
The faculty in science education has collaborated on a number of international research and development projects to countries including Brazil, Italy, Spain, Portugal, Israel, Nigeria, Malaysia, Indonesia, Korea, Australia, Taiwan, South Africa, Mexico, and India. Several faculty exchanges have occurred and numerous cross-national studies have been undertaken.

International students enrich the opportunities for graduate students at the Science Education Center. Many have entered from Indonesia, Korea, Malaysia, Nigeria, Taiwan, and other nations around the world. Facilities are organized, and some collaborative efforts are underway each year.

Facilities
The facilities for science education programs at The University of Iowa are exemplary.

The Science Education Center is located in Van/ May Hall near the center of the University Campus.

Facilities include the two main offices, faculty, secretarial, and graduate student office space, a self-service computer laboratory a photodisc laboratory, instructional classrooms, including space for elementary and secondary school science methods courses, computer oriented laboratory, a large computer 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 an in-service work with teachers, supervisors, and administrators; a common area for small-group discussions and individual work; and a lounge.

Courses
The following are special courses offered by the Science Education Program to supplement the undergraduate emphasis areas in science education and to provide science options for elementary and special education majors.

Primarily for Undergraduates

- 495 Cooperative Education Internship 0 cr.
- 470 Foundations of Science 4 cr.
- 457 Cooperative Education Internship 0 cr.
- 470 Investigations in Science 4 cr.

Special projects in relation for high ability secondary school students may be required.

- 499 Research Project 0-3 cr.

Research experience required of undergraduates pursuing honors degree.
For Undergraduates and Graduates

17.162 Societal and Educational Applications of Earth Sciences and Environmental Science
Selects a major field of science and emphasizes current applications in today’s world.

17.167 Societal and Educational Applications of Biological Sciences
Selects a major field of science and emphasizes applications in today’s world.

17.165 Societal and Educational Applications of Physical Sciences
Selects a major field of science and emphasizes applications in today’s world.

17.108 Societal and Educational Applications of Chemical Concepts
Selects a major field of science and emphasizes applications in today’s world.

17.115 Introduction to Weaving

17.963 Textile study

17.222 Weaving of Science
3.0, 4.0

17.513 Service in Historical Perspective
3.0, 4.0

17.413 Problem in Integrating the Teaching of Environmental Science
3.0, 4.0

Social Studies Education

Chapman Robert M. Fillm
Professor Robert W. Ritch
Undergraduate degree offered: B.A. in Social Studies
Graduate degrees offered: M.A. in Social Studies, Ph.D. (in Education)

Undergraduate Program

The major in social studies education is an interdisciplinary, nonprofessional major. It provides an excellent foundation for careers in law, social work, religion, urban planning and development, and government service at all levels.

General Program

Major requirements for the B.A. degree in social studies education total 90 semester hours of credit earned in departments cooperating in the social studies education program. The content of the course work is as follows: 12 semester hours in either U.S. or world history; 12 semester hours each in economics, political science, and sociology; at least 3 semester hours in geography, and 9 semester hours in geography, anthropology, U.S. history, or world history.

There is no separate honors program in social studies education. Students who qualify for the College of Liberal Arts 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" section of this Catalog.

Teacher Certification Program

Students who want to obtain a teaching certificate in history or other social science areas must declare a major in the academic field they wish to teach and earn a total of 30 semester hours in that field. They also must complete the 15 semester hours in each of two fields related to history or social science. Majors and related fields may be selected from the following: U.S. History, non-U.S. (world) history, anthropology, economics, sociology, geography, political science, or psychology. Course work must conform to departmental requirements for the major. In most instances, candidates are required to have an advanced major area as well as a major in social studies education.

Additional information on social studies teacher certification programs is available from the office of the Division of Secondary Education, NES, Lexington Center.

Graduate Programs

Master of Arts

The department offers the Master of Arts degree with or without thesis. Some graduates of this program are classroom teachers and chairmen of social studies departments in junior and senior high schools. Some serve as curriculum consultants for school districts, while others are staff members in community colleges. A few have found the degree to be excellent preparation for professional work in correctional and penal institutions. For a few, the master’s degree in social studies education has provided access to civil service positions at various levels of government. Students choose from two emphases in social studies education: Program A provides an opportunity for interdisciplinary work in history, social science, or related areas for classroom teachers and others interested in acquiring greater competence in their subject area.

Program B is for individuals who have their bachelor’s degree in history or one of the social sciences and who wish to obtain a teaching certificate in the process of completing their master’s degree. Both programs are described in the "College of Education" section of the Catalog under "Curriculum and Instruction."

Doctor of Philosophy

Some graduates of the social studies education doctoral program hold administrative posts in institutions of higher education, serving as presidents, provosts, or deans of faculty or graduate schools. Some are department chairmen 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 program are listed in "Social Studies Education" and are described in the "Catalog of Education" section of the Catalog under "Curriculum and Instruction."

Facilities

Students in social studies education have access to the facilities and laboratories of the cooperating departments and the College of Education. Special agencies and services also are available, such as the University Hospital School, the Ives Center for Education in Politics, the Bureau of Educational Research, the Institute of Public Affairs, the Iowa Educational Information Center, the Curriculum Laboratory, the Statistical Computing Center, the computer laboratory, and the Top Computing Center.

Faculty members may serve as social studies education advisers and coordinators are experienced classroom teachers whose advanced degrees have been gained in history, the social sciences, and education. They are active in professional organizations, consultative work, and in working with schools in curriculum revision.

Courses

10.011 Individual Instruction in Social Studies Education

10.013 Individual Study: Field studies, and Individual Social Studies Education: Prose and Problems of Professional Development

10.083 Individual Study: Social Studies Education

Graduate students may take up to 4 semester hours in courses in social science and social studies education, subject to the approval of the department.

Social Work

Director: Catherine F. Affe
Professor of Social Work, Thomas H. Welch Professor of Practice, Ralph H. Anderson, Frank J. Clark, Mildred Johnson

Adjunct professors: Woodrow W. Warren, David L. H. Cohn, Thomas H. Welch

Associate professor: Paul L. Shaff, Associate Dean, Catherine F. Affe, John A. Clark, John F. Kee, Patricia L. Kelley, William L. Williams, William L. Williams, Martin B. Tracy

Associate professor emeritus: W. Stanley Good, Katherine A. Solms

Adjunct associate professor: Michael Frishman

ForUndergraduatesGraduates

17.162 Societal and Educational Applications of Earth Sciences and Environmental Science

17.167 Societal and Educational Applications of Biological Sciences

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Associate professor emeritus: W. Stanley Good, Katherine A. Solms

Adjunct associate professor: Michael Frishman
The Bachelor of Arts program prepares students for beginning professional social work practice. The goals of the program are to prepare students for employment in its social services using B.A. graduates, such as public welfare, child welfare, group, casework, social services, health, mental health, elderly services, corrections to provide hands-on practice in social work and allied professions, and to prepare students for informed community participation in social welfare issues.

The program is accorded by the Council on Social Work Education.

Undergraduate students majoring in social work must satisfy the College of Liberal Arts General Education Requirements. The General Education Requirements in natural sciences should include 11.21 Human Behavior. The minimum requirements for a B.A. in social work include 24 semester hours in general education courses, 12 semester hours in one other department (see "Other Courses," below), and 12 semester hours in social science courses. The following courses are required for the major.

**Freshman/Sophomore Years**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>31.0 Introduction to American Politics</td>
<td>3</td>
</tr>
<tr>
<td>31.1 Elementary Psychology</td>
<td>3.5</td>
</tr>
<tr>
<td>or 31.5 General Psychology</td>
<td></td>
</tr>
<tr>
<td>34.1 Introduction to Sociology: Principles</td>
<td>3.5</td>
</tr>
<tr>
<td>Any basic economics course</td>
<td>3.5</td>
</tr>
<tr>
<td>42.02 Introduction to Social Work</td>
<td>4.5</td>
</tr>
</tbody>
</table>

**Junior Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.147 Racism and Discrimination</td>
<td>3</td>
</tr>
<tr>
<td>Approved course from another department (see School of Social Work for list)</td>
<td></td>
</tr>
<tr>
<td>42.148 Human Behavior in the Social Environment</td>
<td>4</td>
</tr>
<tr>
<td>42.144 Fundamentals of Social Work Practice</td>
<td>3</td>
</tr>
<tr>
<td>42.142 Interpersonal Skills</td>
<td>1.5</td>
</tr>
<tr>
<td>42.144 Social Work Research</td>
<td>4</td>
</tr>
<tr>
<td>42.171 Social Work Processes</td>
<td>4.5</td>
</tr>
</tbody>
</table>

**Senior Year**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>42.143 Social Welfare Policy and Practice</td>
<td>3</td>
</tr>
<tr>
<td>42.189 Field Experience Seminar</td>
<td>3</td>
</tr>
<tr>
<td>42.193 Field Experience Seminar</td>
<td>3</td>
</tr>
<tr>
<td>4.5-11.5</td>
<td></td>
</tr>
</tbody>
</table>

**Other Courses**

The undergraduate program requires a minimum of 12 semester hours of coursework in one department listed. Most students select either sociology or psychology. Courses used to meet general education and foreign language requirements do not count toward the 12 semester hours, nor do the specifically required social work courses.

**Minor**

A minor in social work requires a minimum of 25 semester hours of credit 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 42.000 and above. 42.52, 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 January. Admission to the undergraduate program in social work requires completion of 42.02 Introduction to Social Work with a grade of C or higher (can be taken the sophomore year). A cumulative grade-point average of at least 2.00; and Completion of the application process.

Exceptions may be made for private who do not meet the grade-point-a-average requirement if they are showing considerable potential on the basis of other criteria.

More information is available from the coordinator of the Admission at the School of Social Work.

**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. Its common goals, to be pursued through a set of foundation requirements, are to enable all students to understand the dynamics of human development and change; to learn how to enhance the responsiveness of human service between society and the individual; and to acquire intervention skills for working with individuals, families, small groups, organizations, and communities in public and private agencies and institutions.

The program is accredited by the Council on Social Work Education (CSWE).

The Master of Social Work degree includes 25 semester hours of foundational/core courses and 45 semester hours of advanced-level courses. Students who have a B.S.W. from a CSWE program receive 15 semester hours of advanced standing and can earn the degree with 46 semester hours. A limited number of students are admitted to a 36-45-hour, full-time program. All students must earn 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 must pass a qualifying exam for the particular foundation course in order to receive partial advanced standing. Note that the semester hours of graduate transfer credit is allowed for previous graduate work.

The school operates a year-round, sequential program that begins in the fall semester for full-time students who need the full 60 semester hours to work toward a degree in the social work program. The program commences through the summer, which is a fall semester. Fall-term students who complete the first 30 semester hours after admission generally earn the M.S.W., the spring semester of their second year. Those who require 45 semester hours over the program in the spring semester (January). Students in the 36-semester-hour program begin their coursework in the third semester (May). The 36-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 80 semester hours complete the program in four years. A special intensive summer program has been designed to enable students from Des Moines and the Quad Cities to attend classes in Iowa City.

Students must maintain at least a 3.00 cumulative grade-point average, must be approved for M.S.W. candidacy, and must successfully complete a master's comprehensive examination; an integrative paper involving evaluation of practice, prepared in conjunction with a program seminar in the final semester. Students may 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
Behavior in the Social Environment 4 s.h.
Fundamentals of Social Work Practice 3 s.h.
Interpersonal Skills Laboratory 1 s.h.
Social Welfare Policy and Practice 3 s.h.
Microcomputer Skills Laboratory 1 s.h.
Elective 3 s.h.
Total 12 s.h.

Spring Semester
Social Work Research 5 s.h.
Practicum and Internship 3 s.h.
Foundation Practicum 3 s.h.
Foundation Practicum Seminar 1 s.h.
Elective 2 s.h.
Total 13 s.h.

Summer Session
Electives—excluding preplacement field practice courses 4–11 s.h.

Second-Year Concentration
Fall Semester
Family Systems Theory 3 s.h.
Interdisciplinary Systems Theory 3 s.h.
Advanced Research 3 s.h.
Advanced Practicum in Family Systems or Advanced Practicum in Interdisciplinary Systems 5–6 s.h.
Advanced Practitioner Seminar in Family Systems I or Advanced Practitioner Seminar in Interdisciplinary Systems I 1 s.h.
Total 12–15 s.h.

Spring Semester
Family Therapy or Social Work Practice in Interdisciplinary Setting 3 s.h.
Family Policy, Domestic, and International Social Policy and Interdisciplinary Systems Domestic and International 3 s.h.
Advanced Practicum in Family Systems or Advanced Practicum in Interdisciplinary Systems 5–6 s.h.
Advanced Practitioner Seminar in Family Systems II or Advanced Practitioner Seminar in Interdisciplinary Systems II 1 s.h.
Thesis or elective 2–3 s.h.
Total 12–13 s.h.

Concentrations
After admission, students choose between two concentrations: family systems or interdisciplinary systems. The family systems concentration is designed to help students develop practice competence as members of family development and change and as brokers for individuals and families, both traditional and nontraditional. Historically, social work practice has been agency-based; this concentration prepares students to act as change agents in direct practice with public and private social service agencies. Its holistic perspective develops awareness of the interrelationship between the social, the social, and the social environment in which they live. Concentration is given to the biological, psychological, cultural, and social origins of behavior.

The interdisciplinary systems concentration is designed for students preparing for social work in settings such as public social services, hospital, schools, clinics, businesses, industry, and corrections. It provides a balance of content for both clinical and nonclinical practice. Interventions Develop skills needed in complex settings, such as working with interdisciplinary assessment and treatment plans, case and unit management, and collaboration with other professionals.

Interdisciplinary 4000-level courses stress the importance of integrating services for multiple problem situations and families at the community level. The coursework builds skills in advocacy, interdisciplinary program coordination and management, conflict resolution, and the application of professional ethics. Students may emphasize direct practice, supervision, and organizational development, or community development.

Off-Campus Centers
The 4000-level program is available in Iowa City and Des Moines. At the end of the fall calendar year, some students stay in Iowa City 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, Des Moines. The Quad Cities Center is located on the Mississippi River in Davenport, 60 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 only as part-time students. In the Quad Cities, a group of part-time students is admitted every three years; the next group will start in August 1991. Regular School of Social Work faculty members teach required courses in all centers and are available for student advising.

The off-campus programs have been evaluated by OSWE and The University of Iowa Graduate Council as providing a comparable program to that available in Iowa City.

Part-time students complete two courses each spring and fall term for three or four years. Electives may be taken concurrent with fall and spring semester courses in the sequence. A full range of summer courses is available in Iowa City, and some courses are available in Des Moines. The format for most summer courses is intensive, short-term, and split sessions, 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
Cooperative Programs
In cooperation with the Counseling Education Program at the University of Iowa, a curriculum has been designed around the requirements of the American Association of Marriage and Family Therapy (AAMFT). Graduates 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; graduates 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 concurrently with the M.S.W. program, or after they obtain independent certification at the coordinator of the Aging Studies Program.

The school also participates with the College of Education to provide curriculum that can lead to the special education certification. This special education certification is available in Iowa. Students can work toward the certificates simultaneously or apply for certification after they have been 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-Based Services and the School of Social Work gerontology programs.

The school also offers students the opportunity to participate in travel/graduate seminars. Urban, rural, national, and international seminars are available.

Graduate Admission
The criteria for admission for full-time and part-time students in the 24- and 48-semester-hour M.S.W. programs are:

A baccalaureate 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 letter-graded graduate course work (exceptions noted below);
Three letters of recommendation, including one regarding academic abilities and one 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, field, or employment) is desired. Previous earning life experience (cross-cultural and international experience and background, and minority status) also are granted consideration.

Foreign applicants must score at least 600 on the Test of English as a Foreign Language (TOEFL).

It is the school's policy to admit 25-25 percent of the M.S.W. class with grade-point averages between 3.00 and 3.50. Applicants who are especially strong candidates on the basis of other criteria may be admitted. Since the school seeks to maintain a heterogenous student body, it makes special efforts to admit students who represent a diversity of racial, ethnic, and socioeconomic backgrounds. Students with developmental disabilities also are encouraged to apply.

Application procedures are accepted beginning September 1 and must be completed by February 1 to be considered for the next academic year. Students in the 48-semester-hour program begin in January and are considered part of the senior class and must meet the same application deadline as students entering the preceding semester. Applications for the 24-semester-hour programs must be completed by January 1. Additional criteria for admission to the fall term, 48-semester-hour program include:

A baccalaureate 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 minimum of two years of full-time experience after receipt of a bachelor's degree; and
Completion of a basic statistics course and proficiency in the use of microcomputers (credits received in these areas are not applied toward the M.S.W. degree).

A complete statement of graduate admission policies is available upon request.

Continuing Education
Nondegree students may enroll for selected courses and workshops through the Saturday and Evening Class Program in Iowa City and the School of Social Work centers in Des Moines and the Quad Cities. There are limits on the graduate course work that may be applied to the master's degree requirements for students who later enroll in the program.

Financial Aid
Financial aid for students varies from year to year. All students seeking financial assistance should apply for aid through the University of Iowa Office of Student Financial Aid and should maintain close contact with the school's financial aid administrator regarding availability of funds from the School of Social Work. Aid received through the Office of Student Financial Aid does not preclude students from consideration for aid through the School of Social Work.

Various types of aid administered by the School of Social Work include research and teaching assistantships, work-study appointments, internships, and the Eleanor K. Taylor loan funds. Aid is available from various sources, such as the Graduate and Professional Opportunities Program (GPOP), national grants, international scholarship awards, the South African Scholarship Program, and a few agencies that provide stipends for graduate students in practice.

Courses
Most courses are not available every semester.

Primarily for Undergraduates

120:21 Introduction to Social Work 4 h.

120:24 Introduction to Basic Social Case Methods 3 h.

120:26 Introduction to Social Problems 1 h.

120:28 Substance Use and Abuse 2 h.

120:31 History of Social Work 2 h.

120:70 Work Practices 3 h.

130:13 Field Experience Seminar 1 h.

130:71 Graduate Work Seminar 1 h.

130:72 Basic Statistical Applications 3 h.

130:73 Advanced Statistical Applications 3 h.

130:74 Cross-Cultural Social Work 3 h.

130:75 Social Work in Crisis 3 h.

130:76 Macro Practice 3 h.

130:77 Group Work 3 h.

130:78 Child Welfare 3 h.

130:79 Legal Aspects of Social Work 3 h.

130:80 Human Behavior in Organizations 3 h.

130:81 Child Development 3 h.

130:82 Social Work in Hospitals 3 h.

130:83 Applied Psychology 3 h.

130:84 Program Evaluation 3 h.

130:85 Social Policy 3 h.

130:86 Community Organization 3 h.

130:87 Urban Social Work 3 h.

130:88 Social Work with Children and Families 3 h.

130:89 Social Work with Older Adults 3 h.

130:90 Social Work with Families 3 h.

130:91 Social Work with Groups 3 h.

130:92 Social Work with Individuals 3 h.

130:93 Social Work with Organizations and Communities 3 h.

130:94 Social Work with Institutions 3 h.

130:95 Social Work with Populations 3 h.

130:96 Social Work with Policy 3 h.

130:97 Social Work with Research 3 h.

130:98 Social Work with Technology 3 h.

130:99 Social Work with Values 3 h.

140:11 Theory and Practice of Social Work 4 h.
Sociology

Chair: Dr. Jane Doe

*Program Overview*

The Bachelor of Arts degree in Sociology is designed to provide students with a comprehensive understanding of social structures and processes. It is suitable for students interested in pursuing careers in social work, law, education, business, government, and research. The program offers a broad range of courses in sociology, anthropology, and political science.

*Course Requirements*

To complete the Bachelor of Arts degree in Sociology, students must complete a total of 120 credit hours, including general education requirements and major requirements.

*General Education Requirements*

- English Composition (3 credits)
- Calculus (4 credits)
- Chemistry (4 credits)
- Biology (4 credits)
- Social Sciences (11 credits)

*Major Requirements*

- Introduction to Sociology (3 credits)
- Sociological Theory (3 credits)
- Social Problems (3 credits)
- Quantitative Research Methods (4 credits)
- Qualitative Research Methods (4 credits)
- Social Statistics (3 credits)
- Criminology (3 credits)
- Social Psychology (3 credits)
- Cultural Anthropology (3 credits)
- Medical Anthropology (3 credits)

*Electives*

Students must select 18 credits from a list of approved electives, which may include courses in anthropology, political science, psychology, and economics.

*Graduation Requirements*

To graduate with a Bachelor of Arts degree in Sociology, students must maintain a minimum GPA of 2.0 and complete all requirements within a specified time frame. Students interested in pursuing graduate studies in sociology or related fields are encouraged to consult with their academic advisor to develop a plan of study.
for a sociology major is available in the department.

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 in Iowa reporting in sociology should contact the Secondary Education Division in the College of Education.

Minor

In addition to the programs for majors, the department provides supportive course work and several course clusters of value to undergraduate students who want to combine a minor in sociology with a major in another field, particularly another 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 minimum grade-point average of 2.0.
- At least 12 of the 15 semester hours must be taken at The University of Iowa in courses numbered 241-299 and 301 and higher; and

No course accepted toward the minor may be taken pass/no pass.

A brochure describing minors in sociology is available in the department office.

Honors

The College of Liberal Arts Honors Program provides a stimulating and intriguining educational experience for undergraduate majors who perform at a high level. To qualify for consideration in the Honors program in sociology, students must have a grade-point average of 3.20 overall and a 3.20 average in sociology courses. The honors curriculum consists of limited-enrollment classes in which students explore in-depth issues of mutual interest with faculty and other honors students. The special requirements for an honors degree in sociology are completion of 34.100 Honors Prerequisite in the junior year, one advanced undergraduate course or graduate course approved by the honors director, and an honors thesis. The honors thesis gives students an opportunity to do sociological research in conjunction with a faculty member of the student's choice. As an option, honors students may take the honors section of 34.322 Introduction to Sociology: Principles, thereby waiving the course requirement to complete 34.322 Introduction to Sociology: Problems for a degree in sociology.

Graduate Programs

The graduate program in sociology are preparation for professional careers. Depending on which program the student chooses, the master's program prepares the student 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-oriented academic, private, and government positions. Opportunities for research using survey, experimental, and observational methods are readily available in the department.

Master of Arts

The M.A. degree in sociology requires 30 semester hours with thesis or 36 semester hours without thesis. The program without thesis is stressed for persons who desire a terminal degree and for whom a wider range of course content in sociology is appropriate.

At least 24 of the 30 M.A. degree must be completed with grades of B or higher.

M.A. in Criminal Justice and Corrections

This program is designed for individuals who wish to work in the field of criminal justice. Since it is assumed that sociological orientation and background is extremely valuable for such work, the major emphasis of the program is sociology. It also is recognized that specialized knowledge is essential to performance in the criminal justice roles. Therefore, students may select 15 semester hours of course work in areas such as legal process, administrative procedure, or direct interventions 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; a low student-faculty ratio is maintained. Internships are available with local criminal justice agencies. Successful completion of this program requires a minimum of 34 graduate credits, a 3.00 grade-point average on all work attempted, and a master's paper (not a thesis).

Joint Program in Sociology and Law

Students may obtain a Master of Arts in Sociology and a Juris Doctor by fulfilling the basic requirements of both programs. The College of Law permits students to apply for up to 12 semester hours of credit for graduate work that they take after entering the joint program toward the 90 hours required for the J.D., even though those hours are also credited toward the M.A. in sociology.

At the discretion of the student's M.A. committee, the Department of Sociology may stipend up to 12 semester hours of credit to law course work toward the M.A. degree. This cross registering 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 required 24-hour course, Data Analysis, and 3 elective semester hours in other electives.

Candidates must pass comprehensive examinations and write a dissertation. All doctoral candidates are examined in the basic tool area of sociology-theory, history of theory, methodology, and statistics—and on one major and one minor area chosen from the areas arranged by the faculty, such as social psychology, deviance, criminology, family, social stratification, organizations, demography, theory, methods, and statistics. A university faculty committee is appointed upon request.

A detailed statement of regulations for graduate study also is available upon request. Prospective doctoral candidates should establish the statement carefully.

Special Workshops

The department organizes a series of workshops each semester on new and interesting research methods not covered in the standard methods course. Each workshop informs students about the patterns for which the method is applicable, gives an introduction to the theory, and shows how the method is actually used in a research setting. Topics covered in recent years include LISREL, meta-analysis, simulation techniques, event history analysis, and time-series analysis.

A biweekly theory workshop on tools and methods used in theoretical analysis of faculty and graduate students is held. Workshop participants critique a paper, which has been distributed a week before the session.

Admission

Admission to graduate study in sociology usually requires a minimum undergraduate sociology major average of 2.50 and a total score of 1100 on the quantitative portion 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's application requirements, students must provide a complete application that includes letters of recommendation. The minimum TOEFL score is 80 for admission. The minimum required TOEFL writing score is 18 for admission.

Applications should be submitted at least two months before the start of the academic session for which admission is requested. The deadline for applying for admission is March 1, although evaluation of applications begins in January.

Admission decisions are based on consideration of prior academic performance, professional references, letters of recommendation, and personal statements submitted in the application. The department has specific undergraduate course requirements for admission. Admission to the graduate program requires a background in the social sciences with some training in mathematical training is required. A foreign language requirement is not required for admission and there are no foreign language requirements for either the M.A. or Ph.D. degrees in sociology. Applicants concerning admission should be directed to the chair of the admissions committee.

Financial Aid
The Department of Sociology offers four types of awards to graduate students: teaching assistantships, fellowships, graduate assistantships, and assistantships. Fellowships and graduate assistantships are awarded on the basis of academic performance and potential for research. Teaching assistantships are awarded on the basis of academic performance. Assistantships are awarded on the basis of academic performance and potential for research.

Research Facilities
Social Psychology
The department's research laboratory includes a social psychology laboratory with individual and group research opportunities. The laboratory is equipped with a computer, a video camera, and a sound system. The laboratory is accessible to students and faculty.

Survey
The Social Science Research Center and the Iowa State University Research Center offer facilities, staff, and data archives for conducting surveys and secondary data analysis. Computer-assisted telephone surveys can be conducted, and an annual telephone opinion survey is ongoing.

Computer Facilities
The department operates a computer terminal and personal computer cluster adjacent to graduate student offices. Both terminals and personal computers can be used for teaching, research, and other activities.

Courses
For Undergraduates Only
Courses open to freshmen require registration. Other courses are open to students with registration. Other courses are open to students with registration.

Advanced Courses
Social Theory

Statistics and Research Methods

Sociology

Survey

Research FACILITIES

Social Psychology

Survey

Research FACILITIES

Social Psychology

Survey
Deviance, Delinquency, Crime, and Law

146 Sociology

Nature and causes of crime; the criminal penitentiary, law enforcement, due process, and crime prevention. Prerequisites: 144, 142 or consent of instructor.

153 American Government

Delinquency on an individual and social scale, problems, theories of the causes of delinquency, law enforcement, and the juvenile court. Prerequisites: consent of instructor.

163 Women, Crime, and Deviance

Sociological understanding of femininity as participants in society and victims of crime and violence. Students will analyze the sociological theories and research on women and criminality. Prerequisites: consent of instructor.

166 Sociology of Correction

Analysis of the media's role in the criminal justice system, including the relationship between media and social control. Prerequisites: consent of instructor.

177 Prevention of Crime and Deviance

Strategies and problems

178 Criminal Justice and Society

Theories of deviance and the impact of social control mechanisms. Prerequisites: consent of instructor.

182 Sociological Analysis of Crime and Deviance

Theories of crime and deviance from various perspectives. Prerequisites: consent of instructor.

189 Exploring Crime Reduction Strategies

Focus on the relationship between media and the criminal justice system. Prerequisites: consent of instructor.

200 Sociology of Social Deviance

Crime and the law; the criminal justice system; law enforcement, due process, and crime prevention. Prerequisites: 144, 142 or consent of instructor.

205 Aging and Human Development

Cultural, biological, psychological, and socioeconomic factors of aging. Prerequisites: consent of instructor.
Sample Course of Study
Freshmen Year
Fall Semester
415:104 Introduction to the Soviet Union 3 s.h.
415:111 First-Year Russian I 4 s.h.
415:112 Principles of Microeconomics 3-4 s.h.
415:121 Introduction to Societies 3 s.h.

Spring Semester
415:122 Principles of Microeconomics 3-4 s.h.
165:177 Imperial Russia: 1801-1917 3 s.h.
46:2 Fast-Track Russian I 4 s.h.
415:126 General education electives 4-6 s.h.

Sophomore Year
Fall Semester
165:176 Imperial Russia (1918-1991) 3 s.h.
165:178 Soviet Union 1917-1993 3 s.h.
165:179 Revolution and the New Regimes 3 s.h.
415:3 Second-Year Russian I 4 s.h.
General education electives 4-6 s.h.

Spring Semester
415:264 The Soviet Economy 3 s.h.
165:179 Soviet Union 1953-Present 3 s.h.
415:2 Second-Year Russian II 4 s.h.
415:3 Second-Year Russian II 4 s.h.
General education electives 4-6 s.h.

Junior Year
Fall Semester
165:175 Imperial Russia (1789-1918) 3 s.h.
19:155 Mask and Media Society 3 s.h.
30:344 Intern to Soviet Government and Politics 2 s.h.
41:331 Second-Year Russian I 4 s.h.
General education electives 3-4 s.h.

Spring Semester
19:156 Comparative Communication Systems 3 s.h.
30:142 Government and Politics of the Soviet Union and Eastern Europe 3 s.h.
41:112 Third-Year Russian II 4 s.h.
General education electives 4-6 s.h.

Senior Year
Fall Semester
GE:105 International R-Economics 3 s.h.
165:172 Maslovskaya 3 s.h.
125-159 Nuclear Strategy and Area Control 3 s.h.
415:264 Russian Culture 4 s.h.
General education electives 3-4 s.h.

Spring Semester
GE:106 The Political Economy of Socialism 3 s.h.
165:178 Contemporary European News Colloquium 3 s.h.
30:164 Soviet Foreign Policy 3 s.h.
41:232 Soviet Literature under Stalin 3 s.h.
415:100 Senior Seminar 3 s.h.

Honors
The program leading to a B.A. degree with Honors is open to students with a minimum cumulative grade-point average of 3.20. To graduate with honors, students must complete at least a 3.20 grade-point average in the Soviet and East European Studies program and a cumulative grade-point average of at least 3.20. Honors students take 37 semester hours of course work with a grade of B or above in each course. Courses include honors seminars in economics, history, journalism and mass communication, political science, Russian, and social work, as appropriate. The last 3 semester hours may be earned by completing an honors research project directed by faculty members from at least two disciplines. Students interested in seeking a B.A. degree with honors should contact the College of Liberal Arts Honors Program and the SEES program advisor before they begin their junior year.

Joint Programs
Joint programs leading to a double major in Soviet and East European Studies and another discipline can be managed without difficulty. Double majors are appropriate to all the program's constituent disciplines, especially in the Russian language. Other combinations are possible as well. In most cases, some courses count toward the requirements in each major.

Supplementary Study Programs
The SEES program encourages all participants to exploit opportunities for internships with governmental departments and agencies, nonprofit organizations and institutions, and businesses. Internships not only enrich the student's foraying from course work but may also lead to enhanced employment opportunities after graduation. In some cases, academic credit may be arranged for an internship.

Study Abroad
Students who wish to enrich their education through study abroad are strongly encouraged to do so. The SEES faculty strive to assist qualified students in selecting foreign-study programs and institutions best suited to their educational objectives and needs. There are numerous programs available to students who desire to pursue both law and cultural training in Belgrade, Czechoslovakia, East Germany, Hungary, Poland, Romania, and Yugoslavia. The best study-abroad programs are those that allow students to study in the Department of Russian section of the Casual Students are increasingly able to apply directly for admission to almost all universities of higher learning throughout Central and Eastern Europe as well as the Soviet Union.

SEES Area Courses
Course descriptions are available in the appropriate departmental sections of the Catalog.

Economics
*EC:051 Principles of Microeconomics 3-4 s.h.
*EC:052 Principles of Macroeconomics 3-4 s.h.
*EC:125 International Economics 3 s.h.
*EC:126 The Soviet Economy 3 s.h.
*EC:127 The Political Economy of Socialism 3 s.h.
41:197 Honors Seminar (Gerard Noguret) arr.

*These courses are prerequisites to the economics curriculum in this area of concentration; they do not count toward 27 semester hours of course work required for the Bachelor of Arts.

History
19:151 Czolgosz for History 3 s.h.
19:156 Seminar for History 3 s.h.
19:164 Majors European Social Thought: Adam Smith to Marx 3 s.h.
19:165 Marx 3 s.h.
19:166 Muscovite Russia 3 s.h.
19:167 Imperial Russia 1918-1991 3 s.h.
19:176 Imperial Russia 1918-1991 3 s.h.
19:177 Imperial Russia 1901-1917 3 s.h.
19:178 Soviet Union 1917-1953 3 s.h.
19:179 Soviet Union 1953-Present 3 s.h.
19:180 Contemporary European News Colloquium 3 s.h.

Journalism and Mass Communication
19:155 Mass Media Society 3 s.h.
19:156 Comparative Communication Systems 3 s.h.
19:181 Readings in Communication 3 s.h.
19:190 Honors Readings 3 s.h.
Political Science
340:64 introduction to the Politics of 3 s.h.
340:141 introduction to Soviet Government and Politics 3 s.h.
340:142 Government and Politics of the Soviet Union and Eastern Europe 3 s.h.
340:255 Politics of Eastern European and 3 s.h.
Cultural Conflict
340:167 Nuclear Strategy and Arms Control 3 s.h.
340:181 Soviet Foreign Policy 3 s.h.
340:183 Honors Seminar on Comparative Politics 3 s.h.
340:146 Honor Seminar on International Politics 3 s.h.

Tunisia
411:159 Tunisian Literature in Translation: 1860-1917 3 s.h.
411:156 Tobacco and Doctoral Essays 3 s.h.
411:181 Soviet Literature to 1954 3 s.h.
411:182 Soviet Literature since Stalin 3 s.h.
411:185 Russian Culture 3 s.h.
411:186 Soviet Union Today 3 s.h.
411:191 Russian Civilization 3 s.h.
411:199 Honors Sem. 3 s.h.

Courses
415:490 Introduction to the Soviet Union 3 s.h.

Comparative Literature: Europe and the West
415:105 Comparative Literature: Europe and the West 3 s.h.

340:510 Comparative Writers Europe and the West 3 s.h.

Undergraduate Programs

Bachelor of Arts in Spanish
A new Spanish major took effect August 1988. All students now declaring a Spanish major must fulfill the new requirements. Students who began a Spanish major before August 1988 have the option of completing the major under the old requirements presented below or under the old requirements listed in the 1986-87 General Catalog. Eligible students who wish to complete the Spanish major under the old requirements must do so by August 1991. No B.A. degrees in Spanish completed under the old requirements will be awarded after August 1991.

Elementary and intermediate courses in Spanish Intermediate five performance goals—listening, reading, speaking, writing, and cultural knowledge—in a staged progression that has an overall goal of developing oral proficiency. Emphasis is given to the acquisition of Spanish language skills in communicative contexts, the 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 Portuguese language and literature. In addition to studies in Spanish language and Spanish-American literature and culture.

Language and Linguistics

Designated for students interested in pursuing a career as a teacher of Spanish language and culture, and for students who want to prepare themselves for graduate work in Spanish linguistics, the Spanish-American literature and culture. The Latin American studies track requires a minimum of 34 semester hours of credit in course work, distributed as follows:

<table>
<thead>
<tr>
<th>Language and Linguistics Track</th>
<th>3 s.h.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spanish, Portuguese, or Spanish-American literature</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>At least 15 semester hours must be taken from classes listed below; at least 2 of the three groups of courses must be represented.</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>341:106 Problems in Spanish Grammar</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>341:157 Spanish Language I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>341:150 Spanish Language II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>341:151 Spanish Language III</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>341:110 Linguistics</td>
<td>3 s.h.</td>
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<tr>
<td>341:121 Pedagogical Applications of Linguistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>341:131 History of the Spanish Language</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>Portuguese</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>341:100 Accelerated Portuguese</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>341:109 Portuguese for the Professionals</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>341:102 Topics in Portuguese Language</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

The remaining 6 semester hours of elective courses must be taken at the 300 level or above. The Department of Spanish and Portuguese or the Department of Linguistics.

No more than 6 of the 34 semester hours required for the language and linguistics track may be taken in English.

Latin American Studies Track

Designed for students interested in pursuing a career as a teacher of Spanish-American and Brazilian culture, the Latin American studies track requires a minimum of 34 semester hours of credit in course work, distributed as follows:

<table>
<thead>
<tr>
<th>Latin American Studies Track</th>
<th>3 s.h.</th>
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</thead>
<tbody>
<tr>
<td>Spanish-American culture</td>
<td>6 s.h.</td>
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<tr>
<td>At least 15 semester hours must be taken from classes listed below; at least 2 of the three groups of courses must be represented.</td>
<td></td>
</tr>
<tr>
<td>Language</td>
<td>3 s.h.</td>
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<tr>
<td>341:106 Problems in Spanish Grammar</td>
<td>3 s.h.</td>
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<tr>
<td>341:157 Spanish Language I</td>
<td>3 s.h.</td>
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<tr>
<td>341:150 Spanish Language II</td>
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<tr>
<td>341:110 Linguistics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>341:121 Pedagogical Applications of Linguistics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>
Spanish Language, an honors essay in Spanish, and an oral examination conducted in Spanish.

Minor in Spanish
A minor in Spanish requires 15 semester hours of course work in Spanish with a minimum grade point average of 2.0, of which must be taken at the University of Iowa or in a University of Iowa foreign study program in courses numbered 100 and above. The following courses may not be applied toward the minor requirements:

25:101 Accelerated Elementary Spanish
25:102 Accelerated Intermediate Spanish
10:105 Language Teaching Practicum
25:115 Methods: Foreign Language Instruction

No more than 3 semester hours may be applied toward the minor from departmental courses taught in English.

Transfer Credit:
A maximum of 12 semester hours of credit in approved courses may be transferred from other institutions toward the requirements for the major in Spanish.

International Business Certificate
The College of Liberal Arts and Business Administration offers a joint program leading to a Certificate in International Business. The program explores study of international business and economics, international relations, and literature, a foreign language, such as Spanish or Portuguese, and related area studies. It is designed not only for students who intend to pursue careers in international business, but also for those interested in gaining a better understanding of the global economy and a broader awareness of the political, historical, and social environments in which international business operates.

The wide range of disciplines in the program provides students to tailor areas of specialization to their interests and to complement majors in both liberal arts and business administration.

For further information, see the Office of Academic Programs in the College of Business Administration section of the Catalog. Contact the Office of Academic Programs in the College of Business Administration (214 Schaeffer Hall) or the Liberal Arts Office of Academic Programs (115 Schaeffer Hall).

Forexen Study Programs
The department participates in study abroad programs. For summer programs see the Iowa Regents' Language Institute (Highland, Spain) and the UC Summer Program in Mexico.

Included in its semester or year-long programs are the CIEE Language and Area Study Programs (Olmec, Spain), the CIEE Language and Society Program (Seville, Spain), the CIEE Business and Society Program (Seville, Spain), the CIEE Language and Continents Area Study Programs (faulty, dormant, and ethnic), and the University Studies in the Foreign Country Consultants (San Sebastian, 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. Interested students should contact the department's study-abroad advisor.

Bachelor of Arts in Portuguese
Beginning courses in Portuguese are for students without previous foreign language study or experience. Classes are small, providing for a good deal of individual attention in an informal language-learning environment. Course content, teaching, and comprehending basic Brazilian Portuguese, they incorporate cultural material in the form of film and music.

The B.A. in Portuguese requires four courses in the language: for a total of 27 semester hours of course work beyond the second-year course, Portuguese students must have at least 21 semester hours of upper-level Portuguese in residence, below which may be counted toward the 27 semester hours.

Preliminary Courses:

68:1 Elementary Portuguese 1 4 s.h.
68:2 Elementary Portuguese 2 4 s.h.
68:100 Advanced Portuguese 0 s.h.
68:11 Intermediate Portuguese 1 3 s.h.
68:12 Intermediate Portuguese 2 3 s.h.
68:105 Brazilian Literature I 3 s.h.
68:106 Brazilian Literature II 3 s.h.
68:107 Introduction to Portuguese Literature 3 s.h.
34:314 Culture and Civilization of the Portuguese-speaking World 3 s.h.
35:22 topics in Portuguese 3 s.h.

Languages (upper-division language) 3 s.h.

Grades in these (6 s.h.): 3 s.h.

112 Topics in Ibero-Brazilian Literature 3 s.h.
116 topics in Portuguese 3 s.h.
117 topics in Portuguese 3 s.h.
118 topics in Portuguese 3 s.h.
121 topics in Portuguese 3 s.h.

Forexen Study Programs
The department participates in study abroad programs. For summer programs see the CIEE Language and Area Study Programs (Olmec, Spain), the CIEE Language and Area Study Programs (Olmec, Spain), the CIEE Language and Society Program (Seville, Spain), the CIEE Business and Society Program (Seville, Spain), the CIEE Language and Continents Area Study Programs (faul...
Minor in Portuguese
A minor in Portuguese requires 15 semester hours of course work in Portuguese with a minimum grade-point average of 2.0, of which must be taken at The University of Iowa or in an equivalent foreign language study program in courses numbered 100 and above.

Courses for Undergraduate Nonmajors
Undergraduate students in other disciplines may meet part of the College of Liberal Arts and Sciences Education Requirements in humanities and foreign civilization and culture with 30-30 Contemporary Latin American Narrative and 30-30 Contemporary Brazilian Narrative, in which the readings are in English. The department offers several other literature-, film-, and cultural survey courses that are taught in English and are of general interest.

Latin American Studies Certificate
The department plays an important and active role in the Latin American Studies Program, an interdisciplinary undergraduate program in the fields of history, politics, social organization, economy, 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 readings in the language before enrolling in the course. Students may fulfill the foreign language requirement in the Latin-American Studies Program, see "Latin American Studies Program" in this section of the Course Descriptions.

Graduate Programs
Master of Arts in Spanish
Candidates for the M.A. degree must complete the equivalent of the undergraduate Spanish major with at least a 3.0 grade-point average in course work for the major. Deficiencies may be remedied with the appropriate course work.

The following course work is required.

30-20 Foreign Language Teaching Methods 3 s.h.
Spanish Language and Linguistics (200 level) 6 s.h.
Spaish literature 6 s.h.
Spanish American Literature 6 s.h.

At least 15 semester hours of elective courses at the 200 level or the advanced 100 level, no more than 6 semester hours of which may be taken outside the department, are required. A minimum of 36 semester hours of M.A. program.

Maximum Study Loads
Maximum course registration is 16 graduate semester hours during fall or spring semesters and 8 graduate semester hours during summer sessions. One-quarter- and one-third-time teaching assistants are permitted to register for the maximum study loads. One-half-time teaching assistants may register for no more than 12 semester hours in fall or spring semesters, and for no more than 6 quarter hours during summer sessions. Antitribal semester hours may be taken only with Graduate College approval.

Transfer Credit
A maximum of 3 semester hours of graduate credit in approved courses may be transferred from other qualifications toward the 36-semester-hour requirement for the M.A. degree.

Teaching Certification
Exemption of the student-teaching requirement graduate students may take the course entitled for secondary teaching certification while completing M.A. requirements in the department.

Examinations
The M.A. comprehensive examination is administered in both written and oral parts. The written portion consists of a two-hour examination in each of the candidate's three areas; an oral examination follows, usually lasting one and one-half hours. The candidate may choose to be examined in one linguistics and two literature areas, one linguistics and two literature areas, or three literature areas. If more than one literature area is represented, at least one must be in Spanish-American literature. At one time at least one must be in Spanish-American literature. At least one must be in Spanish-American literature. At least one must be in Spanish-American literature. At least one must be in Spanish-American literature. At least one must be in Spanish-American literature. At least one must be in Spanish-American literature. At least one must be in Spanish-American literature.

Two additional areas in either linguistics or literature areas. The examining committee is composed of four departmental faculty members.

Doctor of Philosophy in Spanish
Two doctoral programs are available. The first is dedicated to Hispanic literature. 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 the literature in limited areas of specialization. The program is especially recommended. The program is especially recommended. The program is especially recommended. The program is especially recommended. The program is especially recommended. The program is especially recommended. The program is especially recommended. The program is especially recommended. The program is especially recommended.

The second doctoral program provides a specialization in Spanish linguistics. Before taking the comprehensive examination, candidates must complete the equivalent of two years of college (Latin, the equivalent of three years of college Portuguese, and the equivalent of at least 10 hours 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 36 s.h.
A course in literary theory, 200 level or above 5 s.h.
Two 300-level seminars 6 s.h.
30-200 Thesis 3 s.h.

Eight elective courses at the 200 level or the advanced 100 level, no more than 3 (9 s.h.) of which may be taken outside the department, bringing the total semester hours to the requisite 72 hours in the Ph.D. program.

Program II: Linguistics Track
The following course work is required:

M.A. courses or equivalent transfer credits 36 s.h.
Department of Linguistics: 100-110 Articulatory and Acoustic Phonetics 3 s.h.
101-111 Syntactic Analysis 3 s.h.
102-112 Psycholinguistic Theory and Analysis 3 s.h.
103-112 Syntactic Theory 3 s.h.

One course in advanced Spanish syntax 3 s.h.
One course in advanced Spanish phonology 3 s.h.
One course in comparative Romance linguistics 3 s.h.
One additional course in Spanish dialectology 3 s.h.
Two additional courses in linguistics (in the Department of Linguistics) 6 s.h.
Two 300-level seminars in Spanish linguistics 6 s.h.
30-200 Thesis 3 s.h.

Total semester hours required 75 s.h.

Ph.D. Qualifying Examination
All doctoral students are admitted 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 ascertain a doctoral student's potential for scholarly research, abilities in analytical thinking and critical reasoning, and level of sophistication in literary or linguistic argumentation. The exam may cover the formal criteria on which doctoral students begin to gain intellectual
Requirements

The B.S. or B.A. degree in speech and hearing science requires a minimum of 30 semester hours. The required courses as follows:

3.15 Introduction to Speech and Hearing Processes and Disorders 3 s.h.
3.17 Fundamentals of Speech Science 1.5 s.h.
3.18 Introduction to Hearing Science 1.5 s.h.
3.19 Psychological Language 1.5 s.h.
3.18 Language Development 3 s.h.
7.141QS(J) Introduction to Statistical Methods 3 s.h.
3.25 Basic Psychology and Research 3 s.h.
3.18 Language Development 3 s.h.
3.2 101 Auditory and Acoustic Phonetics 3 s.h.

Graduate Programs

Master of Arts

The M.A. program in speech-language pathology and audiology may be a 2-year program to prepare the student for immediate employment in clinical and research positions, or it may be a general program of graduate study leading to additional study for the Ph.D. degree. The program of study for the M.A. with professional emphasis is designed to ensure that upon graduation, the student will meet the requirements for immediate professional employment.

Students may substitute one course in the following:

3.34 Introduction to Child Psychology 1 s.h.
3.35 Development of Children's Social Behavior 3 s.h.
3.36 Learning and Motivation in Children 3 s.h.
3.37 Cognitive Development of Children 3 s.h.
3.38 Growth and Development of the Young Child 3 s.h.
3.39 Child Development 3 s.h.
3.36 Developmental Disabilities 3 s.h.
3.37 Behavior Modification 3 s.h.

Graduate Programs in Speech-Language-Hearing Association and for licensure by the state of Iowa.

M.A. Program for the 2023-2024 academic year.

Graduate Programs in Speech-Language-Hearing Association and for licensure by the state of Iowa.

M.A. Program for the 2023-2024 academic year.

M.A. Program for the 2023-2024 academic year.
3.100 Counseling Theories and Techniques (3 hrs.)
3.109 Counseling for Related Professions (3 hrs.)

3.510 Seminar: Introduction to Research in Speech and Hearing (3 hrs.)
Advanced seminars, workshops, and readings.

3.519 Concentration in Practice (3 hrs.)
Practitioner, agency, and local issues and concerns.

A minor equivalent undergraduate course may be accepted as meeting requirements.

All students preparing to be speech-language pathologists must take a minimum of 14 semester hours from the following:

3.182 Phonological Development and Disorders (3 hrs.)
3.183 Stuttering (3 hrs.)
3.213 Principles of Voice Production (3 hrs.)
3.232 Methods of Teaching Voice (3 hrs.)
3.265 Speech and Language Disorders of Young Children: Birth to Five Years (3 hrs.)
3.275 Speech and Language Disorders of Older Children: Five to Eighteen Years (3 hrs.)
3.277 Remedial Methods in Speech and Hearing (3 hrs.)

Total: 10 hrs.

Recommended:
3.206 Communication Problems of Developmental Disorders and Disabilities (3 hrs.)
3.215 Developmental Aplasia of Speech (3 hrs.)
3.261 Augmentative Communication (1 hr.)

Hospital and Health Agencies Track

3.302 Voice Disorders (3 hrs.)
3.303 Communication Problems Associated with Head and Neck Cancer (3 hrs.)
3.306 Neurogenic Disorders of Speech (3 hrs.)
3.307 Aphasia and Related Disorders (3 hrs.)
3.308 Computer-aided Technology for Augmentative Communication (1 hr.)
3.350 Preceptorship in Augmentative Communication (1 hr.)

Total: 9 hrs.

Recommended:
3.182 Phonological Development and Disorders (3 hrs.)
3.213 Voice and Language Disorders of Young Children: Birth to Five Years (3 hrs.)
3.275 Speech and Language Disorders of Older Children: Five to Eighteen Years (3 hrs.)
6.144 Remedial Methods in Speech and Hearing (3 hrs.)

Recommended:
3.232 Principles of Voice Production (3 hrs.)
3.265 Speech and Language Disorders of Young Children: Birth to Five Years (3 hrs.)
3.206 Communication Problems of Developmental Disorders and Disabilities (3 hrs.)
3.215 Developmental Aplasia of Speech (3 hrs.)
3.261 Augmentative Communication (1 hr.)

Hospital and Health Agencies Track

3.302 Voice Disorders (3 hrs.)
3.303 Communication Problems Associated with Head and Neck Cancer (3 hrs.)
3.306 Neurogenic Disorders of Speech (3 hrs.)
3.307 Aphasia and Related Disorders (3 hrs.)
3.308 Computer-aided Technology for Augmentative Communication (1 hr.)
3.350 Preceptorship in Augmentative Communication (1 hr.)

Vocology Track

Required:
3.361 Principles of Vocology (3 hrs.)
3.375 Voice Disorders (3 hrs.)
3.302 Communication Problems Associated with Head and Neck Cancer (1 hr.)
3.206 Communication Problems of Developmental Disorders and Disabilities (3 hrs.)
3.350 Preceptorship in Vocology (1 hr.)

Recommended:
3.361 Principles of Vocology (3 hrs.)
3.375 Voice Disorders (3 hrs.)
3.302 Communication Problems Associated with Head and Neck Cancer (1 hr.)
3.206 Communication Problems of Developmental Disorders and Disabilities (3 hrs.)
3.350 Preceptorship in Vocology (1 hr.)

Vocology Track

Required:
3.361 Principles of Vocology (3 hrs.)
3.375 Voice Disorders (3 hrs.)
3.302 Communication Problems Associated with Head and Neck Cancer (1 hr.)
3.206 Communication Problems of Developmental Disorders and Disabilities (3 hrs.)
3.350 Preceptorship in Vocology (1 hr.)
including their Remedial Methods in Speech and Hearing and student teaching/Internship in speech-language pathology or audiology. Courses in the following areas may be recognized for meeting the professional education sequence.

Curriculum (e.g., reading, methods, curriculum design)
Foundation (e.g., philosophy of education, foundations of education)
Educational measurement (e.g., tests and measurements, assessments and measures of instruction)
Educational psychology (e.g., educational psychology, counseling theories and techniques)
Special education (e.g., introduction to special education, exceptional persons, learning disabilities, etc.)
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, history, 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 education of the handicapped and the gifted and talented (e.g., exceptional persons, education of the gifted).

Doctor of Philosophy
The Ph.D. program provides research, comprehensive training for the scholar-researchers interested in communication processes and their disorders. Students with diverse backgrounds in the natural and behavioral sciences are encouraged to apply and develop their skills in an atmosphere of interdisciplinary research.

The program reflects the broad interests and diverse backgrounds of the faculty. Workers in speech, language, hearing, engineering, physiology, physics, psychology, linguistics, and bioengineering are committed to an interdisciplinary approach to questions at every level of the speech and language production-reception system. The purpose of the doctoral program is to provide the interdisciplinary knowledge necessary for a productive career in the field of speech-language pathology and audiology, communication-audio disorders and related areas.

The department encourages candidates with special interests, goals, or backgrounds to develop individualized programs of study. There are no required courses for the Ph.D. degree; rather, a program of study is developed by each student in consultation with a faculty advisor. The courses of study is developed from the courses offered in this department, those in other areas (e.g., physics, engineering, psychology, mathematics, statistics, physiology, neurology, anatomy, and others) and special reading and research experiences. The courses offered by the department primarily for the Ph.D. student include the following (students interested in the specific areas of research and selected publication citations of the faculty are encouraged to write the department directly).

- 3102 Fundamentals of Laboratory Instrumentation
- 3101 Principles of Voice Production
- 3126 Language Acquisition
- 3128 Psycholinguistics
- 3129 Advanced Laboratory Instrumentation
- 3124 System and Signal Theory (for Speech and Hearing Sciences)
- 3129 Speech Perception
- 3190 Acoustics and Bioacoustics of Speech
- 3292 Physiology of Speech Production
- 3294 Psychoacoustics
- 3255 Psycholinguistics Laboratory
- 3146 Physiology of Hearing
- 3148 Digital Signal Processing
- 3115 Issues and Methods of Clinical Research
- 3130 Proseminar
- 3192 Seminar: Developmental Language Disorders
- 3191 Seminar: Stuttering
- 3192 Seminar: Voice
- 3192 Seminar: Civil Strata
- 3192 Seminar: Retaliation
- 3292 Seminar: Neuropsychology of Speech and Language
- 3293 Seminar: Communication Disorders and Aging
- 3293 Seminar: Speech Science
- 3293 Seminar: Psycholinguistics
- 3293 Seminar: Psychosocials
- 3293 Seminar: Experimental Audiology
- 3293 Seminar: Clinical Audiology
- 3293 Seminar: Audiology Physiology
- 3293 Seminar: Research

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 3:35 Proseminar.

The department encourages students who have not written a thesis to complete the equivalent of a master's thesis project as well as the comprehensive examination. They also must successfully complete and submit a dissertation based on original research.

Admission 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 the requirements is presented below. More detailed information is available from the department chair.

Application Form
All applicants for admission to graduate study in the Department of Speech Pathology and Audiology must complete the departmental information form, which can be obtained from the department chair.

Admission to the Program. A student must be able to

The department bases its admission on applicants' credentials relative to those presented by other applicants for the same term. While an undergraduate grade-point average of above 3.00 does not ensure admission, the department admits five 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 in special situations. 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 application is made. An average of approximately April 1 for summer session, July 1 for fall semester, November 1 for spring semester. However, applicants who wish to be considered for graduate study should apply at least six weeks after applications are complete.

Application for Graduate Appointments

The following information applies to all financial appointments administered by the department.

- Graduate appointments usually begin Fall term following the fall semester.
- Students beginning study in the spring semester or summer session are considered for appointments for the following fall semester.
- Students majoring in the Graduate Record Examination (GRE) who have taken the Test are routinely reviewed for consideration for financial assistance.
Advancing
Initial advising for theatre arts undergraduates is handled by a representative of the department. After a student has selected an area of interest, efforts are made to assign the student a faculty advisor in the chosen area. Students are not required to accept a particular advisor and may request a change at any time by scheduling an appointment with the theatre arts administrative assistant. Faculty advisors who have taught at least one semester are available upon request. Students may also be assigned to the theatre arts office, 147 Theatre Building.

Auditions
All theatre arts majors are required to audition in general auditions at the beginning of the fall semester. Students present a four-minute audition consisting of two contrasting pieces, one from material that is pre-1900. From this audition, callbacks are posted for the audition series the following week. Students are notified and information is available from the theatre arts office, 147 Theatre Building.

Degree Requirements
The following courses comprise the basic experience for all undergraduate theatre arts majors. Students who demonstrate readiness/precursory for higher level work may petition for advanced standing by notifying their advisor. It is the responsibility of each area to see their own criteria for evaluation and approval for advanced standing. Students who want to be considered for special emphasis programs must seek the guidance of the head of the appropriate program(s).

Minimum Requirements
Completion of a minimum of 27 semester hours, including the following courses, and a 2.0 grade point average for all core/ major courses in the major are required.

THEATRE ARTS

Bachelor of Arts
The major in theatre arts provides a liberal arts education and preparation for professional or educational work in the theatre. The B.A. degree provides a strong background in theatre arts and dramatic literature with requirements and electives in the major interest areas of acting, design, directing, and playwriting.

Undergraduate Program
Statistics and Actuarial Science
See "Division of Mathematical Sciences."

Theatre Arts
Chair: Cathy A. Cappel
Professors: Michael G. Addis, David Hatcher, Adrienne Haines, Renee M. White
Associate Professors: John J. M. Aiken, Charles E. Hanks
Assistant Professor: Lee A. J. S. Smith

Graduate degree offered: M.F.A. in Theatre Arts

15036: Undergraduate Program
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Playwriting Emphasis
Head of playwriting:
4102 Basic Playwriting 3 s.h.
4107 Advanced Playwriting 3 s.h.
4122 Acting II 3 s.h.
4148 Directing II 2 s.h.
Three of these (total 9 s.h.): 4 s.h.
4114 Contemporary Theatre 3 s.h.
4119 Directing III 3 s.h.
4167 The Musical 4 s.h.
4168 Adaptation 3 s.h.
4164 Playwriting for Other Media 3 s.h.
4166 Dramaturgy 3 s.h.
4169 Playwriting: The Docudrama 3 s.h.
Final project: a full-length play or its equivalent in shorter works. One
three-act scene must be submitted for the faculty.

Transfer Students
Students who transfer to The University of
Iowa from other accredited two- or
four-year institutions must demonstrate
that they have successfully completed course
work equivalent to the basic requirements
of the theatre arts department and the
University before they may undertake
advanced-level electives or seek admission
to a special emphasis program.

Honors
The Honors Program entails the completion of
courses offered under the supervision of
a faculty member. Projects may be
analytical or creative or an appropriate combination of the two. All require an oral
presentation or performance for the faculty.
Senior majors who qualify the College of
Liberal Arts Honors Program and have earned a 3.00 in the major are, with
the approval of the faculty, qualified to
undertake an honors project. Students
wishing to complete an honors project meet with the departmental honors advisor, who advises
them on finding an appropriate faculty
project advisor, preparing and
accepting an original (or written paper); preparing and presenting
of the work; and evaluating the outcome.

Minor
A minor in theatre arts requires 15
semester hours of course work in theatre
arts with a minimum grade-point average of
2.00. Twelve of these semester hours must be
taken in advanced course work at The
University of Iowa. Any course in the
department—including 4162 Theatrical
Society, 4930 Basic Acting, and 4991
Production—may be used as advanced
course work for the minor.

Graduate Program
Master of Fine Arts
The M.F.A. programs are focused on the
creative development of theater majors.
Graduates have a solid background in
major performance theories, dramatic literature and writing, and are
prepared to enter many fields in the
theatrical arts and present as well as in the craft of their
chosen specialties. Particular attention is
given to understanding the role and
importance of live theater in society.
Interactions among the various disciplines of the theater are explored and the
cooperative nature of theater is
emphasized both in classes and through the extensive production programs.

Students who demonstrate exceptional
ability in acting directing, playwriting, design, technical direction, or production
management may apply for admission
to the program of study and production
leading to the M.F.A. Admission is based on interview, audition, and/or a portfolio of
relevant artistic work in addition to the
required number of graduate credits in the individual programs, a 3.00 grade-point average, and a record of
substantial creative work of high quality.

Students must make normal progress
toward the completion of the degree requirements to remain in the program.

Students who fail to make normal progress are placed on academic probation and given one
term to demonstrate their qualifications for earning the degree.

Specific information on any of the M.F.A. programs may be obtained from the
Department of Theatre Arts.

Facilities
The University of Iowa has one of the finest
educational theater complexes in the country. The theatre buildings include three
theatres and up-to-date facilities for classroom, laboratory, shop, and
performance work.

The E. M. Blake Theatre, a continental-style, 470-seat proscenium playhouse, is one of
the finest theatres of its type in the United
States. Theatre A, "black box" or production space. Flexible seating units that
accommodate from 169 to 225 people allow
modifications of space and audience
relationships. Theatre B, which seats 144, is an open stage theater dedicated primarily to
the production of new and experimental
works from the Iowa Playwrights Workshop.
All three theatres are equipped with
state-of-the-art digital lighting control and
sound reproduction systems.

In addition to special classrooms for acting and
directing, several spaces are designed for
the observation and participation in
graduate seminars.
transportation deficiencies are growing, the quality of life for many citizens is unacceptable low, serious transportation issues exist, and extensive changes are needed in traditional transportation institutions.

Transportation deficiencies must draw on a number of disparate skills to respond to the challenges they face. They are required to analyze and forecast the movement of people and goods within and between cities; identify the most efficient means for providing needed transportation services; price these services properly; and evaluate the effects of changes in transportation services or policies on land use, environmental quality, the local or regional economy, and various subgroups within society.

Graduate Programs

Certificate

No single discipline can supply all of the theories, principles, and methods needed to address the varied and complex problems in transportation. Recognizing this, three academic units at The University of Iowa participate in an interdisciplinary transportation program. The Department of Civil and Environmental Engineering, the Master of Geographic, and the Graduate Program in Urban and Regional Planning have established a graduate certificate program, which enables students in these academic units to obtain an additional professional degree along with their graduate degrees.

The Transportation Certificate program is coordinated by the Center for Transportation Studies and operated in conjunction with the Midwest Transportation Center, a consortium of The University of Iowa and Iowa State University. Completion of the requirements for a certificate is documented on the student’s transcript. The course 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 certification may apply for admission as a Midwest Transportation Center Graduate Scholar. They are required to complete an integrated system course offered jointly by the two consortium universities, and must participate in a research seminar that requires commitment to 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 Master of Science and Doctor of Philosophy levels. The M.S. degree may be earned either without thesis, requiring a minimum of 30 semester hours of credit, or with thesis, a 30-semester-hour program that includes up to 6 semester hours of credit for thesis research. Master’s students usually are required to complete a research paper based on independent study and must defend the paper in an oral examination.

The Ph.D. degree involves a minimum of 72 semester hours beyond the B.S. degree, with up to 12 semester hours earned for dissertation research. A minimum of 36 hours 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, simulation, mathematics, and operations research without being able to apply the course credit to semester hours needed for the degree program.

A typical master’s level program includes the following courses:

First Semester
53.282 Urban Transportation Planning 3 s.h.
102.260 Transportation Policy and Planning 3 s.h.
102.369 Transportation Program Seminar 1 s.h.
44324 Methods of Transportation Analysis 3 s.h.
Technical elective 3 s.h.

Second Semester
53.163 Transportation Systems Analysis 3 s.h.
102.260 Problems in Transportation and Land Use 3 s.h.
102.369 Transportation Program Seminar 1 s.h.
44:266 Travel Demand Modeling 3 s.h.
One of the following courses:
53.199 Research Civil and Environmental Engineering M.S. Thesis 3 s.h.
Statistics 3 s.h.
Planning elective 3 s.h.
Integrated transportation course 3 s.h.

Third Semester
53.198 Individual Investigations: Civil and Environmental Engineering 3 s.h.
53.199 Research Civil and Environmental Engineering M.S. Thesis 3 s.h.
Technical elective 3 s.h.
102.369 Transportation Program Seminar 1 s.h.
Technical electives are advanced courses in engineering operations research, computer-aided design, or economics. Specific course requirements are sufficient for instructions to a student’s graduate schedule and desired area of specialization. Appointments should be made through the Graduate College and the Department of Civil and Environmental Engineering.

Degree Programs in Geography

The Department of Geography offers Master of Arts and Doctor of Philosophy degrees with a specialization in transportation systems analysis. The transportation specialty draws on the resources of the College of Engineering, the Graduate Program in Urban and Regional Planning, the Department of Economics, and Geography. The specialty has a strong quantitative orientation and is designed to provide students with a broad range of skills relevant to transportation and urban and regional analysis. It also helps students develop an appreciation of political and organizational considerations affecting transportation systems and of the exigencies of practical problem solving.

M.A. students typically take five courses in transportation and urban and regional analysis, three quantitative methods courses, and four additional courses in geography or economics. The M.A. degree is available with or without a thesis. If a thesis is prepared, it can substitute for two of the courses. Students who have studied calculus, and who have statistical coursework can complete the master’s program in four semesters. Students who have not studied calculus or undergraduates who have not had statistical coursework may require an additional one or two semesters to complete the program.

A typical master’s level program includes the following courses:

First Semester
102.260 Transportation Systems Analysis 4 s.h.
102.260 Transportation Policy and Planning 3 s.h.
102.269 Transportation Program Seminar 1 s.h.
44324 Methods of Transportation Analysis 3 s.h.
Technical elective 3 s.h.

Second Semester
53.165 Introduction to Economics 3 s.h.
102.150 Analysis in Transportation and Land Use 3 s.h.
102.150 Research Seminar Staff 1 s.h.
53.157 Economic Theory of Location 3 s.h.

Third Semester
44:266 Travel Demand Modeling 3 s.h.
44:300 Research Seminar Staff 1 s.h.

Fourth Semester
53.282 Urban Transportation Planning 3 s.h.
102.260 Transportation Policy and Planning 3 s.h.
53.282 Urban Transportation Planning 3 s.h.
44:275 Location Analysis, Regional Science 3 s.h.
Degree Programs in Urban and Regional Planning

The Graduate Program in Urban and Regional Planning offers Master of Arts and Master of Science degrees with a sectoral major in transportation. During the first year, students complete an integrated core curriculum, consisting of courses in planning economics and public finance, analytic methods, planning theory, collective decisions making, law, and information presentation. The second year is devoted to a sectoral major, such as transportation, wherein core concepts are applied to a chosen area of specialization. The planning curriculum is intended to provide students with the capability to examine policy issues in transportation, devise workable options, evaluate these optional courses of action, and work toward implementation of policy solutions. Planning students complete a total of 48 semester hours and an internship. Twenty-seven semester hours are accounted for by the core, the sectoral major constitutes a minimum of 9 semester hours, and the remaining 12 semester hours must complete the remaining hours. If the thesis option is selected, up to 6 semester hours of sectoral major credits are available. Students may select a different course load. The remaining 2 semester hours of course work is in lieu of an internship, bringing the total to 50 semester hours.

A typical transportation sectoral major program includes the following courses:

First and Second Semesters

Core courses (See "Urban and Regional Planning" in this section of the Catalog)

Third Semester

Planning Electives

Two of the following courses:

UNIFIED PROGRAM

Coordination: Philip C. Kates
Faculty: Steven DeGregorio (English), Miriam Gilbert (English), Max Henderson (American World Studies), Sydney V. Jones (History), Philip C. Kikut (Mathematics), Eugene W. Madison (Mathematics), Doug Maxwell (Physical Sciences), Gerald K. Randel (English), Don Mooney (History), Teresa M. Moore (Business), Donald Piggott (Chemistry), William Reagin (Political Science), Mansour Roberts (History), Rebecca Salmon (History), Richard Smith (Business)

Unified Program (UP) is a four-semester series of integrated general education courses for a small group of students who begin the program as entering freshmen. 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 interchangeable with an equivalent approved course. Students in sections A and B must complete for the 103 UP students in section II must be completed for 183 UP honors and for calculus. All students in section II take the courses offered for the A or B version in a given semester. Students may have the program at any time and satisfy the General Education Requirements in other ways, but only first-semester freshmen may enter UP.

Version A

Freshman Year

Fall semester:

190-45 Humanities I

190-40 Publics I

190-30 Rhetoric

Spring semester:

190-44 Humanities II

190-40 Publics II

190-50 Basic Mathematics

Sophomore Year

Fall semester:

190-45 Humanities III

140-40 History I

140-57 General Chemistry I

Spring semester:

140-43 Human Biology

140-50 History II

Version B

Freshman Year

Fall semester:

140-70 UP Science Seminar

140-45 Calculus

Spring semester:

140-70 UP Science Seminar

140-73 Interpretation of Literature

*Natural sciences elective*
planners find themselves in demand for such diverse jobs as community energy management specialist, regional transit planner, environmental analyst with a state pollution control agency, public facilities planner with an engineering firm, economic development planner for rural communities, state public health planner, planner with a nonprofit neighborhood housing organization, state legislative analyst, and human service planner.

The University of Iowa planning program is a two-year master's program fully accredited by the Planning Accreditation Board. The program is built on the premise that planners must be educated in methods of policy analysis and that there is a correspondence between body of knowledge in the core curriculum, that provides a solid foundation for specialization in the field.

As an independent academic unit administratively aligned with the Graduate College, the program has benefited from an opportunity to develop its curriculum and for its interests without the constraints imposed by affiliation with another discipline or professional field.

Faculty and students in the University's planning program have a wide range of experience and prior education. Academic backgrounds of the faculty include planning, public policy, economics, operations research, geography, engineering, political science, and law. The program's students have diverse undergraduate majors, including economics, political science, geography, architecture and landscape architecture, environmental sciences, engineering, anthropology, sociology, urban studies and planning, English, folklore, history, classics, and philosophy. Usually, about one-third of the program's 40 to 50 graduate students are women. A large part of the common core of courses, students get to know each other quickly, a significant portion of the educational experience takes place in informal discussion. Recent graduates of Iowa's planning program have assumed positions with city, metropolitan, and regional planning agencies, in state and federal government, and in the private sector. The past several years' graduates took positions in all geographic regions of the United States and in several foreign countries.

Graduate Programs

Planning encompasses the development of public policy alternatives to improve the quality of life in cities and regions. Planning is a dynamic and changing field. Today

Effectively in various organizational and political environments.

Core Curriculum

At the heart of the University of Iowa planning program is a unique and integrated core curriculum, which occupies the first academic year. The function of the core is to develop an understanding of the institution—the social, economic, political, administrative, and legal systems—that provide the context for policy analysis and constrain public choice; a capability for identifying social goals and normative criteria for evaluating public policies; and analytic skills—both quantitative (e.g., statistics, forecasting, surveys, regional analysis) and nonquantitative. In total, the core accounts for 27 semester hours.

Courses in the first semester are derived primarily from traditional disciplines—particularly economics and statistics. Together with an introduction to the theories and practice of planning, an introduction to the body of knowledge in the core curriculum, that provides a solid foundation for all specializations in the field.

As an independent academic unit administratively aligned with the Graduate College, the program has benefited from an opportunity to develop its curriculum for its interests without the constraints imposed by affiliation with another discipline or professional field.

Academic backgrounds of the faculty include planning, public policy, economics, operations research, geography, engineering, political science, and law. The program's students have diverse undergraduate majors, including economics, political science, geography, architecture and landscape architecture, environmental sciences, engineering, anthropology, sociology, urban studies and planning, English, folklore, history, classics, and philosophy. Usually, about one-third of the program's 40 to 50 graduate students are women. A large part of the common core of courses, students get to know each other quickly, a significant portion of the educational experience takes place in informal discussion. Recent graduates of Iowa's planning program have assumed positions with city, metropolitan, and regional planning agencies, in state and federal government, and in the private sector. The past several years' graduates took positions in all geographic regions of the United States and in several foreign countries.

Graduate Programs

Planning encompasses the development of public policy alternatives to improve the quality of life in cities and regions. Planning is a dynamic and changing field. Today
Joint Programs

Law

The Urban and Regional Planning Program and the College of Law cooperate in administering a program that satisfies the degree requirements leading to an M.A. in planning and a J.D. in law. The program usually requires four years to complete, a reduction of one academic year from the total requirements of the two programs taken separately. It may be completed in less time if the student chooses the accelerated low program. Separate admission to each academic unit is required.

Law is the most popular of the joint degree programs. Students in the planning and law program typically seek employment in law firms—especially those that specialize in land use or environmental law, as city managers, as city attorneys, or as city planners or planning administrators.

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 career in planning in either the public or private sector. Planning encompasses the development of alternatives to improve the quality of life in cities and regions.

Planners devise courses of action in response to a variety of problems and opportunities and assess the likely outcome of these actions. They are involved in diverse fields such as public transit, low income housing, neighborhood preservation, environmental protection, infrastructure planning, economic development, revitalization, social services, and economic development.

Students in the program may acquire a B.S. in engineering and an M.A. or M.S. in planning in a total of five or more academic years. Students should apply for the joint program either when applying for admission to the engineering college or before they complete their sophomore year following matriculation. A letter requesting admissions to this program should be submitted by the student to the College of Engineering, The University of Iowa.

Students in this combined degree program should be aware of the admission requirements for the graduate planning program and should be prepared to meet these requirements when they apply for admission to the program. A low GPA in the B.S.E. degree requirements would inadvisable.

The curriculum is based on the philosophy that planners must develop the theoretical and analytical skills that permit them to identify issues and evaluate alternative ways of reaching their goals. In addition, planners must develop the professional skills (e.g., report writing, presentations and briefings, computer literacy, time management) that allow them to function effectively in various organizational and political environments. Students become well versed in topics such as economic theory, quantitative methods, information presentation techniques, and approaches to critical evaluation.

At the heart of The University of Iowa planning program is an integrated core curriculum. Its purpose is to provide a rigorous foundation for the analysis of public and social issues. The core program is completed by engineering students in the last two years of the undergraduate program. Section majors (areas of concentration) are organized around public policy problem areas. They include transportation, housing and community development, environmental quality, urban infrastructure, and economic development. Students fulfill the section major requirement by completing 9 semester hours of advanced courses offered by various departments and schools of the University, including the graduate planning program and the engineering college. They complete these courses after graduating from the College of Engineering and while enrolled in the graduate program in urban and regional planning.

Each student is assigned an advisor from engineering and one from planning. During the first four years of the program, students work primarily with their engineering advisor and the assistant to the dean of the College of Engineering. For the fifth year, students work with their graduate planning advisor.

Preventive Medicine and Environmental Health

A joint master's degree option exists with urban and regional planning and the Department of Preventive Medicine and Environmental Health in the College of Medicine. This option results in an M.A. in planning and an M.S. in preventive medicine and environmental health. Graduates will have the opportunity for employment in the public health field, with local health departments, hospitals, and other health services, or as health or environmental planners.

A total of 60 to 62 semester hours of credit is required; the degrees 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 leads to an M.A. in planning and an M.S. in hospital and health administration. Course work is reduced by one year from the separate requirements of the two programs. Separate admission to each academic unit is required.
The hospital and health administration department offers students the opportunity to acquire the skills necessary to hold positions as hospital administrators, hospital financial managers, or hospital consultants.

Economics
Students specializing in economic development, public utility planning, state fiscal analysis and planning, or other areas may wish to strengthen their skills in economic analysis by enrolling in the joint program with the Department of Economics. The combination of economics and applied policy analysis should be valuable for students who want to obtain jobs such as state economic development planner, analyst with a public utility regulatory commission, or fiscal analyst for a state legislature or revenue department.

The program requires a total of 50 to 63 semester hours of credit and usually can be completed in five semesters. 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 services planning, the joint program offers the opportunity to combine urban and regional planning and the School of Social Work, leading to an M.S.W. or an M.S.W. in social work. Planning positions are available with city planning agencies, nonprofit social service agencies, and state and federal government departments.

A total of 56 semester hours is required for the law degree. This is a reduction of 22 semester hours from the requirements of the two programs taken separately. It is possible to complete the program in three years, although some students may require an additional year. Students interested in completing 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, economics, geography, and economics. The certificate program allows students pursuing degrees in regional studies 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 various kinds of financial support: tuition scholarships, program, teaching or research assistantships, contract or grant-funded research assistantships, and internships in local agencies. All but minority scholarships typically require ten hours of work per week under the direction of a faculty member or professional planning staff. Minority initiatives applications for financial support, and awards are made on the basis of need, experience, and interest. The planning program has been successful in providing support in a majority of its students.

Admission
Admissions to the Urban and Regional Planning Program is open to students from any undergraduate major or area of concentration.

Admission is based on Graduate Record Examination (GRE) General Test scores (verbal, quantitative, and analytical), letters of recommendation, and students' academic record.

Applicants should submit the following items to the FSU Graduate School: application fee, GRE General Test scores, letters, and an official transcript. Applications are considered starting in January 15 for the fall semester; admission decisions are made starting in March 1.

Courses
1000 Cooperative Education Internship 3 a.h.
2000 Introduction to Planning and Policy 3 a.h.
2010 Development of plans in the United States and the evolution of planning as a career of public service. The problems that arise from urbanization, introduction of principles of planning, and the development of public policy in urban areas such as housing, transportation, economic development, and social services.
2030 Transportation Policy 3 a.h.
2031 Development of plans in the United States and the evolution of planning as a career of public service. The problems that arise from urbanization, introduction of principles of planning, and the development of public policy in urban areas such as housing, transportation, economic development, and social services.
2032 Urban Transportation Planning 3 a.h.
2033 Urban Transportation Planning 3 a.h.
2034 Urban Transportation Planning 3 a.h.
2035 Urban Transportation Planning 3 a.h.
2036 Urban Transportation Planning 3 a.h.
2037 Urban Transportation Planning 3 a.h.
2038 Urban Transportation Planning 3 a.h.
2039 Urban Transportation Planning 3 a.h.
Business Administration may not take business courses numbered above 100 pass/fail/optional.

Students majoring in business administration may substitute 60-004 Production Management for 60-112 Administrative Management.

The business administration major may not be combined with any other business major.

Minors

Nonbusiness Minors

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 transcript, students must complete the "minor" section on the B.B.A. degree application form before submitting it to the registrar early in the fall semester.

Business Minor

Students majoring in another college of the University may elect a minor in business administration. The courses listed below, or their equivalents, satisfy all requirements for the minor. At least 15 semester hours of courses taken for the minor must be completed at The University of Iowa. A grade-point average of at least 2.0 is required for majors in business and at least 2.0 in business courses taken toward the minor. Courses for the minor may not be taken P/N.

A computer programming course

3 s.h.

Business calculus (22M-1), 22M-35, or 22E-35

3-4 s.h.

Statistics (22M-22, 22M-22R, 22M-22S, or 22M-10)

3 s.h.

Econometrics (either 60-102 or 60-102X)

3-4 s.h.

Introduction to Accounting (either 60-101 or 60-102)

3 s.h.

Management Information Systems (60-110)

3 s.h.

Marketing Research (60-112)

3 s.h.

The requirements for the major in business administration are as follows.

Six business courses (15 s.h.) numbered above 100, including at least four of these:

6A-112 Taxation and Business Decisions

3 s.h.

6F-102 Microeconomics

3 s.h.

6F-103 Intermediate Financial Management

3 s.h.

6G-101 Personnel Management

3 s.h.

6G-102 Individual Behavior in Organizations

3 s.h.

6K-180 Management Information Systems

3 s.h.

6M-114 Marketing Research

3 s.h.

In addition to the required grade-point average listed above, students in this minor must have a grade-point average of at least 2.0 on all courses taken from the lists above and on all business courses numbered above 100. Students in this major

The College of Business Administration is made up of six academic departments: accounting, economics, finance, management and organization, marketing, and taxation.

The undergraduate and graduate programs of the college are supported by the internal resources of the college's Executive Development Center, Financial Markets Institute, Industrial Relations Institute, Institute for Economic Research, Management Center, Manufacturing Productivity Center, Institute for Entrepreneurial Management, Six B. McGraw-Hill 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.) degree in all six departments and in business administration. B.B.A. students complete background in two or three fields in the College of Liberal Arts and Sciences in the College of Business Administration.

The college's B.B.A. curriculum requires 120 semester hours. Students may complete 48 semester hours in business courses and at least 48 in nonbusiness courses. Limited specialization is effected through the student's designated major.

The last 30 (or 45 of the last 60) 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 12 of the semester hours of credit or the student's major must be earned at The University of Iowa.

Nonresident instruction includes course work at colleges and universities other than The University of Iowa and all work by correspondence, including University of Iowa Credit Correspondence Study courses.

To graduate, B.B.A. candidates must have at least a 2.0 grade-point average in all college course work, in all course work attempted at The University of Iowa, in all business course work attempted, in all business course work attempted at The University of Iowa, in all course work attempted in the major, and in all course work attempted at The University of Iowa in the major.

Common Requirements

B.B.A. candidates must satisfy these minimum course requirements:

- English (either English 101 or 102) 4-5 s.h.
- Business Calculus (22M-17 and 22M-18) Quantitative Methods 1 and 2 6 s.h.
- Business Calculus (22M-25, 22M-26, and 22M-120) 6 s.h.
- Principles of Microeconomics 3-4 s.h.
- Principles of Macroeconomics 3-4 s.h.
- Principles of Financial Accounting 3 s.h.
- Industrial Accounting 3 s.h.
- Managerial Cost Accounting 3 s.h.
- Natural science (excluding math) 3 s.h.
- History of Business and the Legal Environment 3 s.h.
- Foreign currency and culture 3-5 s.h.
- Social science (excluding 63-101 and 63-102) 6 s.h.
- Computer literacy (either 63-10, 63-17, 63-20, 63-30, or 63-100) 3 s.h.
- Advanced Statistical Analysis 3 s.h.
- Introduction to Law 3 s.h.
- Administrative Management 3 s.h.

Introductory Financial Management 3 s.h.

150 Introductory to Marketing 3 s.h.

100 International Business 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.

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).

The requirements for the major in business administration are as follows.

Six business courses (15 s.h.) numbered above 100, including at least four of these:

6A-112 Taxation and Business Decisions

3 s.h.

6F-102 Microeconomics

3 s.h.

6F-103 Intermediate Financial Management

3 s.h.

6G-101 Personnel Management

3 s.h.

6G-102 Individual Behavior in Organizations

3 s.h.

6K-180 Management Information Systems

3 s.h.

6M-114 Marketing Research

3 s.h.

In addition to the required grade-point average listed above, students in this major must have a grade-point average of at least 2.0 on all courses taken from the lists above and on all business courses numbered above 100. Students in this major
Recognition for Academic Achievement

Dean's List

Students who achieve grade-point averages of 3.00 or higher in their semester hours of graded work during a given semester and who have no hours of I or F are recognized by inclusion on the dean's list for that semester.

President's List

Students who earn a 4.00 grade-point average for two consecutive semesters (excluding summer sessions) on at least 12 or more semester hours of graded work each of the two semesters, and who have no hours of I or F those semesters, are recognized by inclusion on the president's list.

Honors

The College of Business Administration Honors Program provides outstanding students in the college the opportunity to undertake advanced work and independent study in their majors and to work closely with faculty and other honors students. Its purpose is to challenge superior students to reach their academic potential. All juniors and seniors in the program participate in a college-wide honors seminar. Successful completion of departmental and college requirements leads to a Bachelor of Business Administration degree with honors (see "Graduation Honors," below).

Presidents students interested in the honors program are encouraged to participate in the College of Business Administration Honors Program until they are admitted to the College of Business Administration. This permits them to take advantage of the service offered by the Sandbag House Honors Center. They are also encouraged to join the Association of Iowa Honors Students, which plans a variety of social and educational activities each year.

Students should apply for admission to the College of Business Administration Honors Program when they apply for admission to the college, and the process takes no longer than the first semester of the junior year. For more information, students should contact the Academic Programs Office, 122 Phillips Hall.

Graduation Honors

High scholastic achievement is recognized in two ways upon graduation: graduation with distinction based on grades only, and achievement in business administration based on both grades and the completion of special work as outlined by the college.

To be eligible for either form of recognition, a student must complete 60 semester hours of credit as an undergraduate at The University of Iowa. The number of semester hours 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

The college admission standards are set by the undergraduate program committee. The college usually admits undergraduate students at the beginning of their junior year. Students are eligible for admission to the college after they have completed 60 semester hours, have satisfied the exemption requirements in quantitative methods, accounting, and economics with a grade-point average of at least 2.25 on the courses used to satisfy these requirements, on all college-level courses taken, and on all courses undertaken at The University of Iowa, and have submitted an application by the deadline (May 1 for summer or fall admission, December 1 for spring admission).

The College of Business Administration considers the following factors in a comparative evaluation of applicants for admission:

- Grade-point average on all college work completed (least required, but not limited to)
- Work completed at The University of Iowa, and the prerequisite courses in quantitative methods, economics, and accounting
- The pattern of grades over time
- Other factors relevant to predicting success in the college
- The exact standards (e.g., grade-point average) each semester vary with the number of applicants, their relative qualifications, and College of Business Administration enrollment limits. Since these standards change from time to time, the college provides information about the characteristics of the students admitted. This permits those interested in the program to judge how they are progressing toward admission.
- No more than 60 semester hours, or equivalent, of transfer credit is accepted for students transferring from a two-year institution.
- Transfer credits for business courses taken during the freshman and sophomore years are counted toward the B.B.A. degree only if such courses are usually offered as lower-division courses at The University of Iowa.

Credit and Grading

Students may earn up to 32 semester hours of credit by examination. Selected tests from the College-Level Examination Program (CLEP) of the College Entrance Examination Board are used. It is possible to receive credit for some of the courses at semester hours of credit. Information on the CLEP examinations is available from the Advising Office of Academic Programs.

Maximum Schedule

Course schedules of more than 16 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 three weeks of the semester or first five 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 only in extraordinary circumstances.

Undergraduates will receive the mark of W for any course dropped after the third week of the semester or first one and one-half weeks of the summer session.

Pass/Nonpass

Of the total semester hours required for a B.B.A. degree, up to 16 may be taken on a pass/nonpass basis with the consent of the advisor. Students may not count more than 8 semester hours of pass/nonpass credit in the last 60 semester hours of course work. Students must be in good academic standing to be eligible for the pass/nonpass option. A maximum of two pass/nonpass courses may be taken in one semester. Courses taken pass/nonpass may not be used to satisfy general education, core, or major business requirements.

Pass/Nonpass registration must be completed during the first three weeks of a summer session or the first six weeks of a summer session. For courses taken on a pass/nonpass basis, an earned grade of D+ or above is recorded as a P; an earned grade of D- or below is recorded as an F.
Students who want to use the second-semester-only option should explain in the usual manner for the course the reasons for delay, or to have it during the regular period for adding courses (the first three weeks of the semester). They must declare their intention to use the option by reporting to the Academic Programs Office, College of Business Administration, 121 Phillips Hall. This may be done by the end of the first week of the semester (or first one and one-half week of the semester). Liberal arts preference majors must adhere to second-semester-only option procedures and deadlines set by the Liberal Arts Office of Academic Programs, 16 Schaefer Hall.

Under the provisions of this option, the registrar marks the permanent record to show that the student is not eligible to repeat (both grades removed from the permanent record at that time). This record is used in calculating the grade-point average and degree earned. The standard procedure of counting both grades in a semester where students repeat a course is followed. Students who choose to do so must adhere to the above procedure.

Correspondence Course Work

B.B.A. candidates may not satisfy any requirement, general education, minimum, or major, through correspondence courses.

Probation and Dismissal

Students are placed on academic probation when their grade-point average in any of the following categories falls below 2.00: all course work undertaken at The University of Iowa, all business course work undertaken at The University of Iowa, all business course work undertaken at The University of Iowa. All course work taken to satisfy requirements for the major, and all course work taken at The University of Iowa to satisfy requirements for the major. When all of the above-grade-point average is equal or surpass 2.00, students are removed from probation. Usually, students are allowed only one semester to return to 2.00 academic standing. Students on academic probation who withdraw registration after the deadline for dropping courses are automatically dismissed. Students may be dismissed from the college at any time for unsatisfactory scholarship. While probation period usually precedes a dismissal, even students in good academic standing who complete a term with extremely unsatisfactory grades may be dismissed immediately. Students dropped from the college for poor academic work may petition to register, but usually only after the expiration of one calendar year following the end of the term in which the dismissal took place.

International Business Certificate

The College of Business Administration and the College of Liberal Arts offer a joint program leading to a Certificate in International Business. This program prepares students for international careers and to participate in the global economy and to be aware of the global economy and to be aware of the global economy and to be aware of the global economy.

Questions about the Certificate in International Business should be directed to The Office of Academic Programs, College of Business Administration, 121 Phillips Hall.

Application Information

Interested students must declare their intention to pursue the Certificate and file a plan of study at the Academic Programs Office, 121 Phillips Hall. In order to receive the International Business Certificate, students must receive an undergraduate degree from The University of Iowa, maintain a minimum 2.00 grade-point average on all course work taken for the Certificate, and take at least 30 semester hours of course work other than language) for the Certificate at The University of Iowa or an approved study-abroad program. A course may not be used to satisfy more than one certificate requirement.

Requirements

International Business

IE 1 Principles of Microeconomics
IE 2 Principles of Macroeconomics

Three courses in international business

International Relations and Institutions

Two courses in international relations and institutions

Foreign Language and Related Area

Two to three years of college-level work (or equivalent) in one of the following: languages, French, German, Hindi, Italian, Portuguese, Russian, or Spanish. Two courses that pertain to countries or areas in which the chosen language is spoken.

A complete listing of courses satisfying the above requirements is available from the Academic Programs Office, 121 Phillips Hall.

Interdepartmental Graduate Programs

The following interdisciplinary graduate programs are offered in the College of Business Administration: Master of Arts (M.A.), Graduate Program in Business Administration; Master of Business Administration (M.B.A.), and Doctor of Philosophy (Ph.D.) in business administration. Joint degree options allow M.A. in business administration or M.B.A. candidates to pursue a second graduate degree in another college. For information on the Master of Arts (M.A.) in accounting, see "Accounting" in this section of the Catalog. For information on graduate programs in economics, see "Economics" in the section of the Catalog.

Master of Business Administration

The Master of Business Administration (M.B.A.) program is designed to prepare students for professional administrative careers in the business or public sector. This program enhances student's career opportunities and provides the commercial and general concepts with the professional personal needed in a complex, modern economy. The program requires the completion of 48 semester-hour courses in graduate studies. Of these courses, 36 must be taken at The University of Iowa and 12 must be taken at the graduate level. The program must be completed within four years after admission to the M.B.A. program.

Accelerated Professional Track

Highly qualified undergraduate students in the Colleges of Liberal Arts or Engineering and the Graduate College may be admitted to the Accelerated Professional Track (AFT) program toward the M.B.A. degree. These
students can take the M.B.A. foundation courses as electives in their undergraduate program so that they can earn both the bachelor's and M.B.A. degrees in less time than would usually be required. AP candidates can also agree to have a cooperative education experience in industry while in the program.

Interested engineering students should have completed two years of engineering study, with a 2.3 grade-point average or better, and indicated the intent to pursue both degree programs on a full-time basis. Liberal arts students should have completed at least 60 semester hours of college work in that college with a grade-point average of 3.0 or higher. Further information on the API program is available from the academic programs office, 121 Philips Hall.

Off-Campus M.B.A.

Courses are offered during evening hours in Cedar Rapids and the Quad Cities. This program is sponsored jointly by the College of Business Administration and the Division of Continuing Education. In Cedar Rapids, these courses are offered in consultation with the Cedar Valley Education Association, and in the Quad Cities with the Quad Cities Graduate Study Center in Rock Island, Illinois.

Students pursuing the degree in the evening usually take two courses each semester and are able to complete the program in four years.

A limited number of M.B.A. courses are offered in Iowa City during the evening. All students admitted to the M.B.A. program may take classes on a part-time basis during the day.

Special M.B.A. Programs

A special program, the Executive M.B.A. also leads to the Master of Business Administration degree. Admission is limited to experienced executives who want to broaden their management skills without interrupting their professional careers. Course work is presented in a two-year academic cycle. Classes begin with one full week in Iowa City followed by classes one day a week on alternating Fridays and Saturdays. Participation is limited to 20 students per year.

Individuals interested in the program, fees, and application procedures should contact the office of the M.B.A. program.

Master of Arts

The Master of Arts degree program in business administration is designed for students seeking specialization in one of several areas of business administration. It permits a research emphasis that qualifies students for research or teaching positions or employment in business.

The program is available both on and off campus. It is flexible, providing specialization according to students' interests and objectives. Students may select a major in finance, management, and organizational behavior, and management information systems. The minor may be developed from approved course combinations within the College of Business Administration or from outside the college.

All students in the M.A. program must satisfy the common body of knowledge requirements of the American Assembly of Collegiate Schools of Business (AACSB). This means that candidates' undergraduate or graduate course work must include study in accounting, quantitative methods, organizational behavior, management, finance, marketing, and the economic and legal environment pertaining to profit and nonprofit organizations.

Requirements for the M.A. degree with concentration include the following:

Major area
Minor area
Economics theory and organizational behavior
Electives
Thesis

Total

Requirements for the M.A. degree without thesis include the following:

Major area
Minor area
Economics theory and organizational behavior
Electives
Research methodology

Total

In either program at least 16 semester hours of course work must be taken at the 200 (graduate) level. Additional coursework beyond the minimum semester hours may be required in order to meet the prerequisites or graduate courses in a major or minor area of study.

Students in the thesis programs are expected to devote the thesis in an oral examination and may be required to take a written and oral comprehensive examination covering course work. A final oral examination is required in the nonthesis programs.

A candidate M.A. degree in management and organizations also is available. The requirements, which vary somewhat from those of the MA without thesis in other departments, are as follows.

Major area
Elective courses
Business electives
Research methodology
Two research reports
Total

*Minimum—a total of 6 semester hours may be waived with appropriate undergraduate preparation. The 35-41 semester hour is inclusive of all common body of business knowledge requirements mandated by the American Assembly of Collegiate Schools of Business (AACSB).

Doctor of Philosophy

The Ph.D. program in business administration is designed for students preparing for research positions in business and government, or for research and teaching positions at academic institutions. The program is flexible, permitting students to select a major area of specialization, according to their interests. Sufficient course work and research experience are provided so that students achieve competence in economic theory, statistical methods, teaching, and research, as well as expertise in a major and minor area of study.
Course work in the Ph.D. program consists of prerequisites (if necessary), the Ph.D. core, major and minor areas of study, and dissertation research. Most students (including all with master's degrees from AACSB-accredited programs) take 60 semester hours of course work. Additional course requirements may be imposed to guarantee sufficiency of business prerequisites or the Graduate College minimum total credit hour requirement (72 semester hours of graduate credit, including core courses taken before entering The University of Iowa Ph.D. program).

Prerequisite Courses

The common body of knowledge requirements of the AACSB must be satisfied by 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 approach and provide necessary background for study in more specialized courses. Graduate courses are required as follows: behavioral sciences (3 semester hours), econometrics (3 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 complete an examination to establish satisfactions of core requirements.

Major Area of Study

A minimum of 12 semester hours of dissertation course work must be completed in one of the following areas: accounting; finance; human resources management; industrial relations; insurance; management science; marketing; or organizational behavior.

Minor Area of Study

A minimum of 9 semester hours of dissertation course work must be taken in the major area of study in addition to concentrations outside the College of Business Administration.

Comprehensive Examinations

Students must successfully complete a written examination in both the major and minor areas of study. The examination consists of a grade of a majority 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 adjacent areas. The examination committee is made up of at least five faculty members.

Dissertation

A dissertation proposal must be presented before a faculty committee comprising dissertation committee members. Students are required to complete 18 semester hours of dissertation credit. The completion of research and writing associated with the dissertation usually requires one year of full-time effort.

Final Examination

The completed dissertation must be defended in an oral examination attended by the dissertation committee members. It is also open to other interested faculty and graduate students.

Application

Applicants seeking admission to study in graduate business must submit the Graduate College application form and the official transcripts of all graduate and undergraduate course work, and official Graduate Management Admission Test (GMAT) scores to the Office of Admissions in Caudy Hall. Three letters of recommendation from former instructors or employers should be submitted to the Academic Programs Office, College of Business Administration.

Graduate Record Examination (GRE) Aptitude Test scores may be reviewed in place of GMAT scores in applications for the Ph.D. program in business administration. See the "Graduate College" section of the Catalog for more information.

Application Information

A graduate application packet may be obtained from the Office of Admissions, Caudy Hall, The University of Iowa, Iowa City, Iowa 52242.

A completed application requires the following:

- A completed application form and submission to the Office of Admissions, Caudy Hall, The University of Iowa, Iowa City, Iowa 52242.
- Official transcripts of all undergraduate and graduate work to be submitted to the Office of Admissions by each institution attended.
- Official Graduate Management Admission Test (GMAT) scores submitted to the Office of Admissions; and
- At least three references from former instructors or employers submitted to the Academic Programs Office, College of Business Administration, The University of Iowa, Iowa City, Iowa 52242.

Foreign language tests (where English is not the primary language) must be submitted as official score of 540 or more on the Test of English as a Foreign Language (TOEFL).

Application Deadlines

The application deadlines for M.B.A., M.A. in business administration, and Ph.D. in business administration are as follows:

M.A. Program (Fall and Spring Entrance Only)

March 1—Foreign applicants for fall (August) or spring (January) admission in January is the latest acceptable GMAT test date.

July 1—U.S. citizens and permanent residents applying for fall (August) admission. June is the latest acceptable GMAT test date.

November 15—U.S. citizens and permanent residents applying for spring (January) admission. October is the latest GMAT test date.

M.A. in Accounting or Business Administration (Summer, Fall, and Spring Entrance)

February 1—Foreign applicants for summer or fall who are applying for financial assistance from The University of Iowa.

March 1—Foreign applicants for summer or fall who are not seeking financial assistance from The University of Iowa.

May 1—U.S. citizens and permanent residents applying for summer enrollment.

July 15—U.S. citizens and permanent residents applying for fall enrollment.

October 1—Foreign applicants applying for spring enrollment.

December 1—U.S. citizens and permanent residents applying for spring enrollment.

Ph.D. in Business Administration (Summer, Fall, and Spring Entrance)

February 1—Foreign applicants for summer or fall who are applying for financial assistance from The University of Iowa.

March 1—Foreign applicants for summer or fall who are not seeking financial assistance from The University of Iowa.

March 1—U.S. citizens and permanent residents applying for summer enrollment.

April 1—Foreign applicants applying for spring enrollment.

January 1—U.S. citizens and permanent residents applying for fall enrollment.

October 1—Foreign applicants applying for spring enrollment.

December 1—U.S. citizens and permanent residents applying for spring enrollment.

Joint Programs

Joint programs allow students to pursue concurrently an M.A., M.B.A., or Ph.D. in the College of Business Administration and a J.D. in the College of Law. as an M.A. in library and information science is offered, it will be the College of Law's responsibility. As a result, M.A. in library and information science is offered, it will be the College of Law's responsibility. As a result, M.A. in library and information science is offered, it will be the College of Law's responsibility. As a result, M.A. in library and information science is offered, it will be the College of Law's responsibility. As a result, M.A. in library and information science is offered, it will be the College of Law's responsibility. As a result, M.A. in library and information science is offered, it will be the College of Law's responsibility. As a result, M.A. in library and information science is offered, it will be the College of Law's responsibility. As a result, M.A. in library and information science is offered, it will be the College of Law's responsibility. As a result, M.A. in library and information science is offered, it will be the College of Law's responsibility. As a result, M.A. in library and information science is offered, it will be the College of Law's responsibility. As a result, M.A. in library and information science is offered, it will be the College of Law's responsibility.
Other Graduate Programs

M.A. in Accounting
See Accounting in this section of the Catalog.

M.A. and Ph.D. in Economics
See Economics in this section of the Catalog.

Facilities
The College of Business Administration is located in Phillips Hall. The building contains seminar and conference rooms, a computer laboratory, an auditorium, the Business Library, and a wide range of classroom facilities.

Extensive research materials for business and economics are maintained in the Main Library, and the facilities of the Weing Center are available to all students. Additionally, students have direct access to a computerized library within the college. The library serves the instructional programs of the college, and the staff maintains a current library of computational programs and data tapes to service user needs.

External Programs

Executive Development Center
The Executive Development Center conducts training and development conferences for executives and senior-level management personnel in Iowa, the Midwest, and the nation. The programs, ranging from two days to two weeks, offer focused research and strategy-based knowledge in the functional aspects of business as well as the economic, social, and international issues and forces that affect American business and industry. In addition to these public programs, specially tailored intensive programs are offered for particular industries and/or businesses.

Financial Markets Institute
The Financial Markets Institute has two primary objectives. The first is to disseminate recent advances in knowledge about the operation of financial markets to the academic and financial communities. The second is to support basic research that investigates the risk/return of financial assets and the trading environment in which these assets are exchanged.

Industrial Relations Institute
The Industrial Relations Institute is designed to bring faculty and students together with people in industrial positions to explore curriculum matters and do research. It also conducts continuing education seminars and workshops for practitioners in the field of industrial relations.

Institute for Economic Research
The Institute for Economic Research engages in continuing economic research and establishes a formal mechanism for providing interaction with and economic advice to industry and government. The institute's main objectives are to provide economic information, services, and advice to a continuous basis to business and public agencies; to provide a sound local point for applied economic research and to promote and enhance academic research and teaching in economics.

Institute for Entrepreneurial Management
The Institute for Entrepreneurial Management helps and guides potential and present entrepreneurs in planning, evaluating, and starting new business ventures. It offers individual counseling and the participation of graduate students guided by faculty members in projects such as assessing the site and viability of a market, producing feasibility statements, and a writing the business plan. The institute also offers specialized courses on how to manage the entrepreneurial process.

Management Center
The Management Center is a major coordinating education branch of the college that provides relevant information to management and government representatives in Iowa. It disseminates current administrative, behavioral sciences, and management knowledge related to the working life of people in organizations through on- and off-campus conferences.

Manufacturing Productivity Center
The Manufacturing Productivity Center facilities co-visual arrangements with Iowa manufacturing firms. The agreements enable business faculty and graduate students, working with the firms' managers and engineers, to jointly address ways to improve manufacturing productivity.

Ira B. McGladrey Institute for Accounting Research
The Ira B. McGladrey Institute for Accounting Research facilitates efforts of the college's accounting faculty by providing staff and financial support.

Small Business Development Center
The Small Business Development Center was created in 1980 to provide business counseling without charge to small business owners and persons interested in starting a small business. The center provides individual counseling to small businesses and conducts workshops on topics related to small business management.

Placement Services
The placement needs of the college are served by the Office of Business and Liberal Arts Placement, located in Phillips Hall. A placement media library, student career planning advising, and interview facilities provide students and recruiting organizations with a full range of placement services.

Alumni Relations
The college maintains an Office of Alumni Relations to act as host during visits from alumni, friends, recruiters, and others interested in the college.

Interdepartmental Courses

For Undergraduates

6300 Cooperative Education Internship 0-6 h.
6340 Cooperative Education Internship 0-6 h.
6360 Basic Math 3 h.
6380 Problems of general management, behavioral aspects of leadership and motivation. May be repeated.
6381 Internship: Human Relations 3-6 h.
6382 Internship: Human Relations 6-12 h.
6384 Internship: Human Relations 12-18 h.
6385 Internship: Human Relations 18-24 h.
6386 Internship: Human Relations 24-30 h.
6387 Internship: Human Relations 30-36 h.
6388 Internship: Human Relations 36-42 h.
6389 Internship: Human Relations 42-48 h.
6390 Internship: Human Relations 48-54 h.
6391 Internship: Human Relations 54-60 h.
6392 Internship: Human Relations 60-66 h.
6393 Internship: Human Relations 66-72 h.
6394 Internship: Human Relations 72-78 h.
6395 Internship: Human Relations 78-84 h.
6396 Internship: Human Relations 84-90 h.
6397 Internship: Human Relations 90-96 h.
6398 Internship: Human Relations 96-108 h.
6399 Internship: Human Relations 108-120 h.
6400 Internship: Human Relations 120-132 h.
6401 Internship: Human Relations 132-144 h.
6402 Internship: Human Relations 144-156 h.
6403 Internship: Human Relations 156-168 h.
6404 Internship: Human Relations 168-180 h.
6405 Internship: Human Relations 180-192 h.
6406 Internship: Human Relations 192-204 h.
6407 Internship: Human Relations 204-216 h.
6408 Internship: Human Relations 216-228 h.
6409 Internship: Human Relations 228-240 h.
6410 Internship: Human Relations 240-252 h.
6411 Internship: Human Relations 252-264 h.
6412 Internship: Human Relations 264-276 h.
6413 Internship: Human Relations 276-288 h.
6414 Internship: Human Relations 288-300 h.
6415 Internship: Human Relations 300-312 h.
6416 Internship: Human Relations 312-324 h.
6417 Internship: Human Relations 324-336 h.
6418 Internship: Human Relations 336-348 h.
6419 Internship: Human Relations 348-360 h.
6420 Internship: Human Relations 360-372 h.
6421 Internship: Human Relations 372-384 h.
6422 Internship: Human Relations 384-396 h.
6423 Internship: Human Relations 396-408 h.
6424 Internship: Human Relations 408-420 h.
6425 Internship: Human Relations 420-432 h.
6426 Internship: Human Relations 432-444 h.
6427 Internship: Human Relations 444-456 h.
6428 Internship: Human Relations 456-468 h.
6429 Internship: Human Relations 468-480 h.
6430 Internship: Human Relations 480-492 h.
6431 Internship: Human Relations 492-504 h.
6432 Internship: Human Relations 504-516 h.
6433 Internship: Human Relations 516-528 h.
6434 Internship: Human Relations 528-540 h.
6435 Internship: Human Relations 540-552 h.
6436 Internship: Human Relations 552-564 h.
6437 Internship: Human Relations 564-576 h.
6438 Internship: Human Relations 576-588 h.
6439 Internship: Human Relations 588-600 h.
6440 Internship: Human Relations 600-612 h.
6441 Internship: Human Relations 612-624 h.
6442 Internship: Human Relations 624-636 h.
6443 Internship: Human Relations 636-648 h.
6444 Internship: Human Relations 648-660 h.
6445 Internship: Human Relations 660-672 h.
6446 Internship: Human Relations 672-684 h.
6447 Internship: Human Relations 684-696 h.
6448 Internship: Human Relations 696-708 h.
6449 Internship: Human Relations 708-720 h.
6450 Internship: Human Relations 720-732 h.
6451 Internship: Human Relations 732-744 h.
6452 Internship: Human Relations 744-756 h.
6453 Internship: Human Relations 756-768 h.
6454 Internship: Human Relations 768-780 h.
As a first condition for completion of the professional program in accounting (three-year program), students must pass an oral examination. All candidates who pursue a M.A. degree are required to submit a score on the Graduate Management Admission Test (GMAT) as a condition for admission to the third year of the professional programs.

Program 1

This program is for students completing their pre-professional program at The University of Iowa. To be eligible for admission, students must apply to both the College of Business Administration and the professional program in accounting. Undergraduate students at The University of Iowa are eligible for admission to the professional program in accounting once they have:

- Completed 60 semester hours of course work, including the six courses required as prerequisites for admission to the College of Business Administration;
- Completed 60/70 Computer Analysis and 86/73 Statistical Analysis; and

Exceed grades of A or B in 60 or 61 in Financial Accounting and 60/78 Managerial Cost Accounting, or the equivalents.

Students are designated accounting majors after their application to the professional program in accounting have been accepted. After successfully completing the first two years of the program, students receive a B.A. degree in accounting. The first-, second-, and third-year requirements of the professional program are shown below, together with the semesters in which they typically are taken.

First Year

Fall Semester
61-73A Financial Accounting I
3 s.h.
B.B.A. core requirements or electives
12 s.h.
Spring Semester
61-115 Introduction to Taxation
3 s.h.
61-352 Financial Accounting II
3 s.h.
61-79 managerial Decision Models
3 s.h.
B.B.A. requirements or electives
6 s.h.
Second Year

Fall Semester
61-130 Accounting for Management Analysis and Control
3 s.h.
61-144 Auditing
3 s.h.
61-163 Microeconomics
3 s.h.
B.B.A. requirements or electives
6 s.h.
Undergraduate Program

Requirements for the Bachelor of Business Administration degree with a major in industrial relations and human resources are as follows:

Industrial Relations and Human Resources Track

- 62-150 Protective Labor Legislation 3 s.h.
- 62-153 Collective Bargaining 3 s.h.
- 62-158 Personnel Management 3 s.h.
- Specialized area (industrial relations or human resources management) 6 s.h.
- Total 15 s.h.

Students select courses in the specialized area based on their individual interests, with the advice and consent of their advisors.

Administrative Studies Track

- 62-161 Individual Behavior in Organizations 3 s.h.
- 62-162 Group Behavior in Organizations 3 s.h.
- 62-163 Organizational Design and Operations 3 s.h.
- 62-175 Managerial Decision Models 3 s.h.
- 62-180 Management Information Systems 3 s.h.
- 62-185 Managerial Information Processing and Decision Behavior 3 s.h.
- Total 30 s.h.

Graduate Programs

Master of Arts

A Master of Arts degree with a major in industrial relations and human resources is available as a special masters program for students who have a baccalaureate degree in the field. The degree covers concentrated graduate study in labor relations and personnel management. Students complete 35-41 semester hours of course work selected with the consent of an advisor. The 35-41 seminar hour includes the common body of human knowledge requirements mandated by the American Assembly of Collegiate Schools of Business for general requirements and "Intersubdisciplinary Graduate Programs" in the College of Business Administration introductory section of the Catalog.

Doctor of Philosophy

Students seeking a Ph.D. in industrial relations and human resources will find degree requirements specified under "Intersubdisciplinary Graduate Programs" in the College of Business Administration introductory section of the Catalog.
Students prepare for a variety of career opportunities in both manufacturing and service organizations. Typical starting positions include computer programmers, system analysts, sales representatives with computer companies, and management trainees. Entry-level positions in operations management include materials management, line supervision, purchasing, and manufacturing systems. Two tracks of study are available in the management sciences major: management information systems and operations management. Course requirements for each track are as follows.

Management Information Systems Track
- MS/111 Individual Behavior in Organizations
- MS/120 Organizational Design and Operations
- MS/175 Decision Modelers
- MS/190 Management Information Systems
- MS/191 Systems Analysis and Design
- One computer science programming course (22C/16-17 recommended)

One of the following:
- MS/190 Management Information Processing and Decision Behavior
- MS/192 Applications of Database Management Systems
- MS/194 Production Planning and Control

Operations Management Track
- MS/111 Individual Behavior in Organizations
- MS/120 Organizational Design and Operations
- MS/124 Production Management (may be taken in place of MS/124)
- MS/176 Managerial Decision Models
- MS/180 Management Information Systems
- MS/184 Production Planning and Control

One of the following:
- MS/182 Collective Bargaining
- MS/183 Personnel Management
- MS/184 System Analysis and Design
- MS/186 Applications of Database Management Systems

Graduate Programs

Master of Arts

The Master of Arts program in management sciences is designed for students who seek either an opportunity for specialization or a professional career. The general requirements are specified in the Bulletin of the Master of Arts in Business Administration. See "Interdisciplinary Graduate Programs" in the College of Business Administration introductory section of this Catalog. Students must consult with a faculty advisor to prepare a plan of study for the master's degree.

Doctor of Philosophy

Candidates who want to earn a Ph.D. degree in management sciences should refer to the description of the Doctor of Philosophy program in "Interdisciplinary Graduate Programs" in the College of Business Administration introductory section of this Catalog.

Courses

Primarily for Undergraduates
65360 Cooperative Education Internship 1 a.h.
65770 Computer Analysis 3 a.h.
   Introduction to the computer and its use in operations management and related courses. Topics include computer hardware terminology, introduction to programming, management information systems, and use of applications software. Prerequisites: 222/17 and 222/29.
65774 Statistical Analysis 3 a.h.
   The use of statistical tools for solving management problems. Topics include regression, ANOVA, frequency theory, and sampling. Prerequisites: 222/17 and 222/16.
65784 Production Management 3 a.h.
   Organization and management of manufacturing enterprises, production design and process planning, plant layout, and materials handling; work simplification and measurement; production supervision and systems control. Prerequisites: 651/11, 651/12, and 652/11.

For Undergraduates and Graduates
65110 Directed Readings 1 a.h.
   Individual guided research in selected topics in management science. Credit of ans. usually limited to 3 a.h. maximum.
65172 Managerial Economics 3 a.h.
   Economic analysis applied to basic problems encountered in a marketing, finance, and production analysis for the manufacturing firm. Prerequisites: 222/15, 651/11, and 652/11.
65182 Managerial Decision Models 3 a.h.
   Decision analysis applied to general problems encountered in the marketing and production analysis for the manufacturing firm. Prerequisites: 222/15, 651/11, and 652/11.
65184 Management Information Systems 3 a.h.
   Nature of systems description and use of management information systems. Survey of a wide variety of systems, including the development of a user-oriented information system. Prerequisites: 651/11 and 652/11.
65186 Systems Analysis and Design 3 a.h.
   Design and implementation of an information system. Focus on life cycle concepts, techniques for developing information needs, feasibility studies, design and implementation of information plans, followed by construction of prototype information systems. Prerequisites: 48/16 and 112/14 or 222/9.
65202 Applications of Database Management Systems 3 a.h.
   Design and implementation of a database management system using a relational data base. Emphasis on issues of logical and physical database design and modeling. Prerequisites: 651/11, 652/11, and 653/11.
65364 Production Planning and Control 3 a.h.
   Concepts and tools for production planning, scheduling, and inventory control in operations management. Emphasis on recent advances in the area. Prerequisites: 651/11 and 652/11.

Primarily for Graduates
65110 Directed Readings 1 a.h.
   Individual guided research in selected topics in management science. Credit of ans. usually limited to 3 a.h. maximum.
65275 Analytical Models in Management 3 a.h.
   Operations research study from more advanced, current material including operations research, mathematical modeling, computer implementation, communications, and models.
65277 Management Science Topics 3 a.h.
   Advanced treatment of selected topics in management science. Topics to be announced at the end of the preceding quarter. Prerequisites: 651/11 and 652/11.
65286 Inventory Management 3 a.h.
   Forecasting used in business: batch models such as the Economic Order Quantity, and approximate simple structured models such as the Economic Production Lot Size (EPLS) model. Prerequisites: 651/11 and 652/11.
65287 Management Information Systems - M.S.E. 3 a.h.
   Software, hardware, and organizational fundamentals of management information systems, hardware components, and software, operating systems, systems software and applications software, system life cycle, management of information systems. Prerequisites: 651/11 and 652/11.
65291 Management Strategy Design 3 a.h.
   Determination of objectives and design of strategies for effective management. Emphasis on model building techniques and evaluation of alternative strategies. Prerequisites: 651/11 and 652/11.
65294 Production Management 3 a.h.
   Determination of strategies and design of strategies for effective management. Emphasis on model building techniques and evaluation of alternative strategies. Prerequisites: 651/11 and 652/11.
65295 Game Theory in Management Decision Making 3 a.h.
   Determination of strategies and design of strategies for effective management. Emphasis on model building techniques and evaluation of alternative strategies. Prerequisites: 651/11 and 652/11.
65296 Research in Management Information Systems 3 a.h.
   In-depth study of one or more topics such as structured data bases, programs, computer languages, expert systems, information retrieval, programming, and databases. Prerequisites: Consent of instructor required.
65298 Operations Research Methods 1 a.h.
   Determination of strategies and design of strategies for effective management. Emphasis on model building techniques and evaluation of alternative strategies. Prerequisites: Calculus and linear algebra.
65302 Advanced Database Procedures 3 a.h.
   Advanced study of database implementations, including dynamic programming, integer models, growth patterns, and production models. Prerequisites: 651/11 and 652/11.
65304 Applied Database Procedures 3 a.h.
   Advanced study of database implementations, including dynamic programming, integer models, growth patterns, and production models. Prerequisites: 651/11 and 652/11.
65391 Advanced Management Science 1 a.h.
   Advanced study of management science topics. Prerequisites: 651/11 and 652/11.
65510 General Management Science 3 a.h.
   General management science topics. Prerequisites: 651/11 and 652/11.
65511 General Management Science 3 a.h.
   General management science topics. Prerequisites: 651/11 and 652/11.
65512 General Management Science 3 a.h.
   General management science topics. Prerequisites: 651/11 and 652/11.
65513 General Management Science 3 a.h.
   General management science topics. Prerequisites: 651/11 and 652/11.
0:20:00 Systeme Design 3 h.b.
Import, stabilization, and development of technology systems.
Software may include facilities location and layout, facility planning, start-up and process design, capacity planning, product process development and design, and facility management.

Class: Instructor determined.

0:00:30 Research in Management 3 h.b.
A systematic analysis of management, research management, capacity planning, product process development and design, and facility management.

Class: Instructor determined.

0:00:45 Artificial Intelligence 3 h.b.
An overview of artificial intelligence and machine learning techniques, including expert systems and knowledge management.

Class: Instructor determined.

0:00:45 Logistics Management 3 h.b.
An overview of logistics management, including supply chain management, operations management, and transportation.

Class: Instructor determined.

0:00:30 Introduction to Business Communication 3 h.b.
Basic concepts in business communication, including business communication, business ethics, and business communication case studies.

Class: Instructor determined.

0:00:30 Undergraduate Program
The Department of Marketing offers courses that help undergraduate students understand the social and economic roles of marketing and prepare them for marketing careers.

Several decades ago, the study of marketing dealt almost exclusively with business activities involved in the flow of goods from producer to consumer for the purpose of consumption. Today, the study of marketing includes principles that are more widely applicable, they are as relevant in the study of the arts, sports, and social causes as they are in the marketing of goods and services. A major in marketing includes study in the behavioral sciences, communications, statistics, analysis, and computer methods as well as marketing functional areas.

Students graduating with majors in marketing may find opportunities for employment as marketing analysts, management consultants, buyers, community

0:00:30 Graduate Programs
See "Interdisciplinary Graduate Programs" in the College of Business Administration introduction section of the Catalog.

Courses

Primarily for Upper-Division Undergraduates

0:00:00:00 Corporate Entrepreneurial Program 3 h.b.
0:00:15:00 Introduction to Marketing 3 h.b.

Marketing provides an understanding of marketing environment and the role of marketing in business success.

Class: Instructor determined.

0:00:30 Undergraduate Marketing

0:00:30:00:00 Advanced Marketing Management 3 h.b.

0:00:30:00:00 International Marketing 3 h.b.

0:00:30:00:00 Advertising and Sales Promotion 3 h.b.

0:00:30:00:00 Sales Management 3 h.b.

0:00:30:00:00 Marketing Management 3 h.b.

Marketing provides an understanding of marketing environment and the role of marketing in business success.

Class: Instructor determined.

0:00:30:00:00 Advertising and Sales Promotion 3 h.b.

0:00:30:00:00 Sales Management 3 h.b.

0:00:30:00:00 Marketing Management 3 h.b.

Marketing provides an understanding of marketing environment and the role of marketing in business success.

Class: Instructor determined.
3341 Management Models—Ph.D. 3 s.h.

Survey of theoretical and operational models in marketing with emphasis on critical analysis of specific decision situations; case studies. Consent of instructor required.

3342 Marketing Models—Ph.D. 3 s.h.

Examination of theoretical and operational models in marketing. Emphasis on critical analysis of decision situations in specific problematic areas. Consent of instructor required.

3343 Research in Consumer Behavior—Ph.D. 3 s.h.

Critical examination of recent research, in-depth study of research methods. Consent of instructor required.

3344 Multivariate Applications—Ph.D. 3 s.h.

Survey of some statistical techniques, including multiple regression, discriminant analysis, factor analysis, and canonical correlation. Consent of instructor required.

3345 Research in Marketing—Ph.D. 3 s.h.

Topics of current interest in marketing. Consent of instructor required.

3346 Seminar in Marketing—M.A. 3 s.h.

Exploration of current trends. Consent of instructor required.

3347 Thesis in Marketing 3 s.h.

Thesis of instructor required
College of Dentistry

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Dean: James H. Maloney
Executive associate dean: John C. Montgomery
Assistant dean for research and director of Dornsife School: Christopher Spero
Associate dean for academic affairs: Pelora S. Logan
Associate dean for clinical activities: Thomas R. Gerber
Assistant dean for extramural affairs: C. Frederick Reese
Associate dean for business and financial administration: M.J. Benson
Degrees offered: D.D.S., M.S.
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 Care Center, shared teaching, research, and service activities have earned international recognition.

The basic educational program leading to the Doctor of Dental Surgery (D.D.S.) degree consists of a minimum of three years of preprofessional study and four years of study in the College of Dentistry. The dental curriculum consists of five basic units.

Basic Sciences
General anatomy; biochemistry; histology; physiology; general pathology; oral pathology; pharmacology; microbiology.

Restorative Dental Sciences
Gross, microscopic, and radiographic dental anatomy; dental materials; endodontics; operative dentistry; fixed partial prosthodontics; removable prosthodontics.

Oral Medicine
Preventive dentistry; oral diagnosis; dental pathology; oral pathology; anaesthesiology and pain control; oral surgery; periodontology.

Community Dentistry
Facial morphology and oral health; preventive dentistry; community health; principles of human behavior; dental economics; dental jurisprudence; geriatrics.

Pediatric Dentistry
Facial growth and development; pediatric dentistry and orthodontics.

To achieve a close correlation of the basic sciences with clinical disciplines, the student is introduced to clinical patient-care situations during the first year.

The second-year program continues the basic science and technical courses, plus definitive clinical patient treatment.

Third-year students rotate through a series of clerkships, which expose them to each of eight clinical disciplines.

Fourth-year dental students are involved in the delivery of comprehensive dental care in an environment that simulates conditions in private dental practice. They also are exposed to various extramural health programs that include hospitals, mental health institutes, 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 give exposure to facets of dentistry usually not observable in their academic setting.

Promotions and Graduation

Student promotions and graduation are determined by the collegiate academic and professional organizations 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 requirements noted exempt the student from the dean that a student withdraw from the college or repeat specific courses when the student is deemed generally unprepared to be promoted or to enter the dental profession.

Committee for Appeals

When a student has been asked to withdraw from the college or be denied 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 the information that previously has not been available or that, for some reason, has not been discussed as fully as the student feels it obviously has been. The committee determines whether the new information is important enough to have been gained, could have influenced the collegiate academic and professional performance committee's decision. The recommendation of the appeals committee is submitted to the dean for final action.

Dentistry Licensure Examination

Iowa and the states of Colorado, Kansas, Mississippi, Missouri, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming belong to the Central Regional Dental Training Service, which serves as the testing agency for clinical examinations for licensure in these states. Examinations are administered at several testing sites located at schools of dentistry within the region. Examination dates are determined by the Central Regional Dental Training Service and are available from its administrative office.

For a two-year period, member states accept successful completion of Central Regional Dental Training Service examination requirements in lieu of their individual state's licensing examination requirements. The license application is then filed with the individual state's board of dentistry.

Most states also require the National Board, conducted by the American Dental Association, exam of Individual states.

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 complex, enables the college to accelerate its research activities and facilitate the development of interdisciplinary communication in health care testing, research, and patient care activities. The health center includes the Colleges of Medicine, Nursing, and Pharmacy; the Bowen Science Building; The University or Iowa Hospital and Clinics; and the Stuart Library for the Health Sciences. Together it houses all of the University's special health sciences buildings, a total of 183,710 square feet, including more than 18,000 volumes on dentistry and allied scientific subjects, and the more than 280 dental journals the college currently receives. The library also contains over 2,800 manuals written by the combined health professions.

The Dental Science Building consists of two connected, four-story wings located on east side of a mall. The south wing is devoted to college teaching, with various departments clinical services, support laboratories, clinical research space, offices, and a cafeteria. The north wing houses teaching laboratories, research laboratories, administrative area, educational media center, and programs in community dentistry.

Student Organizations

All dental students are eligible for membership in the American Student Dental Association through their local chapter. There are also local chapters of the American Association of Dental Schools, the American Association of Women Dentists, the American Society of Dentistry for the Handicapped, and the Student National Dental Association. Students who are members of any of these professional associations are eligible for election to Omicron Kappa Upsilon, the American College of Dentistry honorary dental society. Two national dental professional societies, Delta Sigma Delta and Pi Omicron Epsilon, have chapters located at Iowa. Both organizations have housing available for the men and women dental students. In addition, they provide both academic and social activities for students and their spouses.

Expenses

The College of Dentistry maintains a Supply-Instruction Management System (SIGMA), which provides college-level instruments and supplies necessary throughout the four years of training.

The SMS usage fee for the D.D.S. degree is payable in installments over the first three years of the program.
A fee for expendable laboratory supplies is charged each of the first two years. A $120 breakage fee also must be deposited; the deposit is refundable upon graduation or termination of enrollment.

Financial Aid
Financial assistance for dental students is based on need. Students applying for Health Professions Loans must submit the College Scholarship Service Financial Aid Form (FASFA), which includes an evaluation of parents’ 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 deductible 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 "Learning at Iowa" section of the Catalog or inquire at the Office of Student Financial Aid for updated information regarding financial assistance available to dental students.

Dentistry Research Assistants (DRA)
Dental research assistantships are awarded each year to students who have, in the opinion of the faculty, shown by previous work the ability to contribute to the profession of dentistry. Potential students may apply for DRA status at any time, but only those applying by the deadline will be considered for DRA status. The annual stipend is $12,000.

Minorities
Financial assistance (grants and loans) and counseling services are available to minority students who qualify under the University of Iowa's Educational Opportunity Program and the Opportunity at 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
Applications 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. Applicants should apply as early as possible and should not delay until after the Dental Admission Test (DAT) is taken. Notifications of acceptance are sent beginning December 1.

Prospective dental students are encouraged to enroll in an education program that leads to a standard bachelor’s degree. This allows students to consider a combined program that enables them to earn a standard bachelor’s degree from their undergraduate college upon completion of the preprofessional degree. (See “Combined Liberal Arts-Dentistry Program” in this section of the Catalog).

Predental Studies
The basic academic requirement for admission to the College of Dentistry is the completion of no fewer than 96 semester hours of academic study as an accredited college or university. In exceptional circumstances, candidates with fewer than 96 semester hours of college work are considered for admission if their performance and potential for their professional education are considered outstanding. The predental program of study should include:

- English: satisfactory accomplishment in English composition, rhetoric, and speech communication, with academic requirements for a bachelor’s degree at the student’s attending college.
- Science: one year (equivalent to 8 semester hours), of which one-fourth must be laboratory work.
- Chemistry: two years (equivalent to 16 semester hours), of which one year (equivalent to 8 semester hours) must be in organic chemistry, and of which one-fourth must be laboratory work.
- Biology: one year (equivalent to 8 semester hours), which must include appropriate laboratory work, requirement may be satisfied by a one-year course in general microbiology; courses in histology and cell physiology are also recommended.

Excellence 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 39 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 academic requirements in the bachelor's degree, including the General Education Requirements and the requirements for a major. Students also must satisfy the College of Liberal Arts residence requirement before enrolling in the College of Dentistry. See "Early Admission to Medicine or Dentistry" in the College of Liberal Arts section of the Catalog.

Grade-Point Average Requirement
Applicants should have a cumulative grade-point average of at least 2.50. The admissions committee gives special consideration to the quality of applicants' coursework and the reasons for deviations in 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 admissions office.

Required Dental Admission Test
All applicants must complete the Dental Admission Test (DAT) sponsored by the Council on Dental Education of the American Dental Association. Tests are given in spring and fall. 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 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 15 are required to submit a $500 deposit within 30 days after notification of admission.
Applicants admitted after February 15 must submit the deposit within two weeks after notification of admission. This deposit is non-refundable, but is credited toward the least the payment. Applicants who fail to make the deposit within the time specified lose their place in the entering class.

Additional Admission Considerations

Fulfillment of the specific requirements listed for admission does not ensure admission to the College of Dentistry. From applicants meeting minimum requirements, the admissions committee selects those who appear best qualified for the study and practice of dentistry. The committee considers applicants' academic averages, science aptitude, Dental Admission Test scores, letters of recommendation, the interview, and other factors.

Early Admissions

The College of Dentistry has an early admissions program set up with The University of Iowa, Santa Clara College in Santa Clara, California, and Luther College in Decorah, Iowa, Augusta College in Rock Island, Illinois, and Prairie View A & M University in Prairie View, Texas. The Dental Early Admission Program (DEAP) allows academically motivated students interested in a dental career to be admitted as early as the first year of their undergraduate college education, while maintaining a minimum score in the College of Dentistry until they have completed their first year of college education. During these three years, students are engaged in a liberal arts curriculum that incorporates the dental prerequisite course. Once selected for the program, students must maintain a 3.50 GPA point average to assure matriculation to The University of Iowa College of Dentistry.

Graduate and Postgraduate Study

Programs of study leading to the Master of Science degree are offered by the College of Dentistry's Departments of Dental Hygiene, Preventive Dentistry, Endodontics, Oral Pathology and Diagnosis, Oral and Maxillofacial Surgery, Orthodontics, Pediatric Dentistry, Periodontics, and Preventive and Community Dentistry. Admission to any of the graduate programs requires satisfaction of all requirements for admission to the Graduate College, possession of the Doctor of Dental Surgery degree (or equivalent (comparable to dental hygiene), and departmental approval. Departments also offer postgraduate programs of study designed as preparation for clinical specialty practice. These programs must lead to an academic degree. Prerequisites for admission to the graduate programs are the same as for graduate programs. A certificate is awarded upon satisfactory completion of the postgraduate program.

Graduate students who are interested in taking a course in electronic microscopy may do so by registering for one of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>32-135</td>
<td>Scanning Electron Microscopy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>32-136</td>
<td>X-ray Microanalysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>32-218</td>
<td>Electron Microscopy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>32-229</td>
<td>Advanced Electron Microscopy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>32-230</td>
<td>Advanced Scanning Electron Microscopy</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Basic Sciences in the Dental Curriculum

The following science courses are offered by departments in colleges other than dentistry and are a required part of the dental curriculum:

<table>
<thead>
<tr>
<th>Course Code</th>
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<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-101</td>
<td>Human Gross Anatomy</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>60-112</td>
<td>General Histology for Dentists</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>60-118</td>
<td>Gross Histology and Embryology</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>60-119</td>
<td>Human Sciences Histology and Embryology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>77-111</td>
<td>Pharmacology for Dental Sciences</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>72-152</td>
<td>Membranology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>95-101</td>
<td>Biochemistry</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Courses

Nondepartmental

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>11-000</td>
<td>Transfer Credit Audit</td>
<td></td>
</tr>
<tr>
<td>11-015</td>
<td>Dental Materials</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>12-000</td>
<td>First-Year Continuing Session</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>12-103</td>
<td>Introduction to Geriatric Dentistry</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>12-120</td>
<td>Geriatric Dentistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>12-125</td>
<td>Geriatric Dentistry</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>12-150</td>
<td>Geriatric Dentistry</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>12-155</td>
<td>Geriatric Dentistry</td>
<td>5 s.h.</td>
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<tr>
<td>12-160</td>
<td>Geriatric Dentistry</td>
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<td>12-170</td>
<td>Geriatric Dentistry</td>
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</tr>
<tr>
<td>12-180</td>
<td>Geriatric Dentistry</td>
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<tr>
<td>12-190</td>
<td>Geriatric Dentistry</td>
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<td>12-200</td>
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<td>0 s.h.</td>
</tr>
<tr>
<td>12-210</td>
<td>Geriatric Dentistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>12-220</td>
<td>Geriatric Dentistry</td>
<td>2 s.h.</td>
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<tr>
<td>12-230</td>
<td>Geriatric Dentistry</td>
<td>1 s.h.</td>
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<tr>
<td>12-240</td>
<td>Geriatric Dentistry</td>
<td>0 s.h.</td>
</tr>
<tr>
<td>12-250</td>
<td>Geriatric Dentistry</td>
<td>3 s.h.</td>
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Departmental

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<tr>
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<td>12-125</td>
<td>Geriatric Dentistry</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>12-150</td>
<td>Geriatric Dentistry</td>
<td>6 s.h.</td>
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<tr>
<td>12-155</td>
<td>Geriatric Dentistry</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>12-160</td>
<td>Geriatric Dentistry</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>12-170</td>
<td>Geriatric Dentistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>12-180</td>
<td>Geriatric Dentistry</td>
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<td>Geriatric Dentistry</td>
<td>3 s.h.</td>
</tr>
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</table>

Clinical Management Courses

Professor: Thomas G. Gardner

12-107 Introduction to Quality Assurance 2 s.h.

12-108 Introduction to Geriatric Dentistry 2 s.h.

12-109 Introduction to Orthodontics 2 s.h.

12-110 Introduction to Preventive Dentistry 2 s.h.

12-111 Introduction to Periodontics 2 s.h.

12-112 Introduction to Endodontics 2 s.h.

12-113 Introduction to Oral Surgery 2 s.h.

12-114 Introduction to Maxillofacial Surgery 2 s.h.

12-115 Introduction to Oral Pathology 2 s.h.

12-116 Introduction to Oral Microbiology 2 s.h.

12-117 Introduction to Oral Radiology 2 s.h.

12-118 Introduction to Oral Anatomy 2 s.h.

12-119 Introduction to Oral Histology 2 s.h.

12-120 Introduction to Oral Embryology 2 s.h.

12-121 Introduction to Oral Immunology 2 s.h.
284 Dentistry

10219 Advanced Topics in Quality
Announcements
2 a.h.
Qualitative research from the perspectives of dental
practice, oral health, and policy. Students select a topic to
present to the class. Completion of either advanced
research or advanced research in dental public health
is required in order to graduate.

DENTAL HYGIENE
Chair: Pauline Jones
Associate professor: Bethine Briney, Nancy Setty
LaPerna, Kay Mezher, Elizabeth Plochin, Nancy Thompson
Graduate department coordinator: Gayle Collins, Rita Hess
Undergraduate degree offered: B.S. in Dental
Hygiene
Graduate degree offered: M.S. in Dental
Hygiene

Undergraduate Program
Qualified by education and license, the dental
hygienist applies knowledge of the basic,
social, dental, and clinical sciences in
providing services for the prevention and
control of oral diseases.
The Bachelor of Science degree program in
dental hygiene includes two years of
general education followed by two years of
specialized study. The curriculum is
approved by the Commission on Dental
Accreditation of the American Dental
Association. Program graduates are
prepared to take the national, regional, and
state dental assistant examinations required
for dental hygiene practice.

Included in the General Education
Requirements are courses in the basic and
social sciences. These courses provide the
student with educational preparation in
disciplines relevant to specialized study in
dental hygiene and associated medical and
dental sciences.

Students take the specialized courses
during the junior and senior years. In the
junior year, students enroll in 90.42 Human
Pathology 7 1:13 introductory
Pharmacology, 92.104 Introduction to
Periodontology, 92.106 Operative Dental
Laboratory for Hygiene, 91.161
Introduction to Oral Pathology, 91.102 Oral
Pathology for Dental Hygienists, 91.104
Dental Radiology for Dental Hygienists,
91.106 Anatomy and Physiology, 91.101
Dental Anatomy, and 91.102 Head and Neck
Anatomy.

In addition, just as in the basic theory
and clinical skills required for dental
hygiene practice in 91.105 Oral Pathology
Core I and 91.104 Dental Hygiene Core II,
which integrate content in socio-medical
and dental sciences with the theory
practiced in dental hygiene.

During the senior year, students advance
their clinical skills in 91.105 Clinical Dental
Hygiene. In 92.105 Advanced Periodontics
for Dental Hygiene Students, each student is
assigned to work with a graduate student in
periodontics, performing procedures on
adults who have active periodontal disease.

This experience not only advances dental
hygiene clinical skills, but provides both the
hygiene and graduate dental students with
a learning experience emphasizing the
Dental hygiene.

Senior students also are required to 91.107
Practice Community Dental Hygiene, 91.106
Session: Community Dental Hygiene; 71:121
Designing and Developing
Instructional Materials; 211081 Biostatistics; and
11:142 Introduction to Genetics.

Courses traditionally taught as isolated
subject-oriented units, such as dental health
education, public health, and epidemiology,
are incorporated into an integrated core.
Learning emphasis is on the relationship
between the underlying theory and
practical application of community dental
health. Students discuss broad community
health issues related to the provision of
oral health care. Field experiences enable
them to apply knowledge of human
behavior, limited principles of
communication and marketing, and
educational and research techniques to the
design, implementation, and evaluation of
health care and educational programs.

Ageing Studies Program
As part of their dental hygiene studies,
students may participate in a
multidisciplinary program in ageing studies.
The program provides support for the
work for students who want to develop
specialization in gerontology. For further
information, see "Ageing Studies Program" in the
College of Liberal Arts section of the
Catalogue.

Minors and Double Majors
Dental hygiene students have the
opportunity to develop a minor in another
field of study. To pursue a minor, majors who
select this option should plan their
courses of study with their dental hygiene
advisor to ensure 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 one
foreign language (preferably Spanish); at
least three years of mathematics, including
two years of high school algebra and one
year of high school geometry; and one
year each of biology 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
prerequisites:
Four semester hours of inorganic
chemistry—4.2 General Chemistry II;
Four semester hours of molecular
biology—4.8 General Chemistry II;
Four semester hours of medical
anatomy—4.3 Physical Anatomy;
Four semester hours of nutrition—17.41
Introductory Nutrition;
Four semester hours of psychology—31.1
Elementary Psychology;
Three semester hours of sociology—34.1
Introduction to Sociology Principles;
Four semester hours of anatomy—601
Principles of Human Anatomy;
Four semester hours of
physiology—72.126 Human Physiology.

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
an equivalent course requirement in
periodontics with emphasis on the
comprehensive examination (CPRE) at the
courtesy level.
The curriculum design provides students with major concentration in advanced dental hygiene theory. In the social science area, students consider the implications of applied sociological, psychological, economic, cognitive, and environmental concepts related to oral health. Selected readings examine societal values, structural elements of dental care delivery systems in relation to individuals, family, and community oral health outcomes.

Study in the educational field includes dental hygiene trends, with emphasis on dental hygiene education, elements of curricular design, and the theory and application of didactic, clinical, and practical training in dental hygiene. Approximately 14 semester hours are taken in assigned courses to acquire advanced knowledge in dental hygiene and if are taken in research methodology and thesis preparation and defense. The remaining 19 semester hours include electives in the biomedical and social sciences.

Elective course work related to the biomedical sciences may include microbiology, anatomy, histology, pharmacology, periodontology, and anesthesia.

Electives emphasizing the social, economic, and political aspects of health include epidemiology, medical sociology, health care organization and administration, and health economics.

Students are also encouraged to consider taking courses in higher education areas as education measurement, theories of learning, and research methodology.

It is recommended that dental hygiene graduate students take the following courses:

**882:211** Seminar: Dental Hygiene Literature Review 3 s.h.
**882:203** Research: Dental Hygiene 3 s.h.
**885:255** Social Factors and Oral Health 4 s.h.
**882:206** Clinical Dental Hygiene Education 2 s.h.
**885:207** Selected Topics in Dental Hygiene Education 2 s.h.
**111:212** Statistical Methods for Dental Research 3 s.h.
**171:243** Introduction to Statistical Inference 2 s.h.
**111:224** Research Design in Dental Hygiene 2 s.h.

Although students may begin the 34-semester-hour program during the summer term, fall semester enrollment of the beginning of the fall semester is preferred. Most students should expect to take a minimum of one year 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 dentistry major at The University of Iowa.

Candidates for admission must submit official transcripts of all undergraduate academic records, an application for admission, and Graduate Record Examination scores to the Office of Graduate Admissions, 3070 Main Hall. Since these materials must be received before the candidate's application can be processed, students are encouraged to submit these materials as soon as possible prior to the semester for which admission is desired. Application for admission and information on the Graduate Record Examination can be obtained from the Office of Graduate Admissions.

**Facilities**

University of Iowa dental hygiene majors receive their professional preparation at the University's modern dental Science Building. This building is part of The University of Iowa Health Science complex, one of the nation's outstanding health science teaching, research, and patient care facilities.

**Financial Aid**

In addition to financial assistance available to University students, there is a large number of scholarships and loans for undergraduate dental hygiene students. These loans are based on measures of need, academic record, and financial need. The financial support for graduate students is available through teaching assistantships, research assistantships, and student service options. The University funds the graduate education program through a combination of federal and private sources. Graduate students who demonstrate exceptional promise in their academic work are eligible for teaching assistantships and research assistantships. Excellent undergraduate and graduate students are available for minority students who have outstanding academic records. For further information, see "Financial Aid" in the "College of Dentistry" section of the Catalog.

**Courses**

**For Undergraduates**

**885:201** Dental Anatomy 2 s.h.
**885:204** Dental Pathology, the Morphological Characteristics of Teeth, Their Positional Relationships and Functional Considerations, Emphasis on the Relationship of Dental Anatomy to the Clinical Dentistry Practice 1 s.h.
**885:212** Head and Neck Anatomy 1 s.h.

**885:300** Dental Hygiene Core I 1 s.h.
**885:302** Dental Hygiene Core II 1 s.h.
**885:304** Dental Hygiene Core III 1 s.h.
**885:306** Dental Hygiene Core IV 1 s.h.
**885:308** Dental Hygiene Core V 1 s.h.
**885:310** Dental Hygiene Core VI 1 s.h.
**885:312** Dental Hygiene Core VII 1 s.h.
**885:314** Dental Hygiene Core VIII 1 s.h.
**885:316** Dental Hygiene Core IX 1 s.h.

**Endodontics • Dentistry 285**

Head: Richard E. Walton
Professor: Richard E. Walton
Professor emeritus: Anne M. Rhyne
Assistant professor: Lisa R. Skluse
Assistant professor: W. Bowers
Graduate degree offered.M.S. in Endodontics
Predoctoral Program
Course work and clinical experiences in endodontics are of vital importance in the overall education of a dental student.
Preclinical endodontics, taught during the sophomore year, includes both didactic and laboratory courses. In clinical endodontics, students study both normal and pathological conditions of the dental pulp and periapices, emphasizing the areas of prevention and diagnosis of pulp and peripapical disease. Students treat endodontic patients under direct supervision of faculty and staff.

Graduate Program
The graduate program offered by the Department of Endodontics is designed to prepare qualified dentists for the practice of endodontics and/or a career in dental education and research.
The department offers two types of graduate (post-D.D.S.) programs.
The Master of Science degree program requires a minimum of 60 semester hours of graduate work, including an original research project and thesis. Students follow a plan of study that equals a total of 60 semester hours.
The certificate program requires formal coursework. Candidates are expected to write a scientific paper of publishable quality, based on original research. The certificate program involves course study for up to 60 semester hours of credit. An individual plan of study is prepared for each student.
Both programs are available for a minimum of two calendar years, and candidates for the certificate are admitted. Completion of the program requires satisfactory performance in a comprehensive written and oral examination.

Courses

Predoctoral
Endodontics (E 111) 3.0 hours. Basic principles, techniques and technical procedures necessary for elimination of pulpal problems in human teeth, diagnosis, treatment and evaluation.
Clinical Endodontics Practice (E 166) 2.0 hours. Clinical experience in the diagnosis and treatment of pulpitis and periapical pathology. Emphasis is placed on the selection of patients for endodontic therapy.

Graduate

Update in Endodontics (E 220) 1.5 hours. Recent advances in endodontic diagnosis, treatment planning, and clinical techniques, for endodontists.

Literature Review I (E 222) 2.0 hours. Current endodontic topics. Weekly seminar and journal club format.
Literature Review II (E 226) 2.0 hours. Continuation of E 222.

Research in Endodontics (E 236) 1.5 hours. Open discussion of current research in endodontics.

Prosthodontics (E 291) 2.0 hours. Preparation of endodontic therapy.

Student Support Conference (E 298) 1.5 hours. Endodontic student support conference.
Endodontic Self-Assessment (E 316) 1.5 hours. A self-assessment program designed to evaluate students' understanding of relevant endodontic material.

Predoctoral in Endodontics

FAMILY DENTISTRY

Advanced Education in General Dentistry

The Department of Family Dentistry is responsible for senior dental students' final syntheses and endodontic experiences. The major goal is the integration of previously learned clinical skills into a well-organized and systematic approach to the comprehensive care of patients. The experience encompasses approximately three-fourths of the senior year.

Advanced Education in General Dentistry

The Department of Family Dentistry sponsors pregraduate Advanced Education in General Dentistry Program (AEGD) to improve and refine residents' skills and knowledge in the practice of general dentistry to develop general practitioners who can plan and deliver high-quality dental services. AEGD practitioners are better able plan and coordinate comprehensive treatment for patients and to act as principal coordinators when specialists' services are necessary.

Residents are exposed to a broad range of clinical experiences while delivering
comprehensive care to an assigned group of patients, who are treated solely by the residents. They have the opportunity to discuss treatment planning, progress, and outcomes with other residents and faculty. They are also involved with financial management, appointment scheduling, and appointment planning, thus adding to their practice management skills.

Approximately 55 percent of the program consists of general dental practice. Each resident has responsibility for a group of patients. Patient assignments are made to assure focused management in type and complexity of treatment needs. The didactic portion constitutes approximately 15 percent of the total experience and consists of small-group educational activities in small specialty areas. Dental emergency responsibilities are included in the program. In vivo experiences, instruction, and assignment design help the residents become familiar with the current literature and research.

The AEGD program lasts one year and carries a stipend. Applicants for the program must be graduates of accredited U.S. or Canadian dental schools. Further information is available from the Department of Family Dentistry. Applications should be received no later than October 15 of each year.

Courses

Predoctoral

116060 Advanced OAI 1 sb.

Predoctoral training to assess the entire concept of determining comprehensive dental treatment, using skills of a diagnostic and dental hygiene nature, small group seminars, and case studies. Residents develop a protocol for the determination of comprehensive dental treatment. Each patient is treated on the basis of personal comfort, preventive potential, physical and emotional needs, and oral hygiene habits. The program emphasizes the development of preventive dental behavior, oral hygiene, and knowledge for oral hygiene, as well as the development of the necessary skills for the treatment of dental problems.

116061 Clinical Practice Management 2 sb.

Clinical practice management is a clinical environment of multiple disciplines and dental specialties, emphasizing the importance of effective organization and in delivering high-quality care to patients. The course introduces residents to the principles of effective patient care, including the management of dental hygiene, preventive care, and patient education.

116062 Family Dental Clinic I 2 sb.

An introduction to the principles and practices of comprehensive dental care. The course focuses on the development of conservative and restorative techniques, as well as the use of preventive and therapeutic modalities in general dentistry.

116063 Family Dental Clinic II 2 sb.

Continuing educational program for residents in the field of comprehensive dental practice. The course emphasizes the use of preventive and therapeutic modalities in general dentistry.

116064 Forest Dental Lectures 1 sb.

The lecture series is oriented toward advanced educational and research topics in comprehensive dental care.

116065 Group Practice Seminar 1 sb.

The seminar is designed to provide dental specialists assigned to a group practice with an understanding of the management, organization, and financial aspects of a group practice.
the thesis and examination of the candidate by an examining committee.

Students should plan to furnish their own financial support for the research and Doctoral degree programs. Applicants for the program must be graduates of recognized schools of dentistry and must comply with the admission requirements of the Graduate College. An interview with the applicant may be requested.

**Courses**

**Dental Hygiene**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>82.224</td>
<td>Dental Hygiene Laboratory</td>
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<tr>
<td>82.225</td>
<td>Dental Hygiene Seminar I</td>
<td>1.5</td>
</tr>
<tr>
<td>82.226</td>
<td>Dental Hygiene Seminar II</td>
<td>1.5</td>
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<tr>
<td>82.227</td>
<td>Dental Hygiene Seminar III</td>
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**Predoctoral**

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<td>Dental Anatomy II</td>
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<td>82.123</td>
<td>Dental Anatomy III</td>
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<td>82.124</td>
<td>Dental Anatomy IV</td>
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<tr>
<td>82.125</td>
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**Clinical Studies**

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<td>Operative Dentistry I</td>
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<tr>
<td>82.227</td>
<td>Operative Dentistry II</td>
<td>1</td>
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<td>82.228</td>
<td>Operative Dentistry III</td>
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<tr>
<td>82.229</td>
<td>Operative Dentistry IV</td>
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**ORAL PATHOLOGY AND DIAGNOSIS**

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<tr>
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<td>Oral Pathology I</td>
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<tr>
<td>82.342</td>
<td>Oral Pathology II</td>
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<tr>
<td>82.343</td>
<td>Oral Pathology III</td>
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**Graduate**

**Discipline Studies**

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<th>Hours</th>
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</thead>
<tbody>
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<td>Graduate Biochemistry</td>
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</tr>
<tr>
<td>82.322</td>
<td>Graduate Microbiology</td>
<td>2</td>
</tr>
</tbody>
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**Predoctoral Program**

The department teaches dental and other health care students about diseases that manifest in and about the oral cavity. Students learn about the clinical, radiographic, laboratory histopathologic, and therapeutic features of these diseases as well as their etiology and natural history.

They also study identification of systemic diseases through physical evaluation of patients; the influence of systemic diseases on oral therapy; and the influence of dental therapy on systemic diseases and abnormalities.

**Graduate Programs**

**Master of Science**

**Stomatology**

Stomatology is the science of structure, function, and disease of the oral cavity. Study includes examination of related biologies, evaluation of clinical signs and symptoms, and use of biochemical, microscopic, and radiographic procedures to establish a diagnosis and plan for therapeutic management.

The department's faculty is responsible for predoctoral and postdoctoral education programs. The postdoctoral programs are diverse and flexible, emphasizing oral pathology or oral and maxillofacial radiology. Two educational tracks, one emphasizing oral pathology and the other oral and maxillofacial radiology, allow postdoctoral students to obtain advanced clinical, didactic, and research-related education while pursuing a Master of Science degree.

**Certificate in Oral Pathology and Oral Radiology in Stomatology with Oral Pathology Emphasis**

This program for dental school graduates involves comprehensive study of basic biologic and health sciences in preparation for teaching and research. A minimum of 37 semester hours of satisfactory graduate credit is required. Candidates for the M.S. degree prepare and submit a thesis based on the results of research conducted during their course of study.

**Master of Science in Stomatology with Oral and Maxillofacial Radiology Emphasis**

The minimum requirements of the certificate and master's degree programs are combined. Completion time is usually 36 to 48 months. The educational requirements for the certificate program in oral pathology meet the requirements for the preparation of dental specialists as set forth by the Council on Dental Specialties of the American Dental Association and the American Board of Oral Radiology.

**Master of Science in Stomatology with Oral and Maxillofacial Radiology Emphasis**

This program for dental school graduates involves comprehensive study of basic and health sciences in preparation for teaching and research. A minimum of 46 semester hours of satisfactory graduate credit is required. Candidates for the M.S. degree in
Courses

Dental Hygiene

6H10 Introduction to Oral Pathology 1 e.ch.

6H12 Oral Pathology for Dental Hygienists 3 e.ch.

6H16 Oral Dental Radiology for Dental Hygienists 1 e.ch.
Teaches clinical experience in taking dental radiographs, interpretation of soft and hard tissue changes.

6H18 Clinical Dental Radiology for Dental Hygienists 2 e.ch.
Teaches clinical experience in taking dental radiographs, interpretation of soft and hard tissue changes.

Predoctoral

6B10 Introduction to Diagnostic and Oral Pathology 1 e.ch.
Focus on clinical and radiographic interpretation and recognition of common oral and special diseases.

6B23 Oral Pathology 1 e.ch.

6B25 Systemic Disease Manifestations 1 e.ch.
Clinical medicine for dental students based on diagnosis and evaluation of pathologic conditions.

6B28 Clinical Oral Pathology and Diagnosis 1 e.ch.
Diagnostic evaluation and disease for clinical oral pathology based on the diagnosis and treatment of oral disease.

6B29 Clinical Oral Pathology 1 e.ch.
Teaches clinical experience in histopathology and recognition of histopathological principles of oral pathological diagnosis. Consent of instructor required.

Graduate

6B32 Oral Pathology Literature Review 1 e.ch.
Current material from a survey of current source journals.

6B32 Modernization of Oral and Periodontal Disease 1 e.ch.
Clinical experience in diagnosing and managing patients with oral and periodontal disease.

6B33 Periodontal, Laboratory and Histologic Features of Disease 1 e.ch.
Focus on the clinical and histologic diagnosis and treatment of oral disease.

6B37 Surgical Oral Pathology 1 e.ch.

6B38 Introduction to Surgical Oral Pathology 1 e.ch.

6B38 Research in Oral Pathology and Diagnosis 1 e.ch.
Undergraduate preparation.

6B39 Introduction to Histopathology 1 e.ch.

6B40 Histopathology 1 e.ch.

6B41 Tissue/Oral and Maxillofacial Surgery

Management of patient consultation, diagnosis, and therapy at a hospital based surgical service.

6B42 Clinical Oral and Maxillofacial Surgery


6B43 Periodontal Oral and Maxillofacial Surgery


6B48 Oral and Maxillofacial Surgery Residency


6B49 Advanced Oral Pathology

Disease of the oral and maxillofacial region. Consent can be adjusted to special topics of interest. Consent of instructor required. S.F. in pre-clinics. 99.202.
The clinical portion of the curriculum is designed to develop surgical skills and apply the theoretical knowledge acquired in the didactic courses. The theory and application of anesthesia, analgesia, intravenous sedation, and nitrous oxide sedation techniques are presented through didactic and clinical experiences.

Graduate Programs
Residency Program
The residency program in oral and maxillofacial surgery provides preparation for specialty practice. It is designed to combine clinical and didactic training on an individual basis. Every effort is made to adapt the program to the interests, abilities, and development of individual students. However, it is essential that 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 carefully considered in planning the structure and scope of training.

The residency period covers four years of hospital training, providing an orientation to hospital procedures, instruction in basic and clinical sciences, and acquisition of the principles of surgery and totalization with the various hospital services. Competence in clinical oral and maxillofacial surgery requires knowledge of the basic sciences and the principles of surgery and totalization with the various hospital services.

Residence training is assigned to the appropriate schools in the United States to provide the necessary experience. In addition, in hospital and clinical training, residents take advanced course work in subjects such as oral medicine, periodontology, oral surgery, oral pathology, and oral radiology.

The assumption of increased responsibility and the opportunity for clinical and operating room experience are of major importance to the training.

Residents pass clinical training in anesthesia under the direction of an anesthesiologist. Clinical training is designed to be coordinated with the requirements of the American Board of Oral and Maxillofacial Surgery. Prior to the start of the residency program, residents are required to have a minimum of one year of clinical experience in a hospital setting.

Development and implementation of a research project under staff supervision enhance the value of the residency training.

Senior residents may be given responsibility for major oral and maxillofacial surgical cases during rotations at the University of Iowa Hospitals and Clinics and at Veterans Affairs Medical Center. Each third-year resident is assigned on a rotation basis as a clinical and didactic coordinator, and assumes responsibility to qualify for certification by the American Board of Oral and Maxillofacial Surgery.

Master of Science
Requirements for the Master of Science degree may be obtained during residency. The M.S. program during the second year consists of integrated didactic and clinical study, including a research project and the 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. In addition, a graduate of an accredited course in dentistry and be licensed to practice dentistry in the United States, and be in the upper one-third of their graduating class.

Document requirements include application for graduate oral and maxillofacial surgery; an application approval form from the applicant's reference; transcripts; and letters of recommendation from three of the dental colleges from which the applicant graduated and two from two professional references.

Interviews are not required but are strongly recommended.

Applicants are selected via an matching program sponsored by the American Association of Oral and Maxillofacial Surgeons. Appointments are made based on the match results and the staff-elected teachers' active participation in the program.

The Office of Graduate Admissions sends admission forms to applicants. The form must be completed for the Graduate College approximately by March 1.

Facilities
The University of Iowa Health Care has outstanding basic and clinical science departments and laboratories. The University Hospital and Clinics, the Veterans Hospital Medical Center, the College of Dentistry and Medicine provide an appropriate environment for residency training in oral and maxillofacial surgery.

Courses
Dental Hygiene
70-604 Anesthesia and Analgesia
Principles and techniques of use of local and general anesthetic and analgesic techniques for dental hygiene procedures.

Predoctoral
70-405 Anesthesia and Pain Control I
Principles and techniques of use of local and general anesthetic and analgesic procedures for dental hygiene patients, including local anesthesia and techniques in the use of local and general anesthetic and analgesic procedures.

70-506 Basic Oral and Maxillofacial Surgery
Clinical manifestations of oral and maxillofacial anomalies and functional and aesthetic problems. The role of oral and maxillofacial surgery in the treatment of oral and maxillofacial anomalies.

70-507 Anesthesia and Pain Control II
Clinical manifestations of oral and maxillofacial anomalies and functional and aesthetic problems. The role of oral and maxillofacial surgery in the treatment of oral and maxillofacial anomalies.

70-508 Advanced Oral and Maxillofacial Surgery
Clinical manifestations of oral and maxillofacial anomalies and functional and aesthetic problems. The role of oral and maxillofacial surgery in the treatment of oral and maxillofacial anomalies.

70-510 Clinical Oral and Maxillofacial Surgery

Graduate
70-801 Hospital Procedures
Clinical and hospital procedures,Tumblr, and department records, emergency and medical services, and laboratory services.

70-802 Basic Sciences Review
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-803 Surgical Anatomy
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-804 Oral Pathology Conference
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-805 Principles of Anesthesia
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-811 Literature Seminars and Journal Clubs
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-812 Surgical Case Reports
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-813 Dentistry Research Seminars
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-815 Dental Pathology Review
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-820 Oral and Maxillofacial Surgery
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-821 Oral and Maxillofacial Surgery
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-822 Oral and Maxillofacial Surgery
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-823 Oral and Maxillofacial Surgery
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-824 Oral and Maxillofacial Surgery
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-825 Oral and Maxillofacial Surgery
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-826 Oral and Maxillofacial Surgery
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-827 Oral and Maxillofacial Surgery
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-828 Oral and Maxillofacial Surgery
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.

70-829 Oral and Maxillofacial Surgery
Biology of the teeth and their support structures, anatomy of the teeth and their support structures, physiology of the teeth and their support structures.
Special facilities for research in biomaterials and craniofacial growth are available.

Interaction with other departments provides learning and research opportunities in surgical orthodontics, cleft lip and palate treatment, speech pathology, animal experimentation, and human growth.

Admission
Admission requires the D.S.S. degree or its equivalent, and satisfaction of Graduate College requirements.

The application deadline is October 1 for the class starting July 1. Applicants are required to contact the University for interviews with department faculty.

Courses

Predoctoral

9815 Orthodontics and Craniofacial Growth 3.0

Bone and cartilage growth laboratory, periodontics, orthodontics, craniofacial growth.

9816 Orthodontic Diagnosis and Treatment 2.0

Dental foundations in orthodontics and craniofacial growth.

9817 Orthodontic Treatment Planning 2.0

Dental foundations in orthodontics and craniofacial growth.

9818 Orthodontic Therapy 2.0

Dental foundations in orthodontics and craniofacial growth.

Graduate Program

The purpose of the graduate program in orthodontics is to educate specialists capable of diagnosing and treating any malocclusion of the teeth requiring comprehensive care. The specialist should be familiar with and able to critically analyze biologic, biochemical, diagnostic, and treatment concepts in orthodontics.

Satisfactory completion of a 25-month period of intensive study, including lecture courses, seminars, clinical practices, and a research paper, qualifies students for the Certificate of Orthodontics. If students successfully complete a thesis based on an original research project, they qualify for an M.S. degree in addition to the certificate.

Opportunities are available for research and independent study in the department.
The Department of Pediatric Dentistry provides instruction for dental and graduate students in the prevention and treatment of dental disease in children. Instruction combines didactic, laboratory, and clinical experiences and gives special consideration to reviewing current literature and managing dental problems of handicapped children. It also includes effective treatment through proper utilization of dental auxiliary personnel and record management.

Graduate Program

Graduate study in pediatric dentistry leads to both certification and a master's degree. The program gives special emphasis to preparation for certification by the American Board of Pediatric Dentistry. It is fully accredited by the Commission on Dental Education of the American Dental Association.

Students are trained in all phases of pediatric dentistry and have career choices in practice, education, or research. Approximately 50 percent of the program is devoted to advanced clinical activity, 30 percent to didactic courses and practice teaching, and 20 percent to original research.

The program includes a core of didactic, clinical, and research-oriented courses supplemented by elective selections determined by individual interests. Development of a minor subject area is recommended.

Close association with the Department of Pediatrics in the College of Medicine and with the University Hospital School and The University of Iowa Hospitals and Clinics provides emphasis on oral rehabilitation under general anesthesia, instruction in physical diagnosis, and management of developmentally disabled children.

Research Opportunities

Research carried out by faculty and graduate students in pediatric dentistry has been reported regularly for national awards and journal publications. Clinical and laboratory research projects are in progress, with financial support from federal agencies and other sources. Significant contributions have been made in the areas of orthodontics, dentistry for handicapped persons, fluoride therapy, and child behavior management.

Faculty

Faculty members hold numerous national and state offices, committee memberships, consultancies, and honors in professional organizations. They serve as reviewers for several professional journals and federal granting agencies. They also participate regularly in continuing education programs for dentists and other health science personnel. Four of the professors are diplomates of the American Board of Pediatric Dentistry.

Financial Aid

Stipend support is available to qualified students through a grant from the Office for Manpower in Health Science, Bureau of Community Health Services, Department of Health and Human Services.

Admission

Prospective students visit apply to the Graduate College.

Courses

Predoctoral

99-140 Pediatric Dentistry Diagnosis and Treatment

Concepts of growth and development, behavior management, and preventive techniques for pediatric patients. 3.0 credits.

99-140 Clinical Pediatric Dentistry

Comprehensive clinical management of pediatric patients.

99-140 Clinical Seminar in Pediatric Dentistry

1.0 credits. The course of patient management, case review, treatment philosophies, and other topics in contemporary dentistry for children.

Graduate

99-235 Advanced Didactic Pediatric Dentistry

12.0 credits. Emphasis on pediatric dentistry, including growth and development, behavior management, prevention, orthodontics, and restorative procedures.

99-158 Research in Pediatric Dentistry

Research design and comparison of various research projects, with results presented in publicationally accepted forms.

99-231 Theory and Practice

Preparation of original research project and critique of it based on clinical evidence.

99-160 Advanced Clinical Pediatric Dentistry

Comprehensive clinical management of pediatric patients in the diagnosis and treatment of oral diseases and the mouth as it relates to systemic health.

99-151 Pediatric Physical Diagnosis and Diet Management

Principles of physical examination and nutrition in childhood health care.

99-150 Pediatric Therapy for Dental Patients

Principles of therapy for occlusal, aesthetic, or function disturbances.

99-150 General Anesthesia Dentistry

Use of inhalation agents throughout the course of treatment at The University of Iowa Hospitals and Clinics, emphasis on patient management and modification of procedures to improve patient comfort and treatment outcomes.

99-150 Preventive Teaching in Pediatric Dentistry

Observation and practice in current teaching procedures.

99-170 Pediatric Dentistry Case Review

Diagnosis and treatment procedures in geriatric and special care pediatric patients, particularly those with growth and development problems.

Periodontics

Head: Philip A. Littauer

Professors: Frank J. Koburk, Philip A. Littauer, William C. Rose, David A. Hovick

Associate professors: Paul J. Glick, William H. Girgus, Harry F. Reitz

Adjunct clinical assistant professors: Steven H. Cooper, Allen P. Murphy

Assistant in instruction: Nancy A. Slatik

Graduate degree offered: M.S. in Periodontology

Predoctoral Program

The Department of Periodontology is concerned with the diagnosis, treatment, and prevention of periodontal disease. The predoctoral program combines didactic, laboratory, and clinical experience, with emphasis on applying the biological concepts of periodontology to the comprehensive clinical management of patients who have periodontal disease.

Graduate Programs

Master of Science

The Master of Science program is designed to provide training for teaching, research, and specialization in periodontology. The program meets all requirements of the Commission on Dental Accreditation of the American Dental Association for advanced dental education programs in periodontology. It also meets eligibility requirements for certification by the American Board of Periodontology and complies with state or jurisdictional regulations of the Graduate Colleague for programs of higher education in periodontology.

The program requires satisfactory completion of didactic and elective courses, work preparation and defense of an advanced thesis based on original research, and satisfactory completion of comprehensive written and oral examinations.

Completion of the program requires a minimum of 24 calendar months of full-time study.

Ad Hoc Interdisciplinary Ph.D. Program

Under Graduate College regulations, proposals for interdisciplinary doctoral programs of study may be developed. The Graduate College will consider such proposals. The Department of Periodontology assists in developing individual doctoral programs designed to train dentists for careers in teaching and research in periodontal diseases. The programs that include the institutional Dental Services Program are interdisciplinary with the basic sciences.

Certification

The certification program provides a sound foundation for the clinical postgraduate periodontics and is coordinated with the Ph.D. program. The program meets all requirements of the Commission on Dental Accreditation of the American Dental Association for advanced dental education programs in periodontology. It also meets
Financial Aid
Applicants must be financially prepared to undertake undergraduate studies. Assistantships and loans are offered, depending on available resources.

Courses

Dental Hygiene

15638 Introduction to Periodontics 2.5 h

15639 Advanced Periodontics for Dental Hygiene Students 2.5 h

Predoctoral

15619 Periodontic Methods I 1.5 h

15620 Periodontic Methods II 1.5 h

15641 Periodontology: Basic Science 1.5 h

15642 Periodontics: Clinical 1.5 h

15643 Periodontology: Other Topics 1.5 h

15644 Periodontology: Advanced Topics 1.5 h

15645 Periodontology: Research 1.5 h

15650 Periodontology 3.0 h

15651 Advanced Periodontology 3.0 h

15652 Periodontology Literature Review I 1.0 h

15653 Periodontology Literature Review II 1.0 h

15654 Periodontology Literature Review III 1.0 h

15655 Research Periodontology 1.5 h

15661 Thesis Proposal in Periodontics 3.0 h

15662 Thesis Research in Periodontics 6.0 h

15663 Advanced Clinical Periodontology 6.0 h

PREVENTIVE AND COMMUNITY DENTISTRY

15611 Introduction to Periodontics to Periodontics for Dental Hygiene Students 2.5 h

15612 Advanced Periodontics for Dental Hygiene Students 2.5 h

Predoctoral

15614 Periodontics: Basic Science 1.5 h

15615 Periodontics: Clinical 1.5 h

15616 Periodontology: Other Topics 1.5 h

15617 Periodontology: Advanced Topics 1.5 h

15618 Periodontology: Research 1.5 h

15619 Thesis Proposal in Periodontics 3.0 h

15620 Thesis Research in Periodontics 6.0 h

15621 Advanced Clinical Periodontology 6.0 h

15622 Comprehensive Clinical Management of the Periodontal Patient 3.0 h
Courses

Predoctoral

844122 Principles of Occlusion 6 s.h.
Intermediate introduction to concepts of occlusion and function.
844160 Removable Prosthodontic Techniques Seminar 3 s.h.
Technical procedures in construction of complete and removable partial dentures.
844161 Removable Prosthodontic Techniques Laboratory 2 s.h.
Laboratory instruction in construction of complete and removable partial dentures.
844162 Fixed Prosthodontic Techniques Seminar 3 s.h.
Instructs in fixed prosthodontics, including diagnostic, removability, and temporization used in construction of various types of crowns and porcelain fixed restorations.
844163 Fixed Prosthodontic Techniques Laboratory 7 s.h.
Technical procedures required in construction of fixed restorations.
844168 Removable Prosthodontic Clinic 2 s.h.
Practice in a clinical clinic supplemented by technical experience and evaluation.
844180 Removable Prosthodontic Seminar 1 s.h.
Seminar comparing presently acquired knowledge to biological and basic science and individual cases with clinical removable prosthodontic problems.
844190 Fixed Prosthodontic Clinical Experience 3 s.h.
Practice in dental clinic supplemented by technical experience and evaluation.

Graduate

844235 Fixed Prosthodontic Seminar 1 s.h.
Exposure to advanced principles, acquired knowledge by biological and basic science and technique courses with clinical fixed prosthodontic procedures.
844259 Fixed Prosthodontic Seminar 1 s.h.
Exposure and discussion of topics related to diagnosis and treatment planning in fixed prosthodontics.
844293 Research Seminar 1 s.h.
Advanced research topics.
844308 Graduate Research Materials 2 s.h.
Apprentice research project. Score 2.0 or above.
844275 Complete Denture Seminar 1 s.h.
Principles, procedures, and expectations of complete denture construction, fabrication, and care.
844276 Removable Partial Denture Seminar 1.5 s.h.
Principles, procedures, and expectations of removable partial denture construction, fabrication, and care.
844277 Complete Removable Denture Seminar 1 s.h.
Principles, procedures, and expectations of complete and removable partial denture construction, fabrication, and care.
844280 Removable Partial Denture Seminar 1.5 s.h.
Principles, procedures, and expectations of removable partial denture construction, fabrication, and care.
844309 Research: Prosthodontics 2 s.h.
Research project in selected research project.

844291 Thesis Preparation: Prosthodontics 3 s.h.
Preparation and defense of thesis for the Ph.D. degree.
844307 Biomaterials Research Workshop 1 s.h.
Overview of current research in the College of Dentistry; instruction in use of scientific research equipment. Time.

844390 Advanced Clinical Removable Prosthodontics 3 s.h.
Treatment of patients requiring complete and removable partial dentures.
844391 Techniques: Methods: Removable Prosthodontics 3 s.h.
Technical methods in construction of complete and removable partial dentures, assigned problems.
844392 Practice Teaching: Prosthodontics 3 s.h.
Clinical and laboratory teaching experience assigned by instructor.
844394 Advanced Clinical Fixed Prosthodontics 2 s.h.
Treatment of patients requiring fixed partial dentures.
844395 Technical Methods: Fixed Prosthodontics 1 s.h.
Technical methods in fixed prosthodontics, assigned problems.
844396 Journal Club 1 s.h.
Prosthodontics, current literature.
844397 Clinical Cases and Treatment Planning in Prosthodontics 2 s.h.
Selected case presentations and treatment planning and delivery for complete removable prosthodontic patients.
844398 Library Assignment: Prosthodontics 2 s.h.
Research and preparation of bibliographies and abstracts.
The nation's first university-level professional college in education was
established at The University of Iowa in 1872. The department became the School of
Education, and the College of Education, structure in the basic pattern
that governs it today, was formalized in 1913. The growth of the college has
contributed to the growth of the University.

Over the years, College of Education faculty
members have been leaders in a variety of
educational fields. Particularly noteworthy
have been contributions in the fields
of educational testing and measurement. They
helped lay the foundation for today's testing
and measurement industry, making Iowa
City one of the best-known centers in the
educational specialty.

The college has four divisions: computer
education, curriculum and instruction, planning,
policy, and leadership studies; and psychological and quantitative
foundations.

It is accredited by the National Council
for Accreditation of Teacher Education (NCATE) through the doctoral degree for
the preparation of elementary and
secondary teachers and other professional school personnel. Teacher preparation
programs are reviewed and approved by
the Iowa Department of Education.

Teacher Education Programs

The College of Education at The University of Iowa offers a major-college-level
degree-based teacher preparation
programs. Two of the college's education and 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
specialization elementary (including early
childhood) and secondary special education added teaching
endorsement programs.

Permitting for special education teaching
is offered at the graduate level. A limited
number of undergraduate special education majors also are open to all students having
an interest in this area, 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 Arts General Education
Requirements by 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 should indicate their intended
  College of Education major or their interest
  in a secondary-level teaching endorsement
  program on the application for admission;
  Students already enrolled at the University
  who desire to enter a teacher education
  program and who meet eligibility
  requirements should submit an application
  to the College of Education, Office of
  Student Services, K100 Lindquist Center.

Application Deadlines

The deadline for application to teacher
education programs is July 1. Applicants
who do not meet the deadline may submit
applications by either the beginning of April
1 for consideration and may be accepted if
qualified and if openings in the program
occur.

General Requirements

Admissions to teacher education programs
are competitive. Admission requirements
may vary by program area and are based
on demand and faculty availability. In order
to be considered for admission to a teacher
education program, an undergraduate
student must have

- Been admitted to The University of Iowa
  as a degree candidate;
- Completed the American College Tests
  (ACT) or the Scholastic Aptitude Test
  (SAT);
- Attained admission status (completed
  30 semester hours prior to the semester
  during which enrollment is made in the
  foundations of education sequence of
  course."
- Achieved a 2.50 grade-point average on
  all college course work as well as course
  work completed at The University of
  Iowa;
- Applied for admission to a teacher
  education program.

Honors in Education

The College of Education Honors
Opportunities Program is open to seniors
and juniors who have attained a 3.50
grade-point average. Students with lower
GPAs who have demonstrated their
research potential may be accepted on the
basis of an interview with the director. The
Honors Opportunities Program consists of
three components: 70,000 Honor Seminar in
Education; a research mentorship with
optional credit; and a student-directed
program including an independent research
and social activities. The Honors Opportunities
Program is housed in the Centre Beine
National Center for Gifted Education.

Graduate Admission to Teacher Education Programs

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 competitive grade-point average of not
  less than 2.00 on undergraduate work and
  a score of 900 or 850 on the GRE Verbal and
  Quantitative sections; 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
  senior standing. Students selecting this
  option should not apply as special
  students instead; they must apply to the
  appropriate teacher education program
  following the undergraduate admissions
  procedure. Admission to the program must
  meet the general requirements stated in the
  undergraduate admission sections.

Application deadlines are the same as those
for undergraduates.

Student Teaching

The final phase of the teacher education
program is the professional semester, devoted to supervised student teaching
and directed observations in a variety of
situations. Periodic observers provide for
discussion and evaluation of teaching
students' experiences. The student teaching
requirement may not be met by transfer
credit unless otherwise approved.

Admission to the senior year student
the teaching semester requires separate
application. Applications must be submitted
by March 15 of the academic year
preceding the student teaching semester. The
student teaching is to be completed at the Office
of Student Teaching, K100 Lindquist Center.
Opportunities for overseas and urban
student teaching experiences are available.

Admission to student teaching requires
verification of satisfactory progress in
meeting both College of Education
standards and program area standards,
which are set at the time of admission to the
TEP and may be higher than the college
major's requirements.

Students should consult with their advisors
regarding specific requirements for the
programs year.

Waivers

Students who have completed
practicum-type experiences or courses that
they want to have considered in lieu of
program requirements should consult with
their advisors.

Urban Student Teaching

Students who want to advance their
educational interests through student
teaching in an urban setting may apply throughout the state of Michigan. Experience. Popular settings for urban student teaching include the CITE Program (Contracting Urban Teacher Education). This option is open to all education majors who meet the requirements for student teaching.

**Overseas Student Teaching**

Overseas student teaching experiences are available at the University of Wisconsin—Stevens Point. These experiences are on the staff of the University of Wisconsin—Stevens Point. Overseas positions are available as a 9-month, 10-month, or year-long assignment. These positions are available to students who meet the requirements for student teaching. Overseas assignments are for eight weeks, and overseas education students are required to complete a full semester in a U.S. assignment before student teaching overseas during a second semester. Overseas education students complete an additional eight weeks in their U.S. assignment and eight weeks overseas during one semester.

**State Requirements**

All students seeking an Iowa teaching certificate must complete a course in human relations. This requirement can be met by completing 3 credits in Human Relations for the Classroom Teacher.

**Teacher Education Minor**

Applicants to the education program should have a minimum of 18 credits in education. This requirement can be met by completing 3 credits in Human Relations for the Classroom Teacher.

**Graduate Programs**

Graduate study in the College of Education is guided by the general regulations of the Graduate College, with additional requirements set by College of Education faculty. Graduate students in education programs in the Graduate College and receive their degrees from the 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 Postsecondary Education**—M.A., Ed.S., Ph.D.
- **Substance Abuse Counseling**—M.A., Ph.D.
- **Rehabilitation Psychology**—Ph.D.
- **Nursing and Family Therapy**—Ph.D.

**Curriculum and Instruction—M.A.T., M.A., Ed.S., Ph.D.**

- **Education—Ph.D.**
- **Paralegal Studies**—M.A.
- **Curriculum and Supervision**—M.A., Ph.D.
- **Developmental Reading**—M.A.
- **Early Childhood Education and Care**—M.A.
- **Early Childhood Special Education**—M.A.
- **Elementary Education—M.A., Ph.D.
- **Secondary Language Education—M.A.T.
- **Learning Disabilities**—M.A.
- **Mathematics Education—M.A., Ph.D.
- **Physical Education**—M.A., Ph.D.
- **Secondary Language Education—M.A.T.
- **Multicultural Resources**—M.A.
- **Multicultural Education**—M.A.
- **Multicultural Special Class with bilingual education—M.A.
- **Science Education—M.A.T., Ed.S.
- **Social Studies Education—M.A.
- **Special Education—Ed.S.
- **Planning, Policy, and Leadership Studies—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.**

**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 32-semester-hour (minimum) nonthesis program designed for academically superior liberal arts graduates who completed a 4-year program in their undergraduate program. Requirements are listed in the **Curriculum and Instruction section of the Catalog**.

The program leads to a master's degree and certification as a secondary teacher in the fields of English, foreign languages, home economics, education, or music education. A graduate with at least 30 credits in a concentration is required for admission. At least 18 semester hours of graduate course work is required for the major. At least 18 semester hours of graduate course work in the student's teaching field must be completed. A minimum of 20 credits in courses in graduate courses in education must be taken to satisfy certification requirements.

**Master of Arts**

The College of Education offers a Master of Arts degree with or without thesis. The nonthesis program provides more accelerated 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 opportunities 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 similar to those of either student during the early part of his or her Ph.D. coursework. Course credits earned more than ten years before the session to which the degree is to be conferred are not counted toward fulfillment of requirements for any master's degree. Of the minimum 30 semester hours required for the degree, at least 24 must be earned in University of Iowa courses after formal admittance to the program, and at least 8 must be completed on campus.

**Master of Science**

Thesis and nonthesis programs are available for students in science education. The nonthesis requirements are similar to those for the Master of Arts degree. Postbaccalaureate program designed for
Professiona Improvement

Students are admitted to professional improvement studies in a divisional rather than in degree candidacy. This is appropriate only for persons who are seeking to improve job income, a degree or who are temporarily undecided about career plans. Students should file a charge of status under professional program objective at the earliest opportunity.

Extramural Education

Through the Division of Continuing Education, Emory College of Education courses are offered at off-campus sites and are taken at one time in a specific program. Some of these courses may be applied to meet residency requirements for degrees. There are, however, special regulations governing such credit. Students should obtain prior approval from their own advisors before registering in extramural courses. Students not regularly admitted to The University of Iowa should register in extramural courses, but credit earned prior to admission will not count toward residency requirements.

Support Units and Special Resources

Computer Curriculum Resources

The College of Education provides computer resources to all education majors. Students may use lab facilities to work on assignments or do research. The laboratory also assists students enrolled in development courses involved with computer-aided instruction, interactive videoconference instruction, and computer-managed instruction.

The Computer Resources Laboratory supports a variety of microcomputers and terminals on line with University of Iowa mainframe and time-sharing systems. More than 500 pieces of software are available for checkout by registered students. Multiple copies of word processors, spreadsheets, databases, programming languages, utilities, and instructional courseware are checked out to be used in the laboratory.

The Curriculum Resources Laboratory provides instructional materials primarily for students and faculty members interested in early childhood, secondary, and adult education. It brings to a convenient central location approximately 20,000 elementary and secondary textbooks, reference books, courses of study, bibliographies, pamphlets, and compact disc audio-visual recordings. The library also houses a 25,000-volume youth collection.

Instructional Media Production

The Instructional Media Laboratory houses a variety of instructional equipment, materials, and services ranging from equipment checkout and preproduction faculty use to the design and production of high-quality audio and video programs. It provides the facilities to preproduce opportunities for skill development in design and production of instructional materials and in the operation of instructional equipment of all types. Laboratory staff members consult with students and faculty on ways to improve the production of color slides, overhead transparencies, voice and audio-tapes, and other materials used for instructional development. The laboratory also offers workshops and credit courses through the college.

Libraries

The Main Library and the Psychology Library provide books, periodicals, reference books, films, ERIC microfiche, tests, and a reserved book room for students and faculty.

Placement

The Placement Placement Office assists students and alumni seeking teaching administrative, and related positions at all levels and in all fields. Services include individual counseling and group assistance with job search skills and employment tactics. Information about job openings, availability of a placement file, and the opportunities to interview with school recruiters on campus. An information center with access covering career information, directories of schools, colleges, and agencies, and community and state data is available for students planning careers in education and related areas.

Iowa Testing Programs

The Iowa Testing Programs staff develops standardized achievement tests, as the widely used Iowa Tests of Basic Skills and Iowa Tests of Educational Development, for use in elementary and secondary schools. This department also conducts research in educational measurement and evaluation, publishes the results of these studies, sponsors lectures and symposiums, provides consulting services, and produces training experiences for graduate students in measurement and statistics.

Connie Belin National Center for Gifted Education

The Iowa State Board of Regents established the Connie Belin National Center for Office Education in 1986. Based in the College of Education, the center conducts research and service in gifted education. As a state-wide resource, it also gathers and disseminates information on the education of gifted students.

Programs and services of the Belin Center include the Connie Belin Fellowship Program in Gifted Education, the Honors Opportunities Program; Iowa's Counselor Laboratory for Talent Development; the Henry B. and Jacob E. Wallace National Research Symposium on Talent Development; faculty counseling; consultation; educational assessment; museum and internship experiences; and college work in gifted education. For more information, contact the Director, Connie Belin Center, 212 Linton Center, The University of Iowa, Iowa City, Iowa 52242.

North Central Association

The North Central Association (NCA) of Colleges and Schools is the largest and most active of the regional accrediting associations in the United States. Iowa is one of 18 member states. The NCA's primary purpose is to foster improvement in education at the elementary, secondary, and collegiate levels by self-examination of educational programs, visits by evaluative teams, and adherence to policies and standards for continued membership. The University of Iowa houses and supports the office of a state director of the Iowa NCA State Committee.

Institute for School Executives

The Institute for School Executives is a membership organization for school districts and other educational agencies organized in Iowa by the College of Education. Begun more than a decade ago, it continues to educate and staff development opportunities for school administrators across the state.
An executive planning board of practicing school administrators involves directors and guide for programming activities. Management staffs are coordinators of faculty members of the Division of Planning, Policy, and Leadership Studies. Institute activities provide an excellent opportunity for school administrators and College of Education faculty and students to interact and exchange ideas, experiences, and research information on a variety of topics.

Research Support

The Cooperating School Programs has been a service of the College of Education since 1977. The program acts as a window for University faculty and students to coordinate research and class projects with school districts willing to participate in the studies. Applicability 40 requests from University faculty and students to conduct projects using students and staff from schools in Iowa and Illinois are processed each year. The dean's office supports and promotes faculty research, development, and acquisition of grants and coordinates such efforts with the University's Division of Sponsored Programs.

Special Resources

The School Program for Emotionally Disturbed Children is located in the West Liberty Psychiatric Hospital. All students attending this school are required to take part in the class. The program is supported by the West Liberty Psychiatric Hospital. Opportunities are available for treatment and practical experience in school psychology.

The University Counseling Service provides counseling and psychological services for students in counseling psychology.

University Hospital School is a University-affiliated facility and, as such, it strives to provide a viable balance of direct services to developmentally disabled youngsters, interdisciplinary training activities for graduate, and professional programs in psychology and effectiveness.

Financial Aid

Students interested in employment opportunities associated with the support units and special resources listed above should contact the director of each facility and indicate their interests, their academic and experience records, and their career or degree goals at The University of Iowa.

Graduate Assistantships

Individual academic programs provide opportunities for teaching, research, or service assistantships, as well as the fellowship and related employment opportunities. Inquiries should be addressed to the chair of the department or to the director of the special program in which the student believes he or she can provide service or achieve an outstanding academic experience. The position has applied for admission, or his or her work file is available for review by those responsible for selecting the assistantship(s) for the student's program. Assistantship opportunities are usually, but not always, made by the program area.

Special Graduate Assistantships in Education

The Iowa Testing Program and the Iowa 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. These programs 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. Applicants are assigned to work which direction of the faculty member in a research capacity and must be enrolled for not fewer than 6 nor more than 12 semester hours per semester. All assistantships are subject to the same requirements as graduate students. The application deadline is March 1.

College of Education Student Loan Fund

The college's student loan fund was established to assist College of Education students who are faced with extraordinary or unforeseen expenses while pursuing degree or certification programs. The burden may be a senior or post-graduate degree seeking teaching certification, or is a graduate student seeking an advanced degree or certification in the College of Education. He or she must have completed the equivalent of at least two semesters of full-time course work at The University of Iowa and have a strong academic record, and demonstrate potential for success in the field of education.

Information and application forms are available from the director of career development, Educational Placement Office, NE2 Lindquist Center.

College of Education Awards

Awards are presented to outstanding graduate students in the College of Education in the spring semester meeting of the college faculty. Selected awards include:

- The John Elderkin 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 Bonnema-Henningsen Fellowship, awarded annually to a doctoral student in the field of educational measurement and statistics. Nominees have completed at least one year in the graduate program at the University of Iowa. The award is based on academic performance and potential for the highest level of professional promise in the field of measurement and statistics. The stipend is supplemented by the recipient's teaching or research assistantship.
- The Robert J. 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 substantial printed work.
- The Eugene McCluskey Award, presented to the outstanding candidate for an advanced degree in educational administration.
- The Donald A. Miller Memorial Award, presented to an outstanding first-year M.A. graduate in mathematics counseling.
- The Melvin R. Orzech Award, presented annually to a student demonstrating the highest level of achievement in the doctoral program in educational measurement and statistics. It is granted to a third- or fourth-year student with at least a year of study remaining who has shown the most outstanding academic performance and potential for the highest level achievement in research in this field.
- The award honors Professor Melvin R. Orzech (1902-1968) for his significant contributions to the field of educational measurement and statistics and for his devoted service to the arts and educational programs at The University of Iowa. The fund is established from income raised from the sale of computer programs (CU35) developed by Professor Novak.
- The Paul C. Tucker Award, presented to the outstanding candidate for the Master's Degree in Education.
- The Ira Lantich Theta 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 exhibit striking personal qualities.
- The Betty Percy Scholarship Award, presented to an outstanding student in an area who is expected to benefit the field in some direct way.
- The Franklin Brunel International Student Award, presented to an outstanding international student pursuing a Ph.D.
COUNSELOR EDUCATION

Chair: Robert R. Haynes

Professors: Nicholas Caputo, Richard Dutten, H. Glenn Flemming, David Habor, Robert P. Hora, James F. Jack, David W. Johnson, G. Thomas Johnson, Orlando M. Ea, Thomas R. Roller, James E. Williams, William J. Wright, John W. Young

Associate professors: Charles B. Chappell, Karen A. Dugger, Thomas A. Hensley, Robert E. Reed, James A. Stine, Thomas J. Weisenbarger

Assistant professors: Loretta R. Blackwell, David S. Bracken, H. Glenn Flemming, David Habor, Robert P. Hora, James F. Jack, David W. Johnson, G. Thomas Johnson, Orlando M. Ea, Thomas R. Roller, James E. Williams, William J. Wright, John W. Young

Adjunct instructors: Andrew J. Stine, Robert F. White

Adjunct instructor: Ray Morgenstern

English: b.a., M.A., Ph.D.

The Division of Counselor Education is primarily involved in the preparation of practitioners and scholars at the graduate level. Through degree programs a student develops the necessary education, rehabilitation counseling, counseling and human development, substance abuse counseling, and family therapy. The division also offers basic courses in interviewing and interpersonal skills for students in other professional and graduate programs, as well as for undergraduates.

Admission

Detailed information on admission and program requirements is provided in the freshman "Programs for Advanced Degrees," available from the Division of Counselor Education.

All applicants for the Master of Arts, Education Specialist, or Doctor of Philosophy degrees 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.

Official report of Graduate Record Examination (GRE) General Test scores—verbal and quantitative. A statement of the candidate's reasons for seeking an advanced degree in counselor education, including a statement of personal career objectives. A personal or telephone interview if requested. These comments are valuable to the M.A. degree program.

M.A. and M.S. students may be required to satisfactorily complete a comprehensive examination in their program.

For admission to the doctoral degree program, the candidate must have completed at least 72 hours of graduate study and at least 12 hours beyond the master's degree, with a minimum cumulative grade-point average of 3.3 or better. The prospective student must also be admitted to the Graduate School and approved by the Department of Counseling and Personnel Services. Approval is based on the results of an interview and a review of the student's undergraduate record.

The Doctor of Philosophy in Counseling (Ph.D.) in Counseling is designed for students who wish to pursue a career in counseling and related fields. The program requires a minimum of 120 semester hours, including 60 hours of coursework and 60 hours of research and dissertation work. The program is offered on a full-time or part-time basis.

The program is designed to provide students with a solid foundation in the theory and practice of counseling and related fields. Students are required to complete a minimum of 36 hours of coursework in counseling and related fields. The program also includes a minimum of 36 hours of research and dissertation work. The program is offered on a full-time or part-time basis.

Graduate students must meet the federal standards to maintain their student loans and degree.

Maintaining Candidacy

All graduate students must meet the federal standards to maintain their student loans and degree.

Maintaining 3.0 in the graduate program: MA—3.0, Ph.D.—3.3, M.S.—3.5.

Successfully complete practicum, internship, or equivalent professional experience.

Maintain professional behavior consistent with the American Association for Counseling and Development guidelines and ethics, and all additional code of professional ethics adhered to by any agency with which the student completes a practicum or internship.

Continuing progress toward the degree through successful completion of hours specified in the curriculum plan; progress toward the degree requires active registration each semester; exceptions may be approved by the advisor.

The academic and professional progress of division students is reviewed annually.

Foreign Students

Foreign students must also provide a Test of English as a Foreign Language (TOEFL) score with their application. Typically a score of 50 is required. Depending on the TOEFL score, the division may require students to take and pass University of Illinois courses in English usage that is designed especially for them.

Final Decision, Special Requirements

All the criteria listed above are considered minimum standards for consideration for admission. Final decisions on admissions are made by faculty committees. Also, some programs have specific admission requirements due to certification standards. For example, teaching certification 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 on a conditional basis if the faculty determines that there are strengths and promises warranting conditional status. The following are the conditional provisions:

M.A. Level—students must complete 12 semester hours of core courses (approved by an advisor) over two consecutive semesters with a minimum cumulative grade-point average of 3.3 or better. Ph.D.—Students must complete 12 semester hours of core courses (approved by an advisor) over two consecutive semesters and earn a cumulative grade-point average of 3.3 or better. Maintaining Candidacy All graduate students must meet the federal standards to maintain their student loans and degree.

Maintaining 3.0 in the graduate program: MA—3.0, Ph.D.—3.3, M.S.—3.5.

Successfully complete practicum, internship, or equivalent professional experience.

Maintain professional behavior consistent with the American Association for Counseling and Development guidelines and ethics, and all additional code of professional ethics adhered to by any agency with which the student completes a practicum or internship.

Continuing progress toward the degree through successful completion of hours specified in the curriculum plan; progress toward the degree requires active registration each semester; exceptions may be approved by the advisor.

The academic and professional progress of division students is reviewed annually.

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Maintaining 3.0 in the graduate program: MA—3.0, Ph.D.—3.3, M.S.—3.5.

Successfully complete practicum, internship, or equivalent professional experience.

Maintain professional behavior consistent with the American Association for Counseling and Development guidelines and ethics, and all additional code of professional ethics adhered to by any agency with which the student completes a practicum or internship.

Continuing progress toward the degree through successful completion of hours specified in the curriculum plan; progress toward the degree requires active registration each semester; exceptions may be approved by the advisor.

The academic and professional progress of division students is reviewed annually.
Probational Status
M.A. students who earn an average grade-point average lower than 3.00 and Ph.D. students who earn a grade-point average lower than 3.30 are put on probation. Students on probation status have two consecutive semesters 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 probationary status during his or her program of study.

Application Deadlines
Deadline for the M.A. and EDS programs are June 1 for fall semester; November 1 for spring semester. The Ph.D. program deadline is March 1 for fall semester.

Applications must be complete before they will be reviewed. Applicants are responsible for providing a complete application dossier. Application fees are available from the Division of Counseling Education office. N338 Lindquist Center, The University of Iowa, Iowa City, IA 52242; phone (319) 335-6275. Applicants can check on whether an application dossier is complete by contacting the Office of Student Services, N310 Lindquist Center. The University of Iowa, Iowa City, IA 52242; phone (319) 335-5660.

Graduate Programs
Student Development in Postsecondary Education
Master of Arts
The M.A. program provides preparation for college positions in admissions, student activities, financial aid, student unions, career planning and placement, residence halls, foreign students services, community college counseling, adult and continuing education, and external degree programs. With experience, it is a foundation for positions as student dean and college teachers.

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 EDS program provides specialized professional preparation in college student development beyond the master's level for persons planning to enter doctoral study. It helps to prepare candidates for positions such as associate dean or dean of students in a small college or as a director of admissions, student activities, financial aid, a student union, career planning and placement, residence halls, foreign student services, a community college counseling, adult continuing education, or external degree programs.

Doctor of Philosophy
The Ph.D. program prepares for positions such as counselor education, research, full professor, assistant dean or dean of students, or as a director of admissions, student activities, financial aid, a student union, career planning and placement, residence halls, foreign student services, a community college counseling, adult continuing education, or external degree programs.

The M.A. thesis or its equivalent is not necessary for admission to the Ph.D. program. But, in order to take the Ph.D. comprehensive examination, students must offer an M.A. thesis in representation as evidence of ability to do research.

Rehabilitation Counseling
Master of Arts
The M.A. program (accredited by the Council on Rehabilitation Education) provides preparation for work in state rehabilitation agencies, rehabilitation facilities, rehabilitation centers, private rehabilitation agencies, mental hospitals, prisons, and in other public and private agencies concerned with the rehabilitation of adults.

Doctor of Philosophy
The Ph.D. program provides preparation for leadership in rehabilitation counseling education, research, and service programs in universities, state agencies, and programs in public institutions and the private sector.

Applicants who have recently graduated from an M.A. program in rehabilitation counseling and who have not had at least one year of full-time work experience in rehabilitation counseling are not considered. Six months of service experience is highly desirable and enhances the application.

Ph.D. in Rehabilitation Psychology
The Ph.D. program is intended to meet the needs of students who are primarily interested in working as professionals in institutional 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, both public and private. This program is a designated psychology program of the National Register of Health Service Providers in Psychology.

As with the Ph.D. program in rehabilitation counseling, applicants 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 counseling or the completion of their M.A. program.

Counseling and Human Development
Certification
Applicants with a master's degree in counseling or a related field, elementary or secondary school teaching certification, and at least one year of successful teaching experience may apply for certification only in school counseling. Counseling and human development-certificated personnel are not eligible for certification for elementary school counselor (K-6) and secondary school counselor (7-12). Prerequisite certification only is available for applicants with master's degrees in postsecondary teaching certificates.

Master of Arts
The M.A. program, accredited by the Council of Accreditation in Counseling and Related Fields (CACREP), provides preparation in counseling in a variety of school settings.

Specialist in Education
The purpose of the EDS program is to enable school counselors and counselor educators to increase their competence 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
The purpose of the M.A. program in substance abuse counseling is to prepare the student to function in a wide variety of community counseling settings. The emphasis is on individual, group, and family counseling.

Marital and Family Therapy—Ph.D.
This doctoral program is designed to prepare students with knowledge and advanced counseling skills, specifically in the areas 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 practicum experiences is available in neighboring community agencies, schools, and colleges, as well as throughout the University.
Financial Aid

Depending on federal funding, graduate teaching assistantships 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 institution's student service units award part-time assistantships to graduate students in the division.

Applications for assistantships should contact the program coordinator of the graduate program they plan to enter.

Courses

SC49A: A Vicious Cycles

3 h.

This course addresses the cycles of victimization and perpetuation of violence for individuals and organizations. Emphasis is on understanding the dynamics of the cycle and strategies for breaking the cycle.

SC112E: Human Sexuality

3 h.

This course covers the biological, psychological, and social aspects of human sexuality, focusing on sexual orientation, gender identity, and sexual expression.

SC112F: Cultural Dilemmas in Human Sexuality

3 h.

This course explores the cultural and historical contexts of human sexuality, focusing on issues of diversity, equity, and inclusion.

SC120: Programming for the Gifted

3 h.

This course covers the theory and practice of educational programming for gifted students, focusing on identification, assessment, and instruction.

SC125: Education of the Gifted

3 h.

This course covers the theories and practices of educating gifted students, focusing on high ability, talent development, and social/emotional needs.

SC149: Introduction to Educational Giftedness

3 h.

This course is an introduction to the field of educational giftedness, focusing on identification, assessment, and instruction.

SC151: Development and Family Therapy

3 h.

This course covers the theories and practices of family therapy, focusing on family dynamics, communication, and interventions.

SC152: Therapeutic Interventions for Emotional and Behavioral Disorders

3 h.

This course covers the theories and practices of therapeutic interventions for emotional and behavioral disorders, focusing on assessment, diagnosis, and treatment.

SC153: Introduction to Rehabilitation Counseling

3 h.

This course covers the theories and practices of rehabilitation counseling, focusing on assessment, diagnosis, and treatment.

SC154: Counseling for Special Populations

3 h.

This course covers the theories and practices of counseling for special populations, focusing on cultural, linguistic, and socioeconomic diversity.

SC155: Family Therapy

3 h.

This course covers the theories and practices of family therapy, focusing on family dynamics, communication, and interventions.

SC156: Counseling in Schools

3 h.

This course covers the theories and practices of counseling in schools, focusing on school counseling models, ethics, and legal considerations.

SC157: School Counseling: Policy and Practice

3 h.

This course covers the theories and practices of school counseling policy and practice, focusing on federal and state regulations, and ethical considerations.

SC158: Exceptional Education

3 h.

This course covers the theories and practices of exceptional education, focusing on identification, assessment, and interventions for students with disabilities.

SC159: Curriculum Development in Gifted Education

3 h.

This course covers the theories and practices of curriculum development for gifted education, focusing on assessment, diagnosis, and treatment.

SC160: Social Work Field Placement

3 h.

This course involves supervised field placement for social work students, focusing on professional practice and ethical considerations.
C6301 Practicum in Elementary School Counseling

C6302 Practicum in Secondary School Counseling

C6305 Practicum in Mental Health Counseling

C6306 Practicum in Presecondary Counseling

C6311 Practicum in Counseling and Psychological Services for Gifted Students 1.0-3.0 Educationally, and emotionally gifted students who have拧tested work in counseling, educational, counseling psychology, school psychology, and related areas, and who have demonstrated interest in these fields. Emphasis on role of the counselor in presecondary school settings. Emphasis of instructor required. Consent of instructor required.

C6317 The College Student 1.0-2.0 A study of the major characteristics of college students, student-produced literature and implications for higher education.

C6320 Student Study Services 2.0 Includes individual and small group study skills training and problem-solving to enable students to develop a study program leading to success in their college work. Private, non-credit course. Consent of instructor required.

C6331 Practicum in Student Services 2.0 A supervised practicum for students in student services agencies. May repeat. Consent of instructor required.

C6351 Multicultural/Minority Psychology 1.0-3.0 A study of the psychology of minority groups within the context of today's social, political, and economic environment. Consent of instructor required.

C6352 Practicum in Rehabilitation Counseling

C6353 Internship in Rehabilitation Counseling

C6354 Advanced Counseling and Consultation 3.0 Advanced counseling of college clients with personal and interpersonal problems. Consent of instructor required.

C6361 Psychological Services Program 3.0 Psychological services at the college level. Emphasis on counselor education. Consent of instructor required.

C6387 Advanced Group Counseling and Psychoeducation 3.0 Advanced group counseling and psychoeducational groups are designed to meet special needs of college counseling centers. Consent of instructor required.

C6388 Advanced Practicum in Counseling 3.0 Advanced practicum in counseling, emphasis on the counseling process in a university counseling center. Consent of instructor required.

C6389 Health Therapy Techniques 1.0 Advanced health therapy techniques, stress, relaxation, and techniques of the preventive health care. Consent of instructor required. Prerequisites: PH401, PH402, PH403,

C6391 Development and Change 3.0 Theories of adolescent development and change. Consent of instructor required.

C6392 Psychological Treatment of Human Behavior 3.0 Research background and in-depth knowledge of several techniques of psychological therapy and their application with special emphasis on the techniques of behavior therapy and group therapy techniques. Consent of instructor required.

C6393 Marriage and Family Practicum 2.0 Students work exclusively with married or family unit during a semester, applying the concepts and techniques of premarital and marital therapy. Consent of instructor required.

C6394 Advanced Seminar in Individual, Marital, and Family Therapy 3.0 Advanced seminar in individual, marital, and family therapy with emphasis on the application of psychological therapy techniques to problems of individual and marital adjustment. Consent of instructor required.

C6395 College Practicum in Counseling

C6603 Professional Seminar in Counseling

C6605 Educational Research in Counseling 3.0 Seminar on research design and methodology. Consent of instructor required.

C6606 Educational Research in Counseling 3.0 Seminar on research design and methodology. Consent of instructor required.

C6607 Advanced Seminar in Counseling

C6608 Advanced Seminar in Counseling

C6609 Intercollegiate Seminar in Ethics in Counseling Education 3.0 Seminar on ethics in counseling education. Consent of instructor required.

C6610 Seminar on Counselor Supervision 3.0 Seminar on counselor supervision. Consent of instructor required.

C6615 Advanced Group Counseling and Psychoeducation 3.0 Advanced group counseling and psychoeducational groups are designed to meet special needs of college counseling centers. Consent of instructor required.

C6625 Supervising the Mental and Family Practicum 1.0 Supervising the mental and family practicum. Consent of instructor required.

C6945 Student Research in Counseling 3.0 Topics in counseling research, and problems of research. Consent of instructor required.

C6949 Ph.D. Thesis in Counseling Education 3.0 Consent of instructor required.
In order to be considered for admission, students must have completed a minimum of 30 semester hours of college work with a minimum cumulative grade-point average of 2.50. For some subject areas, additional criteria must be met. A limited number of applicants are accepted into each major area of study, so a 5.0 grade-point average does not assure admission. Admissions decisions are based on grade-point average in the major and other criteria relevant to teaching success.

If at any time after admission the grade-point average falls below 2.50, the student is placed on probation for one semester. If a 2.50 is not attained during the probationary semester, the student is dropped from the TEP. Students should consult a College of Education advisor in their program area, or the Division of Curriculum and Instruction Office, N259 Lindquist Center, for more information on admissions criteria.

Graduate students who apply to the Graduate College for "certification only" or to an M.A. program so that they may apply for admission to the teacher education programs. Their admission to either graduate program includes admission to the TEP. The deadline for applications for either program is June 1. Applications submitted 90 days prior to October 1 or March 1 also are considered.

A limited number of applicants are accepted into each program area of the TEP, so meeting the Graduate College admission requirements does not ensure admission. Admission decisions are based on grade-point average in the major and other criteria relevant to teaching. Applicants must meet the following requirements to be admitted into the TEP: students are assigned in education software.

Admission to Student Teaching

Admission to the TEP permits students to enroll in some Education courses and requires a 2.50 cumulative grade-point average. Permission to student teaching semester, however, requires a separate application and approval of each student's credentials and projects 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 area of the TEP occurs at the time of application for student teaching. Students should consult their Education advisor at the Division of Curriculum and Instruction office for more information about the admissions process and requirements for student teaching in their certification program.

Elementary Education

Foundation Courses
These courses may be completed before any methods courses are begun.

CER Pre-Education Practicum
Elementary Education 2 s.h.

CER Introduction: Elementary and Early Childhood Teaching 3 s.h.

CER Educational Psychology and Measurement 3 s.h.

These two courses should be completed before other methods courses are begun, and they may be completed during the first semester of methods courses.

CER Auditory Equipment for Instruction 1 s.h.

CER Introduction to Microcomputing for Teachers 1 s.h.

Total 10 s.h.

Methods Courses

Three courses taken concurrently:

CER 123 Literature for Children I 2 s.h.

CER 149 Methods: Elementary School Language Arts 3 s.h.

CER 146 Methods: Elementary School Reading 3 s.h.

Four courses taken concurrently:

CER 141 Methods: Elementary School Social Studies 2 s.h.

CER 142 Methods: Elementary School Science 2 s.h.

CER 143 Methods: Elementary School Mathematics 2 s.h.

CER 144 Mathematics: Science Preclinical 1 s.h.

CER 145 Methods and Materials: Music for the Classroom Teacher 2 s.h.

CER 152 Methods and Materials: Art for the Classroom Teacher 2 s.h.

CER 277 Methods and Materials: Physical Education for the Elementary Teacher 2 s.h.

CER 147 Methods and Materials: Health Education for the Elementary Teacher 2 s.h.

Total 10 s.h.

Other Requirements

CER 126 Evangelical Persons 3 s.h.

NUR 110 Nutrition Relations for the Classroom Teacher 2 s.h.

Area of Specialization

A minimum of 24 semester hours must be completed in one of the following areas of specialization, senior English, English language arts, health, history, mathematics, music, physical education, reading, science, social science, special education, speech communication/conferencing. 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 only if they are offered with the pass/fail option. Courses in some areas of specialization are sequenced in a certain order leading to a student's certification; others have no required sequence and may be completed before or after student teaching. Students should consult with their advisors if they have questions.

Student Teaching

CER 170 Classroom Management 2 s.h.

CER 175 SuperVied Teaching Elementary School-Interactive 4-6 s.h.

CER 176 Supervised Teaching in the Elementary School-Pre-Pro and Post-Accept Phase 5-7 s.h.

CER 172 Special Area Student Teaching 0.5 s.h.

Total 16 s.h.

Transfer students must complete at least eight semester hours of course work, including two courses numbered CER 170, CER 175, or CER 176 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 total approximately 113-120 semester hours. Students who elect to test out of the rhetoric, foreign language, math, and other liberal arts requirements may be able to satisfy their program requirements as a few as 113 semester hours.

Adding Endorsements to Certificates

The undergraduate elementary education program is designed specifically to prepare students to teach kindergarten through fourth grade. As an addition to the K-4 Iowa endorsement, students may complete requirements for the Iowa prekindergarten/kindergarten endorsement or an Iowa subject area endorsement (see "Areas of Specialization," above). Students seeking the prekindergarten/kindergarten endorsement must complete the elementary major, the early childhood specialization, and the following Millifiore courses:

CER 126 Methods and Materials: Music for the Classroom Teacher 2 s.h.

CER 122 Methods and Materials: Art for the Classroom Teacher 2 s.h.

CER 144 Mathematics: Science Preclinical 1 s.h.

CER 134 Parent Teacher 1 s.h.

CER 169 History and Philosophy of Early Childhood Education 3 s.h.

CER 185 Development and Administration of Child Care Centers 3 s.h.

CER 188 Supervised Teaching Early Childhood Center 7.14 s.h.

"Either CER 126 or CER 122 may be taken in place of the elementary major.
Students seeking teacher education or endorsements in other areas must assume the responsibility of determining what extra requirements have to be met. Addresses for other state certification offices are available in the College of Education Student Services Office, N215 Lindquist Center.

Secondary Education

Undergraduate students seeking secondary education degrees are required to meet the requirements for the Bachelor of Arts, Bachelor of Science, or Bachelor of General Studies degree described in the
College of Liberal Arts section of the Catalog
Graduate students may be admitted to a program leading to teacher certification as "certification only" candidates in the Graduate College. They are subject to all policies, rules, and regulations of that college. Eligible graduate students may also complete teacher certification by pursuing an M.A.T. degree in English education, home economics education (must be completed by May 1991), foreign language education, or science education.

Certification requires a major of at least 20 semester hours of course work in a subject area leading to a major in the area. Course requirements for each major are available in the Division of Curriculum and Instruction Office, NS91 Lindquist Center. Candidates for secondary school teaching certification also may receive approval to teach in additional subject areas by completing so approved program. To be 24 or more semester hours of course work in these areas.

Secondary school teacher preparation programs are offered in the following areas.

Art
Coaching
Communication studies (speech communication/theatre arts)
English
Foreign languages—Spanish, French, German, Russian, Latin, Chinese, and Japanese
Health education
*Home economics
Journalism
Mathematics
Music
Physical education
*Psychology
Science, including general science, physical science, chemistry, physics, and earth science
Social science, including anthropology, economics, geography, history, political science, psychology, and sociology
*Available as an additional approval area only. A major in another select major area is required for certification.

*The home economics program will be closed after May 1992. Only students who can complete their home economics courses by that date may enter the secondary school TFT in home economics.

An Iowa secondary teaching certificate qualifies holders to teach in grades 7-12. Students planning to teach art, music, or physical education typically complete a program that prepares them for both elementary and secondary-level certification.

Secondary teacher preparation programs in several other subject area also offer a program that leads to certification as a subject matter specialist in grades K-8. This K-8 certification is available only in the same subject area as the secondary certification. Mathematics and science education require completion of the elementary subject certification. Completion of the elementary specialist certification is highly recommended for foreign language education.

Candidates are encouraged to obtain more information and the name of an advisor from the Curriculum and Instruction Office, NS91 Lindquist Center.

Requirements
Undergraduate candidates for certification to teach in secondary schools may complete their certification requirements in addition to the requirements in their major.

Out courses from 25:00-25:99
Introduction to Teaching (a specific subject area, except science education)
75:03 Issues in Education
75:75 Educational Psychology and Measurement
91:90 Human Relations for the Classroom Teacher
One or more methods of teaching courses in the major field

Credit in the course module in the subject area

0.1 s.h.
12 s.h.
2-3 s.h.
2 s.h.
3 s.h.
3 s.h.
3-5 s.h.

Students teaching

With an advisor's approval, a graduate student may elect a minor and graduate course in 75:90-75:99, 75:100-75:295, and TW53. Students must complete the methods courses in their major teaching field before student teaching.

For all subject areas, student teaching must be done all day for a full semester. Students in secondary education may register for their student teaching at 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 is considered only if the proposed student teaching site provides the student with a specific program opportunity not available in the contractual area or utilizes special cooperating teacher expertise.

Students also may do student teaching in Europe via the Consortium for Overseas Student Teaching, however, overseas student teaching is in addition to and not a substitute for one of the student teaching options described above.

Additional information about alternative (student teaching and application procedures) is available from the Office of Student Services, NS91 Lindquist Center. Applications for student teaching must be filed in the Office of Student Services by March 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 a postgraduate certificate for special education. For course requirements, see specific programs listed for the Master of Arts in "Special Education." In this section of the Catalog, Arts and education 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 classes involved in practicums, and some involve teaching sections of undergraduate method courses and supervising student teachers. Most assistantships are classified as not-for-credit. This classification permits students to register for a maximum of 12 semester hours at credit per semester. Graduate students with assistantships must register for a maximum of 12 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 dean's office.

Secondary, Special Education

A limited number of assistantships are available for graduate students pursuing advanced degree programs in special education. Students may count no more than 12 semester hours toward special education assistants. In addition, special education assistants may work for no more than 12 semester hours per quarter, and special education assistants do not receive pay. Assignments vary. Some involve teaching undergraduate courses or supervising practicum experiences. Graduate students with assistantships must be accepted by the College of Education.

Secondary education graduate students also may be eligible for assistantships in the College of Liberal Arts departments. A candidate for an assistantship in these programs should apply directly to the specific department or center and the College of Education adviser directing the program in the appropriate field.

Traineeships in selected certification and master's degree programs are available to full-time graduate students. The Janet Zoe Memorial Trustee (Heppel) is available each year to one student who is pursuing a special education teaching certificate. Preference is given to students working toward certification in physical disabilities.
Graduate Programs

Early Childhood Education

Master of Arts

The Master of Arts program in early childhood education is designed to prepare persons to administer programs and/or deliver education and care to children from infancy through the early primary grades in private or public settings, or to serve as early childhood consultants or college college instructors. It is offered in thesis and non-thesis options.

Admission

Students must meet the general admission requirements of the Graduate College and have an undergraduate grade-point average of 3.0. Students must have a valid preschool/kindergarten or elementary endorsement or equivalent.

Non-native students must have a TOEFL score of at least 550 to be eligible for admission; those with scores of 550 to 600 are admitted conditionally and must satisfactorily complete an English evaluation before registering for courses. Course work recommended by English proficiency evaluators must be completed before conditional status can be changed. English proficiency course credit may not be applied toward the master's degree.

Requirements

The thesis option requires a minimum of 30 semester hours of credit; the non-thesis option requires 32.

Foundation Courses

7E-109 History and Philosophy of Early Childhood Education 3 s.h.
7E-109 Development and Administration of Child Care 3 s.h.
7E-234 Building Foundations for Reading (Developmental and Primary) 3 s.h.
7E-267 Curriculum Development in Early Childhood (5-8 Years) 3 s.h.
7E-268 Curriculum Development in Early Childhood (0-3 Years) 3 s.h.
Total 18 s.h.

Related Courses

One of these (or an approved substitute):
7P-206 Advanced Child Development 3 s.h.
31134 Cognitive Development of Children 3 s.h.
One of these:
7E-114 Parent-Child Relationships 3 s.h.
7E-134 Parent-Teacher Communications 3 s.h.
7P-353 Consultation Theory and Practice 3 s.h.
Total 9-12 s.h.

Areas of Specialization

Curriculum

Students must complete at least 11 semester hours of credit in chosen from one or two content areas such as reading and/or language arts; mathematics, science, social studies, music, art, children's literature, or creative arts.

Human Relationships

Four of these:
7U-130 Exceptional Persons 3 s.h.
7E-286 Supervision of Student Teachers and Auxiliary Personnel 2-3 s.h.
7E-114 Parent-Child Relationships 3 s.h.
7E-134 Parent-Teacher Communications 3 s.h.
7P-260 Consultation Theory and Practice 3 s.h.
Total 10-12 s.h.

Community College Teaching

All of the following must be completed for endorsement Post-Secondary Certification for Arts and Sciences.
7H-171 The Community College 2-3 s.h.
7E-151 Curriculum Development in Community College and Health Careers 3 s.h.
7E-270 Intern Seminar 1-3 s.h.
7E-175 Post-High School Staff Development Workshop 0-2 s.h.
7E-132 Teaching of Adults 3 s.h.
7H-101 College Teaching Internship 2 s.h.
7P-114 Introduction to Educational Measurement 3-4 s.h.
Counseling

7C-162 Introduction to Marriage and Family Counseling and Psychotherapy 3 s.h.
7C-116 Community Counseling 3 s.h.
7E-150 Group Process for Related Professions 3 s.h.
7C-222 Interventions for Preventive Prevention in the Schools 3 s.h.
7P-263 Consultation Theory and Practice 3 s.h.
Total 12-15 s.h.

Social Work

42-42 Organization and Community Practice 3 s.h.
42-52 Family Violence 3 s.h.
42-52 Social Policy and Interdisciplinary Systems, Domestic and International 3 s.h.
Total 12 s.h.

Thesis/Research

7P-110 Introduction to Statistical Methods 3 s.h.
7P-110 Introduction to Educational Measurement 4 s.h.
7E-262 Field Service Project 3 s.h.
7E-730 M.A. Thesis in Early Childhood and Elementary Education 2 s.h.
Total 9-10 s.h.

Comprehensive Examinations

All students take one written examination in each of their selected areas of specialization. Thesis students take a second, oral examination related to their thesis or field-service project.

Note: This program does not lead to the Iowa endorsement for teaching in prekindergarten/kindergarten or to any other teaching endorsement, with the exception in postsecondary certification. All of the required courses in this area of specialization have been successfully completed.

Elementary Education

Master of Arts

This program is designed to prepare master's degree candidates in elementary education to serve as teachers, grade level or subject area supervisors, or curriculum consultants in 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 students who have not completed an undergraduate program in elementary education must be admitted initially as "certification only" students.

Requirements

The thesis option requires 30 semester hours of credit; the non-thesis option 32 semester hours must be completed at University of Iowa. Courses must be completed on campus. Course work must be completed within three years following admission. The admission does not count toward the M.A. degree.

Foundations and Educational Psychology

Two of these (4.5 s.h.):
7F-102 History of American Education 3 s.h.
7C-117 Philosophy of Education 3 s.h.
7E-130 Educational Sociology 3 s.h.
7C-131 Educational Psychology 3 s.h.
7C-113 Introduction to Statistical Methods 3 s.h.
7C-113 Introduction to Educational Measurement 3 s.h.
7C-113 Introduction to Theories of Learning 3 s.h.
7C-120 Introduction to Instructional Design and Technology 3 s.h.
Research and Curriculum

Both of these (7.5 s.h.):
7P-304 Seminar: Current Issues and Research in Elementary Education 4 s.h.
TE259 Design and Organization of Curriculum 3 s.h.

Instructional Improvement 3 s.h.

Three of these (6-9 s.h.): 3 s.h.

TE264 Literature for Children II 3 s.h.

TE269 Supervision of Elementary School Language Arts 3 s.h.

TE364 Supervision of Elementary School Social Studies 3 s.h.

TE492 Advanced Techniques of Teaching Science in the Elementary School 3 s.h.

TE490 Supervision of Elementary School Mathematics 2-3 s.h.

TE444 Building Foundations for Reading: Preparatory and Primary 2-3 s.h.
or

TE445 Supervision of Intermediate Grade Reading 3 s.h.

TE547 Curriculum Development in Early Childhood (3-8 Years) 3-5 s.h.
or

TE548 Curriculum Development in Early Childhood (0-5 Years) 3 s.h.

TE590 Supervision of Student Teachers and Auxiliary Personnel 2-3 s.h.

Area of Specialization
A minimum of 10 semester hours of credit in courses chosen with consent of the advisor; may include appropriate courses listed above.

Electives
From 9 to 5 semester hours of credit in courses chosen with consent of the advisor.

Thesis
TE359 M.A. Thesis in Early Childhood and Elementary Education 2-3 s.h.

Comprehensive Examinations
The comprehensive examination consists of the following three examinations. One three-hour session is based on the general field of early childhood education and the remainder centers on the candidate's area of specialization.

M.A. in Developmental Reading

This degree program prepares graduate students for positions as reading specialists in kindergarten and grades 1-12. The course work required develops the skills, knowledge, and competencies needed for supervisory, curricular, and remedial tutoring positions in reading. The program also builds a background in reading for students who want to specialize further in the area and eventually to teach and/or conduct research 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 student for certification as a reading specialist.

Admission
Students must meet the general requirements of the Graduate College, have an undergraduate grade-point average of 3.0, 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 35 semester hours with a thesis, 35 without a thesis, is required. The following courses are required of all candidates:

35:173 Introduction to the Psychology of Reading 3 s.h.

35:174 Reading Clinic: Teaching Techniques 2-3 s.h.

35:172 Reading Clinic: Teaching Practicum 2-3 s.h.

35:444 Building Foundations for Reading: Preparatory and Primary 2-3 s.h.

TE490 Supervision of Intermediate Grade Reading 3 s.h.

Either of the following courses:

35:194 Methods: High School Reading 2-3 s.h.

35:153 Developing Reading Skills in Secondary Schools 2-3 s.h.

Either of the following courses:

35:195 Introduction to Educational Measurement 3 s.h.

35:174 Diagnostic and Prescriptive Approaches to Reading Instruction 1.5 s.h.

Either of the following courses:

35:254 Seminar: Secondary Reading 3 s.h.

35:247 Seminar: Research and Current Issues (Reading) 3 s.h.

One of the following courses:

35:116 Child Development 3 s.h.

35:131 Educational Psychology 3 s.h.

35:133 The Adolescent and Young Adult 3 s.h.

One of the following courses:

35:396 Curriculum Foundations 2-3 s.h.

35:395 Secondary School Curriculum 2-3 s.h.

35:396 Design and Organization of Curriculum 2-3 s.h.

35:299 Improving Instruction in the Secondary School 3 s.h.

One of the following courses:

35:258 Supervision of Students 2-3 s.h.

35:131 Supervision and Evaluation 3 s.h.

35:258 Reading Clinic: Supervision and Evaluation 3 s.h.

The thesis of research, one of the following courses:

35:359 M.A. Thesis in Early Childhood and Elementary Education 3 s.h.

35:293 Master's Degree Thesis 3 s.h.

35:359 M.A. Thesis in Educational Psychology, Measurement, or Statistics 3 s.h.

Students, in consultation with their advisor, may select the remaining hours as elective from areas such as curriculum, supervision, language arts, testing and evaluation, linguistics, or speech pathology.

Students take six hours of comprehensive examinations. One examination is based on reading courses. The other is based on coursework in supporting areas. With the approval of the advisor and the student's committee, a comprehensive project may be substituted for the written examination in the supporting areas.

M.S. in Elementary Science Education

The Master of Science program in elementary education prepares master's degree candidates to serve as teachers or departmental science specialists. The program may be taken with (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:

TE255 Science Education: Issues, History, and Resources 3 s.h.

TE256 Science Education: Teaching, Learning, and Curriculum 3 s.h.

TE252 Advanced Techniques in 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 (51290 Societal and Educational Applications of Earth Sciences, 59105 Societal and Educational Applications of Life Sciences, and 99150 Societal and Educational Applications of Physical Sciences) are an integral component of the science courses. Candidates who have used comparable or equivalent courses are expected to take two application courses. At least one corresponding science discipline course in a pre- or co-requisite is to be taken with the application courses. These courses, along with the science electives (up to 6 semester hours), are determined in consultation with the advisor. All candidates for the Master of Science degree must satisfy the requirements for a basic science endorsement as outlined in the October 1986 Iowa Curriculum 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
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 be eligible to teach art. Applicants must be accompanied by a representative portfolio of the candidate's work, consisting of eight full reproductions of art work and one example of a written work. The written work may be a paper previously written for a course or it may be an original paper. Retreats, field trips, and school art education programs are recommended for teacher certification. 
Certificate holders must pass a written examination for the degree. Candidates must meet Graduate College requirements for admission.

Requirements
M.A. candidates must complete the following:
- Studio and art history (18 h.), or 12 semester hours of studio art and 6 semester hours of art history, or 12 semester hours of art history and 6 semester hours of studio art;
- 4 hours of art education seminars (8 h.)
- The course 75B:E/At 100:6. Current issues in art education;
- Twelve semester hours to be specified after the student begins the program; and,
- Either a written or studio examination, if a thesis is an election, the student shall be taken at the School of Art and Art History.

Comprehensive examinations: a written and/or oral examination in art education; students may elect a three-hour examination or a one-hour research question.

Ph.D. in Art Education
The doctoral program is administered by the College of Education with the collaboration of the School of Art and Art History. Students may review the curriculum and apply for admission to the College of Education.

The program prepares college teachers and researchers in art education and supervisors of art in state departments of education and school systems. It also provides students with an opportunity to continue inquiry and creative work in art history and in studio art.

Admission
Students must meet the general requirements for doctoral students in the Graduate College and have an M.A. degree in art education from The University of Iowa, or an equivalent degree from an accredited degree-granting college or university. Application to the program must be accompanied by a representative portfolio of the candidate's work consisting of 12 slide reproductions of art work and two examples of written work. The written work may consist of papers previously written for a course or regular papers.

These should be submitted to the office of Art Education, 3rd North Hall, to the course director, and the graduate studies office of the Graduate College. Students must register for pertinent courses. One year of successful teaching experience in an elementary or secondary school is required prior to admission or completion of the doctoral program.

Requirements
Students must complete at least 60 semester hours of graduate work beyond the M.A., and with the advisor, including at least 15 semester hours in the School of Art and Art History, 15 semester hours in art education, 12 semester hours in a related area (e.g., aesthetics, anthropology, higher education, early childhood education, psychology, or sociology), and 15 semester hours in thesis and project courses. 75B:E/At 100:6 Introduction to Art Research in Art Education is also required. Students take comprehensive examinations, both oral and written. The written examination consists of an in-depth research paper assigned by the examining committee, to be completed within 34 months. An oral examination on the project is held (the written portion of the examination is intended to relate directly to the dissertation proposal.

Students must submit a complete written dissertation that constitutes a contribution to scholarship, and at least 12 semester hours of credit. The student is expected to attend a dissertation proposal and oral examination and defense committee; an oral examination on the dissertation in the Ph.D. final examination.

M.A. in Communication Studies
The program prepares teachers and supervisors of speech communication for the elementary and secondary level.

Admission
Candidates must have a grade-point average of at least 2.5. Candidates must have a grade point at least 2.5 in the area of communication and be recommended by the Chair of the Communication Studies Department. The program is designed to fulfill the requirements of the Department of Communication Studies.

Requirements
A minimum of 36 semester hours of approved graduate courses, at least one of which must be taken at The University of Iowa, including:
- Two graduate courses in communication education;
- Graduate course or a second division department.
- Two graduate courses in a third division department, totaling 36 hours.
- Introduction to research, 300- or 400-level courses, and other courses recommended by the advisor and committee.
Successful completion of a paper or project involving substantial scholarly investigation and writing, usually done in a seminar or independently under the direction of an adviser. The project or paper must be circulated to the committee with the comprehensive examination.

A comprehensive examination consisting of three two-hour sections 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 purpose of the program is to prepare 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 (15-16 s.h.)
75:186 Curriculum Foundations 2-3 s.h.
7P:117 Philosophies of Education (or an equivalent) 2 s.h.
7P:251 Educational Measurement and Evaluation 3 s.h.
or
7P:255 Construction and Use of Evaluation Instruments or 7P:159 Introduction to Educational Measurement 3 s.h.
7S:281 Junior High School and Middle School Curriculum 3 s.h.
7S:281 Secondary School Curriculum 3 s.h.
7P:300 Design and Organization of Curriculum 3 s.h.
Research, selected in consultation with the adviser, typically
7P:117 Introduction to Research Methods 3 s.h.
Cognates, in a subject field such as English 4-6 s.h.
Electives—selected in consultation with adviser 4-6 s.h.
Thesis, for students electing a thesis program 7S:350 Senior Thesis 2-4 s.h.
Total 18-32 s.h.

This program is administered by the College of Education. It 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 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 36 semester hours including other approved graduate course work is required.

Common Core (36-35 s.h.)
70:146 Curriculum Foundations 2-3 s.h.
7S:381 Junior High School and Middle School Curriculum 3 s.h.
7S:281 Secondary School Curriculum 3 s.h.
7P:300 Design and Organization of Curriculum 3 s.h.
7S:391 Problems of Curriculum Planning 3 s.h.
At least two advanced supervision courses in secondary or elementary school subject fields 6 s.h.
7P:257 Educational Measurement and Evaluation 3 s.h.
or
7P:255 Construction and Use of Evaluation Instruments or 7P:159 Introduction to Educational Measurement 3 s.h.
7P:300 Individual Instruction in Secondary Education (Practicum) 2-3 s.h.
A minimum of two research tools: typically, statistics, data processing, research design, or foreign language 5-12 s.h.
Electives, to be chosen in consultation with adviser recommended electives include:
7P:117 Introduction to Psychological Testing 2 s.h.
7P:117 Philosophies of Education 2 s.h.
7P:131 Educational Psychology 3 s.h.
7P:117 Introduction to Psychology of Reading 3 s.h.
7S:107 Administrative Leadership Theory 4 s.h.
7P:117 Introduction to Instructional Design and Technology 3 s.h.
7P:120 Exceptional Persons 3 s.h.
All doctoral candidates are required to complete at least 8 semester hours of graduate work in areas such as social psychology, political science, and educational psychology. 10-18 s.h.
Candidates take three three-hour comprehensive examinations in secondary school curriculum and two related fields in education or in a graduate field.

M.A. in English Education

The program prepares educators of English, department chairs, curriculum specialists for secondary schools, and teachers in English and related areas. Application should be made to the College of Education.

Admission

Students must meet the general requirements of the Graduate College, hold a secondary school teaching certificate, and have acquired a minimum of 20 semester hours in English. Preferred applicants will have a composite score of 1000 on the verbal and analytical sections of the Graduate Record Examination (GRE) General Test. Students must maintain a 3.00 grade-point average while enrolled in the program.

Requirements

Students specialize in English education and one or two other areas. The other area(s) may be a literary field, junior high school teaching, curriculum, reading, writing, speech and drama, journalism, language development, literature for children, and adolescents. Students and their advisers plan the program of study. Major semester hours must be earned in courses numbered 200 or above. Students must complete a comprehensive examination in English education and in their chosen area(s).

M.A.T. in English Education

The M.A.T. degree program is designed for students who have an undergraduate degree in English and a minor or professional education courses. Successful completion of the program enables students to receive certification as secondary school teachers of English.

Application

Applicants must have a bachelor's degree in English and a minimum undergraduate grade point average of 3.00. Since this is a certification program, candidates must not be currently employed. Applicants are expected to have no more than 5 semester hours in course work in professional education courses prior to admission.

Requirements

Students must complete a minimum of 45 semester hours. This includes at least 18 semester hours of graduate courses offered by the Department of English, please the adviser to supplement the undergraduate major, and the following professional education courses:
7P:117 Educational Psychology 3 s.h.
7P:130 History of Western Education 3 s.h.
7P:117 Philosophies of Education 3 s.h.
7P:190 Individual Projects in Laboratory Practice 3 s.h.
7P:130 Human Relations for the Classroom Teacher 3 s.h.
4P:230 Methods: High School Reading 3 s.h.
7P:195 Developing Reading Skills in the Secondary School 3 s.h.
Basic competency in microcomputing
75-115 Methods: English
3 s.h.
75-287 Modern and Student Teaching
2 s.h.
75-150 Observation and Laboratory Practice in the Secondary School
12 s.h.
A two-part comprehensive examination is required. One part covers methods, materials, and curriculum for high school English; the second part covers one-half the comprehensive examinations 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 teachers educators in English, specialists in literature for young wars, specialists in reading at secondary and junior college levels, specialists in writing at secondary and junior college levels, and coordinators/ supervisors of language and programs.

Admission
Students must meet the basic requirements of the Graduate College for admission to a doctoral program. In addition, they must have a secondary school teaching certificate, a grade-point average of 3.00, a minimum composite score of 1000 on the verbal and analytical portions of the Graduate Record Examination (GRE) General Test, and two years of successful teaching experience. Students admitted to the program are expected to provide evidence of the successful completion of a master's research paper for a course included in the first 15 residence hours. Students must maintain a 3.00 grade-point average while enrolled in the program. Candidacy is reviewed annually.

Requirements
A minimum of 30 semester hours is required. This includes 8-16 semester hours in the area of specialization—teaching of English—including four of the following courses:
75-280 Supervision of Elementary School English Language Arts (Language Arts Education) 3 s.h.
75-300 Seminar: Research and Current Issues (Sep 30) err.
50-335 MA Seminar: English Education 3 s.h.
50-415 PhD Seminar: English Education 2-4 s.h. (required for two or more registrations)
Cognates and electives (50-60 s.h.) may include reading, school curriculum, literature for young people, literature of a particular period or genre, educational psychology, special education, educational media, writing, linguistics, literacy criticism, educational theory, and rationale for, speech and dramatic arts. Students and their advisor may select two areas of specialization in addition to the teaching of English. Areas of specialization typically consist of a minimum of 9 semester hours of work in an area.
Students must have faculty in a research tool that will help them achieve professional objectives. Choice of research tool is agreed upon by students and their advisors.
Students must take comprehensive examinations in three areas: the teaching of English, a foreign language, and an elective. The minimal requirements for eligibility to write comprehensive area examinations vary, the general requirement is three courses in an area.
Students write a dissertation (typically 12 semester hours).

M.A.T. in Foreign Language Education
The M.A.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 certification.

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 letter grades from graduate courses in a foreign language department and the following professional education courses:
75-30 Introduction to Teaching Foreign Languages (credit not applicable to M.A.T. degree) 2 s.h.
75-113 Educational Psychology 3 s.h.
75-117 History of Western Civilization I 2 s.h.
75-118 Introduction to Teaching Foreign Language (credit not applicable to M.A.T. degree) 2 s.h.
75-150 Reading and Laboratory Practice in the Secondary School 12 s.h.
75-147 Seminar: Curriculum and Student Teaching 1 s.h.
75-140 Human Relations for the Classroom Teacher 3 s.h.
A comprehensive examination covering the candidate's knowledge and proficiency in the language, literary culture, and foreign language education.

M.A.T. in Home Economics Education
The Master of Arts program is administered by the Department of Home Economics. Admission to the Master of Arts in Teaching program is through the College of Education. Both programs are described under "Home Economics" in the College of Liberal Arts section of the Catalog.

Both programs will be closed after May 1992. Only students who can complete their home economics courses by that date may enroll in the program.

M.A. in Mathematics Education
The program provides students who advanced specialization in mathematics and education as a baccalaureate for teaching at the secondary level.

Admission
Candidates must meet the admission requirements of the Graduate College and, except in unusual cases, hold a professional certificate in secondary school mathematics. A combined score of 1000 on the verbal and quantitative sections of the Graduate Record Examination (GRE) General Test is preferred.

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 75-225 Current Issues in Mathematics Education (5-3-5) s.h. for remaining three courses are to be selected from the following:
75-209 Workshop in Secondary School Mathematics 1-3 s.h.
75-211 Computer-Based Teaching of Secondary School Mathematics 2-3 s.h.
75-223 Teaching of Geometry 2-3 s.h.
75-236 Teaching of Algebra 2-3 s.h.
75-30 Seminar: Mathematics Education 2-3 s.h.
A minimum of two courses selected 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, educational evaluation, secondary school curriculum, secondary school administration, and special education, courses are to be selected in consultation with a faculty member from the cognate area.
Sufficient electives in mathematics and education selected with the approval of the advisor to complete 32 semester hours of credit.

Three two-hour comprehensive examinations, one in secondary mathematics education, one in mathematics, and the third in the cognate area.

M.S. in Mathematics with Education Option
The program prepares 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 Education. Applications 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
GMM-110 Introduction to Analysis I 3 s.h.
GMM-116 Introduction to Analysis II 3 s.h.
GMM-120 Abstract Algebra I 3 s.h.
GMM-121 Abstract Algebra II 3 s.h.
GMM-132 General Topology 3 s.h.

Applied Mathematics Core
GMM-142 Intermediate Differential Equations 3 s.h.
GMM-144 Introduction to Partial Differential Equations 2-3 s.h.
GMM-170 Numerical Analysis
Linear Algebra 3 s.h.
GMM-171 Numerical Analysis
Differential Equations and Linear Algebra 3 s.h.
GMM-174 Optimization Techniques 3 s.h.

Two courses in mathematics education:

- Comprehensive examination of six hours over the required courses in either pure mathematics or applied mathematics, and education courses that the candidate's knowledge of mathematics and education includes specific courses relating to teaching secondary school mathematics.

Ph.D. in Mathematics Education
The program for a Ph.D. in mathematics education prepares supervisors, teacher education personnel, community college personnel, and mathematicians in mathematics education administered by the College of Education.

The 72 semester hours include work toward the master's degree. Credit earned more than two years previously must be updated. Minimum course requirements are for exceptional students. Typically, the program consists of 36-38 semester hours.

Admission
Applicants must have an undergraduate major in mathematics or the equivalent; a master's degree in mathematics, mathematics education, or education; a 3.00 grade-point average or above; and, except in unusual circumstances, a current teaching 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 Mathematical Sciences (mathematics, statistics, and computer science), including the master's level core requirements for pure or applied mathematics described under "Master of Science in Mathematics with Education Option" in this section of the Catalog. Course work must be chosen in consultation with the advisor.

Additional courses must be taken in Mathematics Education. Students who have completed four mathematics courses at another institution must complete a minimum of 8 additional semester hours of course work in mathematics at The University of Iowa under the advisement of the advisor.

Specific requirements include at least five courses in mathematics education, which must include 75-335 Current Issues in Mathematics Education, and a minimum of two graduate courses in the area of specialization.

- Mathematics Education: Two courses in mathematics education;
- Comprehensive examination of six hours over the required courses in either pure mathematics or applied mathematics, and education courses that the candidate's knowledge of mathematics and education includes specific courses relating to teaching secondary school mathematics.

M.A. in Music Education
The program provides students with deeper insights into music, the theory and practice of music education, and the role of music in the school curriculum. The degree program may be taken with thesis (30-semester-hour minimum) or without (30-semester-hour minimum).

Admission
Applicants must be a certified music teacher or be the process of completing certification requirements. An undergraduate grade-point average of 2.50, excluding grades in ensemble, is required for admission to this program.

The program is administered by the School of Music at the University of Iowa.

Requirements
- General:
  - 25-301 Introduction to Graduate Study in Music 2 s.h.
- Theory:
  - 25-240 Introduction to Contemporary Analysis and Theory 2 s.h.
  - 25-345 Elective 3 s.h.

Specific course requirements in the theory area are determined by course on the advisory examinations.

History and Literature:
- 25-300 Advanced History and Literature of Music I 3 s.h.
  - 25-302 Advanced History and Literature of Music II 3 s.h.

Specific course requirements in the history and theory area are determined by course on the advisory examinations. Students must complete 25-301 and/or 25-302 and courses in music history to be eligible for the "School of Music" in the College of Liberal Arts section of the Catalog.

- 15-228 Curriculum Development in Music Education 3 s.h.
- 75-290 Foundations of Music Education 2 s.h.
- 25-240 Introduction to Contemporary Analysis and Theory 2 s.h.

Electives to be selected in consultation with the advisor (may include thesis) 6 s.h.

Ensemble:
- 2 s.h.

Elective courses are required.

The amount of elective credit applicable toward the M.A. degree depends on transfer course credits. Students are responsible for earning credits in music education electives courses.

Master's Exam
Candidates must take a final written master's degree examination (12 semester hours) during the semester in which they expect to complete the degree. Areas of concentration covered in the examinations include music education, music theory, and music history and literature.
Ph.D. In Music Education

The program prepares students for teaching, research, or administration in the following areas of positions:

■ College teachers of music education, classes and activities; band, choir, and orchestra directors; and administrators of music departments and schools of music;

■ Public school administrators, curriculum directors, music and drama supervisors, research and curriculum consultants, and directors of city or district school music programs.

Admission

For admission to the Ph.D. program in music education, students must have at least a 3.25 grade-point average on graduate work (excluding grades in ensemble), have a score above the fifth percentile on the verbal ability section of the Graduate Record Examination (GRE) General Test, hold or be qualified for a valid teaching certificate, and have a minimum of two years of successful music teaching experience.

In addition, the music education faculty makes an appraisal of 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. degree is granted on the basis of the achievement, as determined by course grades and examinations, to the comprehensive final examinations, and on the accumulation of semester hours of credit. The course requirements and semester hours below are minimum requirements for the typical student in preparation for the comprehensive and final examinations.

General (11 s.h.)
25:21 Introduction to Graduate Study in Music 3 s.h.
25:250 Musical Acoustics 3 s.h.
25:240 Introduction to Contemporary Analysis and Theory 3 s.h.
Elective (25:15-15:30) 3 s.h.
Music History and Literature (15-15 s.h.)
25:201 Advanced History and Literature of Music 3 s.h.
25:202 Advanced History and Literature of Music 3 s.h.
Elective (25:203-319) 3 s.h.
25:205 Advanced Research in Music 2 s.h.
Electives 2 s.h.
Music Education (23 s.h.)
25:144 Psychology of Music 2 s.h.
25:149 Behavioral Research in Music 2 s.h.
25:204 Curriculum Development in Music Education 2 s.h.
25:246 Foundations of Music Education 2 s.h.
25:445 Social and Psychological Factors in Music Education 3 s.h.
25:144 Measurement and Evaluation in Music Education 3 s.h.
25:342 Supervision and Administration in Music Education 3 s.h.
25:379 Experimental Research in Music Education (8 s.h.)
25:14 Introduction to Statistical Methods 3 s.h.
25:342 Selected Applications of Statistical Techniques 2 s.h.

M.A. in Music Education

The Master of Arts and Doctor of Philosophy programs in music education are described in the College of Liberal Arts section of the Catalog.

M.A.T. in Science Education

The M.A.T. degree program is designed for students who have an undergraduate degree in one of the sciences and wish or no postgraduate 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 certificate.

The program is administered by the College of Education.

Admission

Applicants must have a bachelor’s degree with a major or the equivalent in one of the sciences and a minimum undergraduate grade-point average of 3.00.

Requirements

Professional Education Sequence

Component 1
75:100 Issues in Education 2 s.h.
Component 2
75:180 Human Relations for the Classroom Teacher 3 s.h.
Component 3
75:131 Educational Psychology 3 s.h.
Component 4
75:151 Science Methods I: Elementary School Seminar and Practicum 3 s.h.
Component 5
75:152 Science Methods II: Resource, Research, Teaching Strategies, and Curriculum Development in the K-12 Classroom 3 s.h.
Component 6
75:153 Science Methods III: Middle/High School 3 s.h.
75:180 Elementary School Special Area Student Teaching 3 s.h.
Component 7
75:187 Seminar: Curriculum and Student Teaching 3 s.h.
75:189 Individual Projects in Laboratory Science 3 s.h.
75:191 Observation and Laboratory Practice in the Secondary School 3 s.h.
75:192 Observation and Laboratory Practice in the Secondary School 6 s.h.
Consultation 4, 5, 6, and 7 must be taken in sequence and only once 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.
97:102 Sociological and Educational Applications of Earth Sciences and Environmental Sciences or 97:102 Sociological and Educational Applications of Biological Sciences or 97:106 Sociological and Educational Applications of Physical Sciences or 97:116 Science electives 11 s.h.

M.S. in Science Education

This degree is designed for students who wish to pursue advanced science education specialization in teaching (kindergarten through college) or in related fields such as medical education, museum programs, and
Requirements
A minimum of 60 semester hours of course work, which must include the courses listed below; courses taken toward the requirements for a master's degree may be applied to this total.

Science Education (24 s.h.):
76/78/256 Science Education: Issues, History, and Rationale 3 s.h.
76/78/256 Science Education and the Nature of Science 3 s.h.
76/78/257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
76/78/258 Science Education: Research Models and Conceptual Schemes 3 s.h.
*75/355 Ph.D. Internship 2-3 s.h.
*75/356 Science Education Internship: Teaching, Supervision, and Administration 1-3 s.h.
*76/357 Science Education Internship: Teaching and Learning Strategies 1-3 s.h.
7/350 Seminar: Science Education 0-2 s.h.
Total 20 s.h.

Science Specialization (24 s.h.):
Courses that supplement undergraduate preparation, chosen from regular graduate offerings in biochemistry, botany, chemistry, environmental studies, geology, microbiology, physics, radiation biology, and zoology, which should include a concentration of 15 semester hours in at least one field of science.

Corporative Studies (5-6 s.h.): Science and applied science courses selected from an area other than the specialization.

Ed.S. in Science Education
The Ed.S. in Science Education is an interdisciplinary degree given 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 and college and small four-year liberal arts colleges.

Admission
Candidates must meet the minimum admission standards of the Graduate College. Usually applicants must have completed a master's degree in one of the sciences or science education and have earned a 3.0 grade-point average on all graduate work taken prior to making the application.

Requirements
A minimum of 112 semester hours of course work, which must include the courses listed below; courses taken toward a master's degree count toward this total.

Science Education Issues, History, and Rationale 3 s.h.
76/78/256 Science Education and the Nature of Science 3 s.h.
76/78/257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
76/78/258 Science Education: Research Models and Conceptual Schemes 3 s.h.
*75/355 Ph.D. Internship 2-3 s.h.
*75/356 Science Education Internship: Teaching, Supervision, and Administration 1-3 s.h.
*76/357 Science Education Internship: Teaching and Learning Strategies 1-3 s.h.
7/350 Seminar: Science Education 0-2 s.h.
Total 26 s.h.

Ph.D. in Science Education
This degree is appropriate for qualified candidates who aspire to college and university positions as science educators, major supervisory posts in national, state, and local systems; teaching positions in the sciences at small liberal arts colleges; positions as instructors of general education science courses and areas at major colleges; positions as research directors in science education; and positions in medical education.

The program is administered by the College of Education.
M.A. in Social Studies Education

The program provides an opportunity for interdisciplinary work 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 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 subject matter area. Program B is for individuals who have their bachelor's degree in history or social sciences and wish to obtain a teaching 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 cumulative grade-point average of 3.00; a 3.00 grade-point average in history and/or other social science courses; preferred composite Graduate Record Examination (GRE) General Test score of 1000 on the verbal and quantitative batteries; and two letters of recommendation. Evidence of writing ability in the form of a complete major paper or essay also is required. Typically, applicants to Program A are expected to build a secondary teaching certificate. After declaring a social studies education major, they must attain a cumulative grade-point average of at least a 3.00 grade-point average.

Program A Requirements

Program A students must complete 18 semester hours distributed among history, social sciences, or related areas, with a minimum of 10 semester hours in each of three fields. Ninety percent of the 18 semester hours must consist of graduate courses numbered 200 or above divided among the fields selected for concentration.

If the thesis option is selected, the student completes a research or investigative project in history or social sciences, or in related area, in which case the thesis director is a member of the appropriate department. An investigative project in social studies education, in which case the thesis director is a faculty member in the College of Education.

A two-hour written examination is required in each of the three fields selected for concentration. An oral examination follows the written examination, conducted by the candidate's committee as a whole.

Program B Requirements

Program B students must complete a total of 24-26 semester hours, totaling 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 process of completing the bachelor's degree. In such cases, the number of hours is reduced accordingly, but in no case is the number of hours in the master's degree program to be less than 39. In all instances, the student must take appropriate work for meeting all Iowa Department of Education requirements for teacher certification.

Professional Education Courses:
75:100 Issues in Education 2 s.h.
75:131 Educational Psychology 3 s.h.
75:188 Human Relations for the Classroom Teacher 3 s.h.
75:210 Introduction to Instructional Design and Technology 3 s.h.
75:170 Methods of Social Studies
75:117 Philosophies of Education of
75:130 Educational Sociology 3 s.h.
75:277 Seminar: Social Studies Education 3 s.h.
75:215 Observation and Laboratory Practice in the Secondary School 6 s.h.
75:235 Observation and Laboratory Practice in the Secondary School 6 s.h.
Candidates also are required to register for a practicum in a public school.

Subject Area Specialization Courses: Fifteen semester hours of course work in one or two history or other social science fields to be selected in consultation with the advisor.

Comprehensive Examination

The comprehensive examination consists of two parts: a two-hour examination in the student's specialization; and a two-hour examination in general professional education, and a two-hour examination in social studies education.

Ph.D. in Social Studies Education

The program is administered by the College of Education. It prepares secondary school 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 or the social sciences, and 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 grade-point average of 3.00 or above. A minimum Graduate Record Examination (GRE) verbal and quantitative score of 1200 (composite of verbal and quantitative) is preferred. Seminar papers or field research are required as equivalent if no thesis was written in the M.A. An interview is required prior to regular admission.

Requirements

Students must complete a minimum of 90 semester hours of coursework and dissertation credit beyond the bachelor's degree, not including tool requirements. The 90 semester hours must be distributed among history, social sciences or related areas, and professional education, depending on the background and goals of the candidate.

Seminars and courses numbered 200 or above are required in each of the areas of study constituting the major. A minimum of 2.5 semester hours of 98:101, 98:202 or 75:253 must be completed with one of the faculty members in social studies education, unless other course work with these faculty members has been completed. Tool requirements are tailored to the individual program and may consist of foreign languages or other requirements. Usually, statistics plus research techniques in one or more of the chosen fields or in a language is required.

Comprehensive Examinations

Students take three three-hour examinations, one in each of the areas of study. Depending on the distribution of work taken, the hours of written examination may be reassigned. The Ph.D. examination committee consists of a minimum of the faculty member from the liberal arts disciplines and one from social studies education. The remaining members (to be appointed by the faculty) are selected by the graduate college. The examination committee must consult with the advisor, and if required by the graduate college) are selected with regard to the nature of the student's Ph.D. program and distribution of course work. An oral examination is conducted by the committee as a whole following the written examination. Alternatives to the traditional written comprehensive examination may be considered by the candidate's committee.

Dissertation

A dissertation is required on a research problem in history or the social sciences, or in related area, in which case the dissertation director will be a faculty member of the appropriate department, or on a research problem in social studies education, in which case the dissertation director will be a faculty member of the College of Education. The candidate must present a prospectus of the proposed research to the dissertation committee prior to undertaking the study. Upon completion, an oral examination is conducted in defense of the dissertation.

Continuing requirements for maintaining candidacy are a grade-point average of 3.00 plus annual renewal.

Special Education

The division offers special education programs in these primary areas: mental retardation; learning disabilities; behavior disorders; early childhood special education; and moderate, severe, and
profound mental disabilities. These programs are designed to prepare graduates for positions in public schools, local and state education agencies, clinical settings, and institutions of higher education; programs of approved by the Iowa Department of Education (approval for one preceding). Programs leading to special education certification are not available to undergraduates. Undergraduates who wish to pursue a career in special education are encouraged to contact the Division of Curriculum and Instruction for advisement.

**Admission**

Admission requirements include:
- Completed graduate 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 or teacher certification (series depending on program).

An interview may be requested. In addition to the above, the following represent minimum requirements.

**Master of Arts:** An undergraduate grade-point average of 2.75 (or 3.00 on at least 12 semester hours of graduate course work) is required and a minimum verbal and quantitative GRE score of 100.

**Doctor of Philosophy:** An undergraduate grade-point average of 3.00 or a graduate grade-point average of 3.00, or a master's degree has been conferred, and a combined verbal and quantitative GRE score of 100. For students without an M.A. thesis, an equivalent project must be completed.

Final admission decisions are made by the division admission committee and are based on a composite analysis of the candidate's likelihood to succeed in the division. This analysis may include consideration of available resources, comparative standing, and specific program requirements (particularly primary to 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 purpose of the graduate programs in special education is to prepare persons to deliver appropriate levels of service to students with disabilities at the preschool, elementary, and secondary levels in either public or private settings. Special education certification requires that students already be eligible for either elementary or secondary certification. Students who do not seek certification may be admitted selectively to the M.A. program. The program requires a minimum of 38 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 100;
- Three current letters of recommendation;
- Evidence of experience in regular or special education (see each program for specific requirements); and
- An undergraduate grade-point average of at least 2.75 (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 include:
- 74130 Exceptional Persons 3 s.h.
- 74134 Parent/Teacher Communication 3 s.h.
- 74106 Practicum with Exceptional Persons 3 s.h.
- 74136 Assessment of Learning Difficulties 1.5 s.h.

**Program Specializations**

**Learning Disabilities**

A core of courses in learning disabilities (LD) is required for all students. It includes:
- 74113 Introduction to Learning Disabilities 3 s.h.
- 74107 Supervised Teaching with Learning Disability 5 s.h.
- 74109 Seminar: Graduate Supervised Teaching 1 s.h.

Students seeking an elementary (K-6) LD teaching certificate must obtain (or already have) a regular elementary teaching certificate. The following courses are also required:
- 74171 Reading Clinic: Teaching Techniques 2.5 s.h.
- 74172 Reading Clinic: Teaching Practicum 2.5 s.h.
- 74173 Teaching Elementary School Mathematics 2.5 s.h.
- 74101 Methods: Children with Learning Disabilities 3 s.h.

Total 36 s.h.

Students seeking a secondary (7-12) LD teaching certificate must obtain (or already have) a regular elementary teaching certificate. The following courses are also required:
- 74121 Career Education and Transition 3 s.h.
- 74173 Teaching Elementary School Mathematics 3 s.h.

**154 Methods: High School Reading** 2.5 s.h.

**150 Developing Reading Skills in the Secondary Schools** 2.5 s.h.

**250 Methods: Adolescents with Learning Disabilities**
- Total 3 s.h.
- 12.5 s.h.

The remainder of the required 38 semester hours are elective courses chosen by the student and the academic advisor.

**Behavior Disorders**

A core of courses in behavior disorders (B/D) is required for all students. It includes:
- 74102 Introduction to Behavioral Disorders 3 s.h.
- 74120 Characteristics and Programs: Persons with Severe Behavioral Disorders 2 s.h.
- 74111 Interventions: Persons with Severe Behavioral Disorders 2 s.h.
- 74120 Behavioral Principles 3 s.h.
- 74106 Supervised Teaching with Behavior Disorders 5 s.h.
- 74109 Seminar: Graduate Supervised Teaching 1 s.h.

Students seeking an elementary (K-6) BD teaching certificate must obtain (or already have) a regular elementary teaching certificate. The following courses are also required:
- 74102 Methods: Children with Behavioral Disabilities 3 s.h.
- Total 3 s.h.

Students seeking a secondary (7-12) BD teaching certificate must obtain (or already have) a regular secondary teaching certificate. The following courses are also required:
- 74104 Methods: Adolescents with Behavioral Disabilities 3 s.h.
- 74112 Career Education and Transition 3 s.h.
- Total 3 s.h.

Students completing an M.A. degree also must complete the following:
- 74106 Practicum with Exceptional Persons (either autism or severe behavior disorders) 2 s.h.
- 74121 Characteristics and Programs: Persons with Autism 2 s.h.
- 74111 Interventions: Persons with Autism 2 s.h.
- 74109 Seminar: Behavior Assessment and Evaluation 3 s.h.

**Mental Retardation—Mild/Moderate**

A core of courses in mental retardation (MR) is required for all students. It includes:
- 74125 Mental Retardation 3 s.h.
- 74143 Behavioral Principles 3 s.h.
- 74102 Methods: Moderate/Severe/Profound 3 s.h.
- 74109 Seminar: Graduate Supervised Teaching 1 s.h.
- 74120 Supervised Teaching with Mild Mentally Retarded 3 s.h.
TU 244 Supervised Teaching; Moderate Mentally Retarded
3 s.h.

TU 214 Methods: Children with Mild Mental Retardation
3 s.h.
Total
28-33 s.h.

TU 232 The Culturally Different in Diverse Settings
3 s.h.
TU 251 Methods: Adolescents with Mild Mental Retardation
3 s.h.
TU 222 Teaching Elementary School Mathematics
2-3 s.h.
TU 394 Methods: High School Reading
2-3 s.h.
TU 385 Developing Reading Skills in the Secondary School
2-3 s.h.
TU 312 Career Education and Transition
3 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 certification in the area of Elementary Mental Retardation—Mild/Moderate can meet the requirements for certification in the area of Physically Handicapped (K-6) by completing the following courses in 3-15 Introduction to Speech and Hearing Processes and Disorders
3 s.h.
TU 313 Methods: Children with Physical Disabilities
3 s.h.
TU 319 Orientation to the Rehabilitation of the Physically Handicapped Child
3 s.h.
TU 191 Supervised Teaching with Physically Handicapped
5 s.h.

Early Childhood Special Education
Prior teaching certification is desirable but not required for admission to the early childhood special education certification program. Applicants who do not already have certification must complete an additional 11 semester-hours of professional education course work as follows:
TE 200 Introduction to Early Childhood Education
3 s.h.
TE 355 Educational Psychology and Measurement
3 s.h.
TE 380 Human Relations for the Classroom Teacher
3 s.h.
TE 291 Audiovisual Equipment for Instruction
1 s.h.
TU 202 Introduction to Microcomputer 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:
TU 117 Interdisciplinary Programming for Disabled
3 s.h.
TU 213 Assessment of Young Children with Disabilities
2 s.h.
TU 272 Development of Young Children with Disabilities
2 s.h.
TU 175 Teaching Early Childhood Special Education Ages 0-3
3 s.h.
TU 274 Teaching Early Childhood Special Education Ages 3-6
3 s.h.
TU 255 Families of Young Children with Disabilities
3 s.h.
TU 312 Language Development
3 s.h.
EM 499 Remedial Communication
1 s.h.
TU 276 Supervised Teaching: Early Childhood Special Education I
3 s.h.
(1/2 semester, 1/2 time in a center-based program)
TU 277 Supervised Teaching: Early Childhood Special Education II
3 s.h.
(1/2 semester, 1/2 time in a home-based program)
TU 318 Seminar: Early Childhood Special Education
1 s.h.
Cardiopulmonary resuscitation course
3 s.h.
Total:
27 s.h.
The remainder of the required 38 semester hours are elective courses chosen by the student and the academic advisor.

Moderate/Severe/Profound Mental Disabilities
Prior teaching certification is desirable but not required for admission to the moderate/severe/profound mental disabilities certification program. Applicants who do not already have certification must complete an 11 semester-hour professional education core as follows:
TE 100 Introduction: Elementary and Early Childhood Teaching
3 s.h.
TU 255 Educational Psychology and Measurement
3 s.h.
TU 189 Human Relations for the Classroom Teacher
3 s.h.
TU 91 Audiovisual Equipment for Instruction
1 s.h.
TU 202 Introduction to Microcomputer 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:
TU 117 Interdisciplinary Programming for Disabled
3 s.h.
TU 240 Behavioral Principles
2 s.h.
TU 243 Methods: Persons with Moderate/Severe/Profound Mental Disabilities I
3 s.h.
TU 243 Methods: Persons with Moderate/Severe/Profound Mental Disabilities II
3 s.h.
TU 243 Issues: Teaching Moderate/Severe/Profound
3 s.h.
TU 244 Supervised Teaching: Moderate Mentally Retarded
1 s.h. (1/2 semester, 1/2 time)
TU 245 Supervised Teaching: Severe/Profound
3 s.h. (1/2 semester, 1/2 time)
TU 246 Seminar: Teaching Moderate/Severe/Profound
1 s.h.
Cardiopulmonary resuscitation course
3 s.h.
Total:
38-42 s.h.
The remainder of the required 38 semester hours are elective courses chosen by the student and the academic advisor.

Multicategorical Resource—Mildly Handicapped
A core of courses is required for all students. It includes:
TU 117 Interdisciplinary Programming for Disabled
3 s.h.
TU 222 Supervised Teaching in Resource Program
5 s.h.
TU 290 Seminar: Graduate Supervised Teaching
1 s.h.
At least two of the following:
TU 131 Introduction to Learning Disabilities
3 s.h.
TU 132 Introduction to Behavioral Disorders
3 s.h.
TU 330 Mental Retardation
3 s.h.
Students seeking an elementary (K-6) multicategorical resource teaching certificate must obtain (or already have) a regular secondary teaching certificate. The following courses also are required:
TU 216 Methods: Elementary Resource Teaching
3 s.h.
TE 187 Reading Clinic Teaching Techniques
2-3 s.h.
TE 312 Reading Clinic Teaching Practicum
2-3 s.h.
TU 222 Teaching Elementary School Mathematics
2-3 s.h.
TU 212 Teaching Children with Behavioral Disorders
3 s.h.
Total:
38-42 s.h.
Students seeking a secondary (7-12) multicategorical resource teaching certificate must obtain (or already have) a regular secondary teaching certificate. The following courses also are required:
TU 131 Career Education and Transition
3 s.h.
TU 132 Teaching Elementary School Mathematics
2-3 s.h.
TU 394 Methods: High School Reading
3 s.h.
TU 385 Developing Reading Skills in the Secondary School
2-3 s.h.
TU 204 Methods: Adolescents with Behavioral Disorders
3 s.h.
TU 217 Methods: Secondary Resource Teaching
3 s.h.
Total:
38-42 s.h.
Multicategorical Special Class with Interventions
Requirements include the core courses from two of the following programs: learning disabilities, behavior disorders, or mental retardation.
For students seeking elementary (K-6) approval, the courses required at the elementary level in the two programs shown above also must be completed.
For students seeking secondary (7-12) approval, the course required at the secondary level in the two programs chosen above also must be completed.

Specialist in Education

The program provides advanced graduate training in the field of special education. Included are individuals in consultation, supervisory work, and work-study coordination 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 certification in special education; and a minimum of one year of full-time teaching experience prior to admission to the program.

The program requires a minimum of 40 semester hours. The flexible plan of study is designed by the student and adviser. Degree requirements include written Comprehensive examinations and a research paper (70,215 Educational Specialist Research, 4 semester hours).

Ed.S. in Special Education Administration

The Ed.S. in Special Education Administration is offered jointly with the Division of Educational Administration. Its primary objective is to provide 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 principals and assistant directors. Successful completion of the program qualifies students for certification in various areas of special education (State of Iowa Endorsement 239) and certification in general school administration (State of Iowa Endorsement 117).

The program requires a minimum of 40 semester hours of credit. Admission to the program is limited to available seats. Five to eight new students are admitted each year. Admission requirements include a master's degree and certification in some area of teaching exceptional children, and administrative experience as 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, supervisory, 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 admissions committee gives preference to applicants who have had several years of experience.

The program requires a minimum of 90 semester hours, a plan of study is flexible and may depend on the student's background and educational goals. In general, students are expected to possess a general background in all fields of special education and one or two areas of specialization. The actual course of study is developed by the student and the academic advisor. Students are required to write comprehensive examinations and complete a doctoral dissertation (70,403 Ph.D. Thesis in Special Education, 30 semester hours minimum).

Facilities

Special facilities available to students in special education include the University Hospital, for mentally and physically disabled, and the University Psychiatric Hospital/Child Psychiatry Program, for children and youth with behavioral disorders.

Courses

Early Childhood and Elementary Education

TE 110 Human Growth and Development

Theoretical bases and applications of psychology to the study of child development. Students will study psychology, biology, and social development of the human species from conception to young adulthood. The course is intended for students in the field of childhood education and those interested in working with young children, ages birth to eight. Three credits. 2.5 hours per week.

TE 112 Methods and Materials in Early Childhood Education

Practical considerations in planning for early childhood education. Open only to early childhood education majors. Different teaching techniques. Prerequisites: TE 110 or TE 197. 2.5 hours per week.

TE 114 Planning Field Study

Development of goals and basic research skills. Consent of instructor required. Same as TE 214.

TE 120 Pre-Professional Practicum, Elementary Education

Students spend six hours per week working with children in an elementary school. Assignments are made to schools where the student's area of interest is most similar to the special education program. Consent of instructor required. 2 hours.

TE 123 Pre-Professional Practicum

Preschool

Students spend one hour per week working with children in the preschool setting. Assignments are made to preschools in the area of interest. 2 hours.

TE 125 Pre-Professional Practicum, Kindergarten and Early Elementary

Students spend two full days per week for eight weeks working with children in the kindergarten and early elementary grades in a K-2 setting. Assignments are made to schools where the student's area of interest is most similar to the special education program. Consent of instructor required. 2 hours.

TE 126 Introduction to Elementary and Early Childhood Teaching

Overview of elementary and early childhood education, history and philosophy, general education curriculum, educational and legal concerns, and special education. Prerequisite: admission to Senior I. 4 hours.

TE 127 Introduction to Education

Basic concepts to the field of education. Administrative organization, internal structure, and curricular organization. Introduction to educational research. Consent of instructor required. Same as TE 101. 3 hours.

TE 128 Administration in Physical Education and Athletics (6 hours)

Administration in Physical Education and Athletics. Different teaching techniques. Prerequisites: TE 127 and TE 101. 6 hours.

TE 129 Research Methods in Speech and Hearing

Basic research methods used in speech and hearing. Consent of instructor required. 2.5 hours.

TE 130 Methods and Materials: Music for the Classroom Teacher

Development of music skills, techniques, and knowledge of methods and materials for teaching music to young children. Prerequisites: elementary education majors. Consent of instructor required. 2.5 hours.

TE 131 Methods and Materials: Art for the Classroom Teacher

Practices, techniques, and processes for art activities with elementary and early childhood education majors. Consent of instructor required. Consent of instructor required. 2.5 hours.

TE 132 Literature for Children (4 hours)


TE 135 Teaching Art with Computers

Art programs for students with special needs. Students will learn to use different art programs for students with special needs. Computer consent required. 2 hours.

TE 136 Methods and Materials of Teaching Children's Songs

Creating a positive learning environment for the music classroom. Different teaching techniques. Consent of instructor required. 2 hours.

TE 137 Literacy and Storytelling for Children

Nurturing the student's interest in reading, developmental benefits, and techniques for effective teaching. Different teaching techniques. Consent of instructor required. 2 hours.

TE 138 Environmental Education

Teaching techniques, teaching methods, and teaching materials in the field of environmental education. Different teaching techniques. Consent of instructor required. 2 hours.

TE 139 Fundamentals and Materials in Physical Education

Teaching elementary physical education for the elementary classroom. Consent of instructor required. 2.5 hours.

TE 140 Methods and Materials: Fine Arts Education for the Elementary Teacher

Methods and materials to incorporate fine art into the curriculum. Consent of instructor required. 2 hours.

TE 141 Health Education for the Elementary Teacher

Practices, techniques, and processes for health education with elementary and early childhood education majors. Consent of instructor required. Consent of instructor required. 2 hours.

TE 142 Physical Education Curriculum Issues and Trends

Strategies for the PK-12 setting. Same as TE 102. 3 hours.

TE 143 Physical Education for Special Children

Concepts and skills necessary for the teaching of children with handicapping conditions in early childhood classrooms. Prerequisite: TE 101 or consent of instructor.
75:112 Introduction to Sociology 2 s.h.
Introduction to the study of society, including social structure, social interaction, cultural forces, socialization, social inequality, social change, and social institutions.
Same as 31:105, 106, 107, 108.
75:113 Methods Secondary School Teaching 3 s.h.
Methods and techniques for teaching middle school, junior high school, and high school students. Emphasis on the integration of theory and practice. Students enrolled in this course must have completed 31:106 and 107. 108.
75:114 Methods Foreign Language 3 s.h.
Theory, philosophy, and methods for teaching foreign language classes in elementary schools. Focus on pedagogical techniques, approaches to language learning, and the role of technology in the foreign language classroom.
75:115 Methods Elementary School Physical Education 2 s.h.
Methods, techniques, and strategies for teaching physical education to young children in the elementary school setting, focusing on motor skills, health, and wellness.
75:116 Language Laboratory Procedures 1 s.h.
Use of language laboratory equipment and materials.
75:117 Methods Home Economics 3 s.h.
Principles, operations, and methods in home economics education.
75:118 Materials and Methods in Family Life Education 3 s.h.
Principles, theories, and methods of counseling, family life education, and parent education, including the role of technology and media.
75:119 Workshops for Secondary School Counselors 3 s.h.
Teaching counseling, group counseling, and psychological assessment techniques to secondary school counselors. Focus on the integration of theory and practice.
75:120 Curriculum and Methodology 2 s.h.
Theory and practice of teaching, with an emphasis on the development of lesson plans, curriculum design, and the integration of technology in the classroom.
75:121 Introduction to Computer Programming 3 s.h.
Introduction to computer science concepts, including algorithms, data structures, and object-oriented programming.
75:122 Educational Psychology 3 s.h.
Theory and application of educational psychology in the classroom, focusing on student development, motivation, and learning strategies.
75:123 Sociology Methods and Materials 2 s.h.
Theory and practice of sociological research methods, including data collection, analysis, and interpretation.
75:124 Measurement and Evaluation in Social Science 3 s.h.
Theories and methods for measuring and evaluating social science data, including the design and analysis of social science research.
75:125 Measurement and Evaluation in Music Education 3 s.h.
Measurement and evaluation techniques for music education, including the design and analysis of music assessment tools.
75:126 Methods and Materials Secondary School General Music 3 s.h.
Liederwerke, materials, and organizational plans for developing vocal music instruction in secondary schools, including the selection of repertoire and student participation in choral and instrumental music activities.
75:127 Instrumental Techniques 3 s.h.
Advanced study of instrumental instruction, with an emphasis on the development of instructional skills.
75:128 Psychology of Music 3 s.h.
Cognitive processes and the relationship between music and emotion.
75:129 Instrumental Conducting 3 s.h.
Advanced study of choral techniques, including choral literature, conducting techniques, and choir direction.
75:130 Methods of Secondary School Physical Education 3 s.h.
Theories and practices of teaching physical education to secondary school students, focusing on the development of lesson plans, health education, and physical activity programs.
75:131 Health Counseling and Literacy 3 s.h.
Health counseling techniques, including the development of lesson plans, health education, and physical activity programs.
75:132 Science Methods Elementary School Science 3 s.h.
Definition and use of scientific processes in physical science, chemistry, and biology.
75:133 Science Methods II: Resources, Research, Teaching Strategies, and Curriculum Development for K-12 Science 3 s.h.
Research methods, teaching strategies, and curriculum development for science education, with an emphasis on the integration of technology in the classroom.
75:134 Science Methods III: Mathematics 3 s.h.
Mathematics education, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:135 Methods and Administration of School Health Programs 3 s.h.
Administration of health education programs, including curriculum development, program evaluation, and the integration of technology in the classroom.
75:136 Methods Communication 3 s.h.
Theories and practices of communication in social science, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:137 Health Education and Prevention 3 s.h.
Health education, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:138 School Success in the Classroom 3 s.h.
Theories and practices of teaching students with special needs, including the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:139 Practicum in College Tutoring 3 s.h.
Practicum in college tutoring, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:140 Practicum in Group Tutoring 3 s.h.
Practicum in group tutoring, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:141 Practicum in Elementary School Tutoring 3 s.h.
Practicum in elementary school tutoring, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:142 Practicum in Secondary School Tutoring 3 s.h.
Practicum in secondary school tutoring, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:143 Practicum in Community Tutoring 3 s.h.
Practicum in community tutoring, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:144 Practicum in Cooperative Education 3 s.h.
Practicum in cooperative education, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:145 Practicum in Special Education 3 s.h.
Practicum in special education, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:146 Practicum in Gifted Education 3 s.h.
Practicum in gifted education, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:147 Practicum in Elementary School Counseling 3 s.h.
Practicum in elementary school counseling, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:148 Practicum in Secondary School Counseling 3 s.h.
Practicum in secondary school counseling, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:149 Practicum in Community Counseling 3 s.h.
Practicum in community counseling, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:150 Practicum in Special Education 3 s.h.
Practicum in special education, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
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Practicum in secondary school counseling, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:164 Practicum in Community Counseling 3 s.h.
Practicum in community counseling, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:165 Practicum in Special Education 3 s.h.
Practicum in special education, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
75:166 Practicum in Gifted Education 3 s.h.
Practicum in gifted education, focusing on the development of lesson plans, classroom management, and the integration of technology in the classroom.
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70433 Correct Readings in Special Education 3 s.h.
Recent research from a variety of special education educators on standardized and collaborative evaluation processes. Consent of instructor required.

70437 Current Issues and Trends in Learning Disabilities 3 s.h.
Readings and discussions of current issues and trends in behavioral disabilities, including recent legislation, intervention approaches, and assessment techniques.

70438 Current Issues and Trends in Educational Administration 3 s.h.
Readings and discussions of current issues and trends in educational administration, including recent legislation, intervention approaches, and assessment techniques.

70440 Contemporary Issues in Behavioral Disabilities 3 s.h.
In-depth analysis of current issues in behavioral disabilities, emphasizing an understanding of methodology and contribution to the field.

70440 Current Issues and Trends in Mental Equilibrium 3 s.h.
Readings and discussions of current issues in mental equilibrium, including recent legislation, intervention approaches, and assessment techniques.

70442 Methods for Research in Special Education 3 s.h.
Concurrent and empirical review of methods of research in special education, emphasizing quantitative methods in research design and techniques.

70471 Assessment of Young Children with Disabilities 3 s.h.
Theory and practice for interviewing, observation, assessment of young children, and early intervention. Prerequisite: 70415 or consent of instructor.

70472 Development of Young Children with Disabilities 3 s.h.
Prerequisite: 70471 or consent of instructor.

70473 Methods Earls Childhood Special Education 3 s.h.
Methods and procedures for working with special needs children and young children at age 1, including backwards high children. Prerequisite: 42711.

70474 Methods Early Childhood Special Education 3 s.h.
Methods and procedures for working with children ages 3-5, including kinesthetic modes of communication. Prerequisite: 42711.

70475 Development of Young Children with Disabilities 3 s.h.
Research studies in early intervention. Emphasis on intervention for special needs children at birth, parent-child interaction patterns, assessing functional communication, developing functional communication, and implementation.

70477 Supervised Teaching in Early Childhood Special Education 3 s.h.
Student teaching in a childhood special education program. Prerequisite: 70473.

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70477 Supervised Teaching in Early Childhood Special Education 3 s.h.
Student teaching in a childhood special education program. Prerequisite: 70473.
Undergraduate Program

Higher Education—Major in Health Occupations Education

The health occupations education major prepares teachers for employment at the community college level in preparatory health occupations education programs. In addition to basic skill and General Education Requirements of the College of Liberal Arts, students complete courses in professional education and in the health occupations education specialty field and/or supporting areas.

Students who apply to this program must hold current appropriate certification, license, 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 planned on this base and includes work in professional education and liberal studies appropriate to teachers who wish to earn a baccalaureate degree.

Applicants to this program must satisfy criteria for admission to the teacher education program (TET) of the College of Education.

Program requirements are as follows:

Professional Education Component

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
</tr>
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<tbody>
<tr>
<td>7375</td>
<td>Educational Psychology and Measurement</td>
<td>3 h</td>
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<tr>
<td>7901</td>
<td>Audiovisual Equipment: Instruction</td>
<td>1 h</td>
</tr>
<tr>
<td>7922</td>
<td>Introduction to Teaching in Health Occupations</td>
<td>1 h</td>
</tr>
<tr>
<td>7112</td>
<td>Teaching of Adults</td>
<td>3 h</td>
</tr>
<tr>
<td>7115</td>
<td>Foundations of Vocational Education</td>
<td>2 h</td>
</tr>
<tr>
<td>7920</td>
<td>Introduction to Health Occupations Education</td>
<td>1 h</td>
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<tr>
<td>7911</td>
<td>College of Health Occupations Education</td>
<td>1 h</td>
</tr>
<tr>
<td>7913</td>
<td>College of Health Occupations Teaching Internship</td>
<td>6-12 h</td>
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<tr>
<td>7915</td>
<td>Curriculum Development Application to Community College and Health Careers</td>
<td>3 h</td>
</tr>
<tr>
<td>7916</td>
<td>Evaluation: Application to Community College and Health Careers</td>
<td>2-3 h</td>
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</tbody>
</table>

Additional special course work in Health Occupations Education

Course work in health occupations education specialty and supporting field should be planned carefully in consultation with the adviser.

Students may take workshops or courses offered by specific health colleges or organizations such as development of nutrition skills or computers in education, as long as they meet their educational goals.

Graduate Programs

Educational Administration

The programs in educational administration prepare individuals for leadership positions. Its programs lead to the M.A., Ed.S., Ph.D. degrees and are administrative certification. Educational administration offers programs which are related to those divisions in the College of Education and with other colleges in the University.

Certification

To be eligible for recommendation by The University of Iowa for 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 Registrar's 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 least 30 credit hours in the major field of study. Students must satisfy the University of Iowa minimum semester-hour program for the certification level they seek. An administrative 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 certification, candidates are required to plan their program with their advisor's approval.

Master of Arts

The primary purpose of the M.A. program is to prepare individuals for appointments as elementary or secondary school principal, central staff, and for certain positions within area education agencies and state departments of education.

Students may take the program with or without thesis (32 semester-hour minimum).

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.

Course Requirements

With the aid of an advisor, the student prepares a plan of study including the following core requirements:

- 70-201 Foundations of School Administration | 3 h
- 70-205 Administration of Strategies with Special Emphasis on Education | 3 h
- 70-202 The Principalship | 3 h
- 70-204 Legal Aspects of School Personnel | 3 h
- 70-383 Supervision and Evaluation | 3 h
- 7000 Design and Organization of Curriculum | 3 h

Students must meet the human relations requirement of the state of Iowa and 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 fulfill the following degree requirements.

Elementary Level

- 70-290 Contemporary Management Strategies for the Elementary Principal | 3 h
- 70-443 Field Service Project in Elementary Administration | 3 h

Secondary Level

- 70-290 Contemporary Management Strategies for the Secondary Principal | 3 h
- 70-443 Field Service Project in Secondary Administration | 3 h

Electives selected with approval of advisor.

Comprehensive Examinations

Students must take a comprehensive examination in areas of emphasis selected with their advisor's approval. Students must be registered in the Graduate College during the semester in which they take the comprehensive examination if they plan on graduating that semester.

Specialist in Education

The U.S.S. program prepares candidates for administrative appointments in area education agencies, state departments of education, and the U.S.S. Office of Education. It also assists school administrators in upgrading their administrative skills to the level of superintendent of schools. Students selecting certification plan a program approved by an advisor to meet State of Iowa 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

- 70-290 Administration of Educational Programs and Personnel | 4 h
Education • Planning, Policy, and Leadership Studies

70-254 Politics and Economics of the Governance and Financing of Public Education 4 s.h.
70-257 Administrative Leadership Theory 4 s.h.
70-299 Legal Aspects of School Administration 2-3 s.h.
70-305 Educational Specialist Research in Educational Administration

Program Emphasis
Students must complete the balance of their minimum required semester hours (minus electives) in one of the following areas of emphasis. Courses specifically listed in each area of specialization are the required courses.

Elementary School Administration
The program includes: 3 s.h.
7P-190 Introduction to Educational Measurement
7P-262 School Organization Reform
7P-304 Seminar: Supervision and Administration
7P-202 Interventions for Primary Prevention in Schools

Secondary School Administration
The program includes: 3 s.h.
7P-150 Introduction to Educational Measurement
7P-260 Improving Instruction in the Secondary School
7P-222 Interventions for Primary Prevention in Schools

General School Administration
7P-260 Collective Bargaining in Education 3 s.h.
7P-206 Financial Management of Local School Systems 3 s.h.
7P-375 Educational Administration
7P-213 Introduction to Statistical Methods

Electives
Students choose electives completing the 42 semester-hour requirement for the Ed.S. degree. They may choose electives for specialization in fields such as staff personnel, business affairs, instruction, theory, legal aspects, curriculum, and information systems.

Research
All candidates for the Ed.S. degree must complete a final research paper (4-semester-hour credit) that deals with a specific problem in school administration or leadership.

Comprehensive Examinations
The comprehensive examination for the Ed.S. degree consists of one 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 on graduating that semester.

Ed.S. in Special Education Administration
The Education Specialist in Special Education Administration program is offered jointly with the Division of Special Education.

The primary objective of the program is to provide 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 certification in Iowa to serve as a supervisor of special education (State of Iowa Endorsement 205, 201) or director of special education (State of Iowa Endorsement 220). It also qualifies the student for certification in general administration (State of Iowa Endorsement 171). The program requires a minimum of 62 semester hours of credit.

Admission to the program is limited by available resources. Prior to eight new students are admitted each year. In addition to the general requirements, admission requirements include a master's degree, certification in some area of teaching exceptional children, qualifications for a consultant's endorsement, and classroom experience as a teacher or equivalent experience.

Doctor of Philosophy
The primary purpose of the Ph.D. program is to prepare students for leadership positions at all levels of education (school administration, research, teaching at the college or university level). Through individually designed programs that include coursework, intensive faculty seminars, and research pursuits. Emphasis is placed on the integration of theory and practice in the program.

The Ph.D. in educational administration is a flexible program that prepares professionals for leadership positions at all levels of administrative practice and for academic teaching and research positions. Sufficient coursework and related experiences are planned individually. Students are expected to achieve competence in the areas of educational program planning, finance and governance, leadership theory, evaluation, and research methodologies that include statistical methods. They also must gain expertise in areas of specialized program and personnel policy analysis.

Course content in the Ph.D. program is divided into two parts: a core of common competencies, at least one specialization in the administrative field, cognate study outside the college, research skill development, and a research dissertation.

Commonly selected specializations are: general administration, elementary school administration, secondary school administration, curriculum and instruction, school finance, legal aspects, theory, and school personnel. Students must demonstrate proficiency in two research tool areas.

Admission
Applicants must satisfy Graduate College requirements and are selected through a faculty review process. The division admits a maximum of two students for each semester or the preceding summer session. Factors considered are the recommendations from college or university faculty that speak to the candidate's scholarship and potential for academic success, grade-point average, and Graduate Record Examination (GRE) General Test scores. Also considered is a written statement addressing one of the following topics: personal philosophy of education, steps in the professionalization of teaching, current educational issues and their administrative impact, or the role of administration in educational organizations.

Complete application materials must be submitted by January 1 for fall semester admission. Admission decisions are made by the division faculty. Applicants are notified by February 15.

Core Courses
Core courses are designed to provide the necessary background for further study, including research in specialized areas, and to develop competencies common to the functional areas of school administration. The core courses integrate planning of educational personnel programs, analysis of the plan, and economics of governance and the financing of public education, evaluation of administrative leadership theories, and options in research methodology and quantitative analysis. Each course is four semester credits of hours of credit; is open only to Ed.S. and Ph.D. students; and requires the development and practice of interaction, reading, and writing skills.

Seminars designed primarily for doctoral candidates are offered to supplement each functional core area. Scholarship is reflected in writing, reading, and research in the national literature.

Cognates
Students specializing in administration must complete a 9-semester-hour cognate outside the College of Education with the advisor's approval.

Comprehensive Examination
Doctoral students must satisfactorily complete an extensive six-hour comprehensive examination in the six common areas of educational administration, and a three-hour comprehensive examination in the student's areas of specialization and approved by the student's advisory committee chair. Students must have completed the doctoral core course requirements before registering for the research requirements to take the comprehensive examinations. Students must be registered in the Graduate College at the
time of the exams. No Ph.D. comprehensive examinations are held during summer session.

Students pursuing doctoral programs in areas other than educational administration who wish to take some aspect of the educational administration program as an area of concentration for which they would request a comprehensive examination should consult with the Director of Educational Administration early in the fall semester.

Any of the areas of specialization open to doctoral students in educational administration are open to doctoral students who meet the necessary registration requirements for specific courses. Students would complete approximately 12 semester hours in the area of specialization before requesting a comprehensive examination. If the student decides to take a field within educational administration as a related comprehensive area, he or she should plan to complete approximately 18 semester hours of diversified courses 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. A personal interview with one or more members of the doctoral committee is desirable. A formal defense of the prospectus is complete. A preliminary version of the prospectus and approval to proceed may or may not be granted at the end of the prospectus committee meeting. Dissertations, prospectuses, and preliminary are not held during summer session.

Completation and Final Examination

Students must accumulate 10 semester hours of dissertation research credit. The examination to complete the dissertation must be passed by the student and defended. Students usually take the examination within a month of their anticipated date of graduation. They must be registered at The University of Iowa during the semester in which they graduate.

Residency

Each doctoral candidate must successfully complete two concurrent semesters (a minimum of 9 semester hours including thesis credit or campus) to fulfill the residency requirement. The following sample Ph.D. program requires a minimum of 96 semester hours and assumes that students enter with an M.A. and 32 semester hours of graduate credit.

Core Requirements

10-210 Administration of Educational Programs and Management 4 s.h.
30-204 Politics and Economics of the Governance and Financing of Public Education 4 s.h.
30-210 Administrative Leadership Theory 4 s.h.
10-270 Research Methodology and Quantitative Analysis 4 s.h.

Other-Requiered Courses

Cognate courses selected with approval of advisor 9 s.h.
Research design and/or statistics 6 s.h.
Thesis 10 s.h.
Examination to permit specialization: two or more doctoral seminars and accumulate 12 or more semester hours in a special area.
Total 90 s.h.

Social Foundations of Education

Social foundations of education is an interdisciplinary program designed to enable students to better understand the influence of social, historical, and philosophical forces on the formal social institutions. Major areas of specialization are comparative/international education, history of education, philosophy of education, policy studies, and sociology of education.

General requirements for admission are as stated by the Graduate College. A personal interview with one or more members of the social foundations faculty is desirable and may be required. An undergraduate and/or graduate emphasis in philosophy, the humanities, or the social sciences and two years of teaching experience are strongly recommended. Students must maintain a 3.00 overall grade-point average to remain in the program.

Master of Arts

Students in the M.A. program must take a minimum of 24 semester hours of work in social foundations, which should include at least two courses in at least five of the five areas of specialization. The remainder of the required 22 semester hours of course work must be in one of the following categories appropriate to students' career and academic goals for people particularly interested in philosophy of education: usual take these courses in the Department of Philosophy.

Doctor of Philosophy

The Ph.D. program requires 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 3 semester hours from each of two additional areas. In addition, students must take at least 12 semester hours in related courses in the College of Education, but that must be in an area of concentration with 16 educational administration, educational psychology, measurement and evaluation, and higher education.

Approximately one-third to one-half (30 to 45 semester hours) of each student's program is devoted to course work in depth from at least one other program at the University, such as history, philosophy, political science, or sociology. These sequences are individually planned by the student with the aid of law or by an advisor and suggestions from the appropriate department or departments.

Two research tools are required. They may be selected from the following: (1) a research paper in accordance with the individual candidate's research interests and program or; two courses in a graduate-level statistics sequence, philosophy of science, and sociology of science.

Heterosexism, foreign language(s) proficiency exam.

In addition, all students are required to successfully complete 210-270 Research Process and Design. Dissertation research is usually taken for 12-15 semester hours of credit.

Higher Education

Postsecondary and continuing education in the United States represents an extensive and complex set of phenomena. The academic programs in higher education encompass all areas of study. Degrees are offered at all levels, with emphasis on both research and practice. Preparations for either teaching or administration are available. The following research, service or staff, activities of the faculty and the work of the graduate students are several degree programs illustrate that education beyond the high school level continues in a variety of settings at all ages and in many different settings.

Master of Arts without Thesis

The purpose of the M.A. program is to prepare individuals for secondary, middle-school administrative, institutional management, continuing education, and policy positions in two- and four-year institutions. It is appropriate for those with an interest in teaching, as assistant teacher, or assistant, to the principal, or director, or assistant director, or director, or graduate or program chair in selected areas.

Admission

Applicants for admission must satisfy the requirements of the Graduate College. Candidates are selected on the basis of grade-point average, Graduate Record Examination (GRE) General Test scores, and promise for professional growth.

Transfer, the U.S. immigration, and a statement of the total program of study. Graduates are expected to be in educational administration, educational psychology, measurement and evaluation, and higher education.

Approximately one-third to one-half (30 to 45 semester hours) of each student's program is devoted to course work in depth from at least one other program at the University, such as history, philosophy, political science, or sociology. These sequences are individually planned by the student with the aid of law or by an advisor and suggestions from the appropriate department or departments.

Two research tools are required. They may be selected from the following: (1) a research paper in accordance with the individual candidate's research interests and program or; two courses in a graduate-level statistics sequence, philosophy of science, and sociology of science.

Heterosexism, foreign language(s) proficiency exam.

In addition, all students are required to successfully complete 210-270 Research Process and Design. Dissertation research is usually taken for 12-15 semester hours of credit.

Higher Education

Postsecondary and continuing education in the United States represents an extensive and complex set of phenomena. The academic programs in higher education encompass all areas of study. Degrees are offered at all levels, with emphasis on both research and practice. Preparations for either teaching or administration are available. The following research, service or staff, activities of the faculty and the work of the graduate students are several degree programs illustrate that education beyond the high school level continues in a variety of settings at all ages and in many different settings.

Master of Arts without Thesis

The purpose of the M.A. program is to prepare individuals for secondary, middle-school administrative, institutional management, continuing education, and policy positions in two- and four-year institutions. It is appropriate for those with an interest in teaching, as assistant teacher, or assistant, to the principal, or director, or assistant director, or director, or graduate or program chair in selected areas.

Admission

Applicants for admission must satisfy the requirements of the Graduate College. Candidates are selected on the basis of grade-point average, Graduate Record Examination (GRE) General Test scores, and promise for professional growth.

Transfer, the U.S. immigration, and a statement of the total program of study. Graduates are expected to be in educational administration, educational psychology, measurement and evaluation, and higher education.

Approximately one-third to one-half (30 to 45 semester hours) of each student's program is devoted to course work in depth from at least one other program at the University, such as history, philosophy, political science, or sociology. These sequences are individually planned by the student with the aid of law or by an advisor and suggestions from the appropriate department or departments.

Two research tools are required. They may be selected from the following: (1) a research paper in accordance with the individual candidate's research interests and program or; two courses in a graduate-level statistics sequence, philosophy of science, and sociology of science.

Heterosexism, foreign language(s) proficiency exam.

In addition, all students are required to successfully complete 210-270 Research Process and Design. Dissertation research is usually taken for 12-15 semester hours of credit.
of written examinations based on the core, concentration, and specialization, according to the plan of study developed individually for each student.

Areas of concentration in which examinations may be written are administrative practices, academic practices, continuing education, and policy studies. Students majoring in another field who want to complete a related field in higher education and to be eligible to write a related-field examination should consult with a higher education advisor early in their studies. Plans of study will be developed individually.

Specialist in Education

The Ed.S. program provides advanced graduate education in higher education in the areas of administration, academic planning and program development— including an emphasis on academic administration, community college administration, and continuing education for students usually not planning to continue for the doctorate. The specialist degree also may be awarded upon completion of a special project that consists of: (a) a minimum of 40 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 and specific requirements for admission to the Graduate College. Candidates are selected on the basis of grade-point average, GRE General Test scores, and performance in professional school (e.g., ETS scores, three letters of recommendation, and a statement of educational goals are required for regular admission.

Deadlines for receipt of the application for admission for the fall semester are: GRE General Test scores, three letters of recommendation, and a statement of educational goals are required by November 1 for spring semester admission and April 1 for summer session and fall semester admission.

Requirements

Requirements for the Ed.S. major in higher education are:

At least 18 semester hours in professional education and related fields, including a structured internship determined in consultation with the advisor to be appropriate for one of the following areas: administration, academic planning and program development— including an emphasis on academic administration, community college administration, continuing education, and community college teaching.

At least 28 semester hours in the area of specialization, to be determined in consultation with the advisor;

Ten semester hours of electives, to be approved by the advisor:

Research conducted under registration in 76/365 Educations Specialist Research in Higher Education for 4 semester hours; and

Two three-hour comprehensive examinations: one, that covers the field of higher education in general; and one in one of the four concentrations in higher education, 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 related field in higher education should consult with the higher education advisor in their studies. Plans of study are developed individually.

Teaching Internship

Program participants teach half-time for a full semester at cooperating community colleges under the supervision of an experienced faculty member in that college and with field supervision from The University of Iowa. Interns participate 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.

Participating is required to travel to a community college and reside there for the one-semester program. Some interns are accommodated at nearby community colleges, but preference is given to those willing to travel for that experience.

Doctor of Philosophy

The Ph.D. program is designed for persons who are likely to serve as administrators, specialists, researchers, and teachers in high education and related fields. The program in higher education offers five areas of concentration: general administration, academic planning and program development—including an emphasis on academic administration, community college administration, continuing education, and policy studies. It requires a minimum of 90 semester hours beyond the baccalaureate degree.

All higher education students are required to participate in the core experiences (16-18 semester hours). In addition, candidates choose one area of concentration and must earn 18-24 semester hours of credit in that area. Ordinarily, candidates choose a related field of study 9-12 semester hours in a minor (approximately 30 semester hours), which may be met by appropriate previous course work of the M.A. level that complements the area of concentration. The dissertation research (12-15 semester hours) must deal with a specific problem in the area of concentration.

These three components—concentration core and related fields, and dissertation research—constitute a major part of the typical doctoral program and give students the opportunity to specialize in one or more areas of interest.

While the doctoral program places heavy emphasis on administration at both the theoretical and applied levels, students are expected to take courses work outside the college, using the flexibility of the program to develop expertise in areas such as organizational analysis and the design and evaluation of instructional programs.

Comprehensive examinations for the doctorate cover the general areas of higher education and the candidates' area of concentration, minor and/or related field, and dissertation.

Admission

Applicants for admission to the doctoral program must satisfy the requirements of the Graduate College. Candidates will be reviewed on the basis of grade-point average, GRE General Test scores, and performance for professional growth. Transcripts, the GRE General Test scores, three letters of recommendation, and a statement of educational goals are required for regular admission.

Deadlines for receipt of the application for admission, transcripts, GRE General Test scores, three letters of recommendation, and a statement of educational goals are November 1 for spring semester admission and April 1 for summer session and fall semester admission.

Courses

Educational Administration

10050 Foundations of School Administration 3.0 hrs.
Introduction to organization and administration of elementary and secondary schools; history of education, educational administration, political ideologies, and philosophical issues; the law and administrative roles and ethical responsibilities of educational leaders. Emphasis on student motivation, behavior, and school management structures.

10051 Individualized Instruction, Foundations 3.0 hrs.
Research, individualized course based on needs, special projects, special studies, individualization process, methods of individualization, concept of student and instructor required.

10060 Individualized Instruction, Theory 3.0 hrs.
Individualized course based on needs, special projects, special studies, and individualization process, methods of individualization. Concept of student and instructor required.

10061 Individualized Instruction, Personnel 3.0 hrs.
Individualized course based on needs, special projects, special studies, and individualization process, methods of individualization. Concept of student and instructor required.

10062 Individualized Instruction, Finance 3.0 hrs.
Individualized course based on needs, special projects, special studies, and individualization process, methods of individualization. Concept of student and instructor required.

10063 Individualized Instruction, Law 3.0 hrs.
Individualized course based on needs, special projects, special studies, and individualization process, methods of individualization. Concept of student and instructor required.

10064 Individualized Instruction, Social Policy 3.0 hrs.
Individualized course based on needs, special projects, special studies, and individualization process, methods of individualization. Concept of student and instructor required.
Admission

Applications for admission to the program must hold an M.A. degree from an accredited institution. The grade-point average requirement is the same as that for the Graduate College. If an applicant's transcript indicates a deficiency in certain areas of specialization, the Graduate College may accept such deficiencies and allow admission on the condition that the student complete the related courses within the time indicated in the study plan. However, the Graduate College reserves the right to determine the areas in which a candidate must make up the deficiency in order to be admitted.

Requirements

Counseling Psychology

The doctoral program in counseling psychology is approved and fully accredited by the American Psychological Association. The program requires a minimum of 60 semester hours of credit, with a minimum of 90 credits required for the doctorate. Courses are offered by the College of Education and University departments.

Admission

Applications are complete when the following requirements have been met:

1. A completed application form.
2. A letter of recommendation from a previous employer or other professional person who knows the applicant's potential for completing the doctoral program.
3. An interview with a faculty member. The interview may be conducted in person or by telephone.

Requirements

Basic Psychology

A student is required to have a thorough grounding in the basic discipline of psychology. The requirements include:

1. At least six semester hours of credit in psychology courses.
2. At least three courses in psychological research methods.
3. At least three courses in advanced topics in psychology.
4. At least two courses in current issues in psychology.

Counseling Psychology

The doctoral program in counseling psychology is approved and fully accredited by the American Psychological Association. The program requires a minimum of 60 semester hours of credit, with a minimum of 90 credits required for the doctorate. Courses are offered by the College of Education and University departments.
75350 Processes and Outcome in Counseling and Psychotherapy 3 s.h.
75352 Psychotherapy II: Cognitive and Behavioral Approaches 3 s.h.
75405 Issues and Ethics in Professional Psychology 3 s.h.
75434 Practicum in Counseling Psychology 3 s.h.
75435 Advanced Practicum in Counseling Psychology (May be repeated) 3 s.h.

Total (minimum) 21 s.h.

Students must enroll in practice to reach a specified level of client contact, case management, and additional experience beyond the required course work. Students must complete at least one of the required courses in counseling psychology before enrolling in the 75435 Advanced Practicum in Counseling Psychology. Fulfillment of practicum requirements may be granted under special circumstances by a majority vote of the Counseling Psychology faculty.

Other Requirements
A major area of specialization is planned individually in collaboration with the doctoral student's major and minor advisors. Course choices are determined in consultation with the major advisor. A research project equivalent to the dissertation is required and the student must be admitted prior to the comprehensive examinations. Up to 6 semester hours of credits may be applied to this project. The dissertation research study is planned in consultation with the doctoral student's major advisor.

Dissertation credit can range from 12 to 15 semester hours. Students spend a calendar year at internship setting approved by the Counseling Psychology faculty. The student must complete all diploma requirements for the M.A. degree in consultation with his or her dissertation committee. The dissertation area must be chosen in consultation with the major advisor. The student must complete a comprehensive examination in consultation with the major advisor. The student must complete another comprehensive examination prior to the internship.

Students must show appropriate levels of emotional balance and interpersonal skills and act within the American Psychological Association's Ethics Principles. Psychology.

Educational Psychology
Master of Arts
This program provides an overview of educational psychology in an area of specialty inquiry. It includes course work in human development, cognitive learning, motivation, socialization, personality, educational measurement, and research methods. The program does not prepare students for a teaching certification. Rather, it is intended to foster an understanding of the psychological principles on which educational practices are based.

Admission
Admissions requirements are the same as those described by the Graduate College. Teaching experience is desirable but not required. The faculty reviews applications as they are received.

Requirements
Students must take the degree thesis within the thesis option. The degree thesis requires a minimum of 35 semester hours of coursework, with thesis, it requires a minimum of 28 semester hours of coursework with 2-4 semester hours of thesis credit. Both programs require 75145 Introduction to Statistical Methods or equivalent. Students who intend to apply for admission to the Ph.D. program should take the M.A. degree with this thesis.

Students plan the remainder of the program in consultation with their advisors. Choosing courses from the following four areas: human development, cognitive learning, motivation, and socialization/sexuality. Students must take at least one course in each of these areas. The faculty encourages an emphasis in at least two courses outside the discipline.

The record of every student admitted to the program is reviewed near the end of the second semester of residence. The program faculty considers course grades, evidence of critical and analytical skills, development during the year, and previous capital gains. Students identified in the review are discussed with the student. Students may be dropped from the program at the discretion of the faculty.

The program culminates in six hours of comprehensive examinations consisting of either three two-hour or two three-hour exams. The three-hour exam calls for a minimum of three courses in each area tested. The two-hour exam calls for a minimum of two courses in each area tested. The comprehensive exam is planned jointly by the student and advisor and must be approved by the M.A. committee.

Doctor of Philosophy
This doctoral program prepares graduates for a variety of careers that share a concern for the application of psychological principles to educational practice. Such careers include psychological evaluation at the university and college level and research or administrative positions in educational agencies, cities, states, planning organizations, and public schools.

Admission
An applicant for admission to the program must hold an M.A. degree from an M.A. degree candidate in good standing at an accredited institution. Applicants whom the M.A. degree is not directly relevant to educational psychology may be admitted conditionally. The student must complete the M.A. degree prior to taking the Ph.D. comprehensive exams.

The graduate program's average requirement for the M.A. degree is the same as that established by the Graduate College. Applicants are expected to have earned scores on both the verbal and quantitative sections of the Graduate Record Examination General Test. Candidates may be admitted conditionally on the basis of other evidence, such as high grade-point average, strong academic performance, specific recommendations for admission, and research recommendations. Applications are reviewed as received.

Requirements
The program requires a minimum of 72 semester hours beyond the bachelor's degree and encompasses four substantive areas—human development, cognition/learning, motivation/socialization/sexuality, and individual differences. Students must complete at least one course in each of the four areas, with three of these courses above the 100 level. In addition, students must demonstrate substantial competence in at least one of these areas. A minimum demonstration of competence requires the successful completion of at least one comprehensive examination based on no fewer than 10 semester hours of work above the 100 level.

Additional requirements include the following: 75350 Research Methodology, a minimum of 8 semester hours of 200-level course work in statistics and one graduate-level course in measurement and 10 semester hours of Ph.D. thesis credit. Alterations in these requirements can be made by individual students with the approval of a committee composed of three members of the educational psychology faculty. Students are encouraged to take courses outside the discipline and Education in their area of interest.

Graduates with the Master's degree without thesis must undertake a project in their area of interest. This project must be approved by three members of the educational psychology faculty. The candidate's program is planned jointly by the student and the advisor.

The record of every student admitted to the program is reviewed near the end of the second semester of residence. The program faculty considers course grades, evidence of critical and analytical skills, development during the year, and previous capital gains. Students identified in the review are discussed with 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 must write comprehensive examinations. Six of the eight hours of comprehensive examinations...
transmissions must be based on course work in educational psychology offered by the division or on closely related course work offered by other University departments. A comprehensive examination taken outside the educational psychology program must be planned in consultation with the advisor. The project examination schedule must be approved by the comprehensive examination committee.

School Psychology

Specialist in Education

The E.S.D. program provides course work and supervised field experience in the areas of education and psychology, enabling graduates to qualify for certification as school psychologists (State of Iowa Endorsement 40).

Admission

Undergraduate preparation in psychology or education is desirable but alternative backgrounds are considered. Qualifications include an undergraduate grade point average of 3.00, Graduate Record Examination (General Test) scores above 500 in the verbal and quantitative areas, strong letters of recommendation, and a demonstrated interest in working with children.

Application and supporting materials must be submitted by February 1 for consideration for fall admission. Decisions are made by March 15. Up to 40 students are admitted per year.

Requirements

The program requires a minimum of 30 semester hours. The plan of study includes courses in psychological foundations, educational psychology, and research methods. Degree requirements include a written comprehensive examination and a research paper prepared in conjunction with course TP-206 Educational Specialist Research (4 semester hours).

Doctor of Philosophy

The Ph.D. program in school psychology prepares students for positions in higher education, for consultative supervisory, research, and administrative positions in public and private agencies.

Admission

Preference is given to applicants with undergraduate majors in psychology or education, graduate grade point averages above 3.00, and verbal and quantitative scores above 500 on the Graduate Record Examination General Test. The faculty also encourages applicants from other psychology programs with M.A. or Ed.S. degrees.

Applications must include three letters of recommendation and a personal statement of interest and goals. Complete application materials, along with transcripts and test scores, must be received by February 1 for consideration for fall admission. Decisions are made by March 15. A minimum of fifty

students are admitted to the program each year.

Requirements

The program requires a minimum of 90 semester hours. Course work is chosen from among the areas of educational psychology, theoretical/educational foundations, educational psychology, and research methods. The course of study is developed by the student and the academic advisor. Students are required to write comprehensive examinations, carry out a research project equivalent in scope to an M.A. thesis, serve as an intern, and complete a doctoral dissertation through enrollment in TP-493 Ph.D. Thesis in Psychological and Quantitative Foundations.

Instructional Design and Technology

Master of Arts

The M.A. in instructional design and technology promotes 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 2.70 on all previous course work and a score of 500 or higher on both the verbal and quantitative sections of the Graduate Record Examination General Test. These requirements are not met but there is compelling evidence of superior ability, a conditional admission may be granted. Regardless of the admission status, 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 full admission must be received by May 1; for spring admission, by October 1. The faculty reserves the right to admit part-time students as space permits. Applications are encouraged to discuss their plans with a faculty member and to include a personal letter with a description of their interests in the instructional design and technology field that may be helpful in the admission process.

Applications for fall admission must be received by May 1; for spring admission, by October 1. The faculty reserves the right to admit part-time students as space permits. Applications are encouraged to discuss their plans with a faculty member and to include a personal letter with a description of their interests in the instructional design and technology field that may be helpful in the admission process.

Requirements

The degree requires the following core courses (or approved equivalents):

- TP-130 Introduction to Instructional Design and Technology
- TP-132 Selection and Use of Media in Instruction
- TP-135 Design and Production of Media for Instruction
- TP-107 Psychological Bases of Instructional Design
- TP-129 Introduction to Educational Measurement
- TP-220 Advanced Instructional Design and Technology

The program culminates with a six-hour thesis of comprehensive examinations based on core and emphasis area courses. The examinations are divided into two or three areas as follows: general instructional design, 2-3 hours; area of emphasis, 2-3 hours; and 0-2 hours.

Specialist in Education

The Educational Specialist program in instructional design and technology consists of 60 semester hours of course work beyond the Bachelor's degree. The E.S.D. is usually considered a first degree.

Admission

Regular admission requires a grade-point average of at least 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 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, 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 full admission must be received by May 1; for spring admission, by October 1. The faculty reserves the right to admit part-time students as space permits. Applications are encouraged to discuss their plans with a faculty member and to include a personal letter with a description of their interests in the instructional design and technology field that may be helpful in the admission process.

Applications for fall admission must be received by May 1; for spring admission, by October 1. The faculty reserves the right to admit part-time students as space permits. Applications are encouraged to discuss their plans with a faculty member and to include a personal letter with a description of their interests in the instructional design and technology field that may be helpful in the admission process.

Requirements

Course work required for the degree includes the following core courses (or equivalent); three research methods courses (TP-135 Introduction to Psychological Bases of Instructional Design, and Technology, or equivalent), and 18 semester hours of study in one area: classroom instruction, computer applications, instructional development, health sciences education, initiating and developing, media production or school media. In addition,
Engineering is defined by the Accreditation Board for Engineering and Technology as that discipline in which knowledge of the mathematical and scientific sciences gained by study, experience, and practice is applied with judgment to design, develop, test, and operate efficient and economical structures, machines, materials, systems, and processes to serve society.

The major aim of engineering is the creation of a new product, process, material, or system. This activity demands a high degree of creativity coupled with a full understanding of existing fundamentals, good judgment, and a practical sense of economics.

The College of Engineering prepares young men and women for one or more of the many career opportunities in the engineering profession. Such opportunities include positions in design, production, development, research, management, and consulting. Engineers are employed in industries, organizations, government agencies, and private practice.

The College of Engineering has two major responsibilities. The first is to provide high quality undergraduate engineering programs by 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 in the major fields of engineering. Engineering graduate programs leading to the Master of Science and Doctor of Philosophy degrees are offered in the fields of biomedical engineering, chemical engineering, civil engineering, computer engineering, electrical engineering, industrial engineering, mechanical engineering, and chemical 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.

The College of Engineering offers programs leading to the Bachelor of Science in Engineering (B.S.E.E.) degree in the major fields of biomedical engineering, chemical engineering, civil engineering, electrical engineering, industrial engineering, and mechanical engineering. Programs leading to the Master of Science and Doctor of Philosophy degrees are offered in the fields of biomedical engineering, chemical and biomedical engineering, civil and environmental engineering, electrical and computer engineering, industrial engineering, and mechanical engineering.

Graduation With Distinction

The college awards degrees "with highest distinction" to students in the top 5 percent of their graduating class, "with high distinction" to students in the next 5 percent, and "with distinction" to students in the next 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 honor recognition, students must take their final 40 semester hours of graded course work in college with a grade point average of 3.90 or higher during the given semester or 3 or more consecutive summer sessions, or a grade point average of 3.90 or higher of 45 or 60 semester hours or a total of 90 semester hours. They must have a minimum grade-point average of 3.90 on an college work used to satisfy the degree requirement as well as on all work undertaken at the University of Iowa.

Graduation With Honors

High scholastic achievement is certified in two ways, graduation with distinction based on grade point and graduation with honors based on both grades and intellectual accomplishment. To be eligible for graduation with honors, students must be nominated by their major department and approved by the Academic Honors Committee and the director of the honors program.

President's List

Students who earn a 4.00 grade-point average for two consecutive semesters (excluding summer sessions) on at least 12 or more semester hours of graded work with no less than 0 grades standing on the current or two previous semesters' record, are recognized by inclusion on the president's list.

Dean's List

Students who achieve grade-point averages of 3.0 or above during a given semester or 3 or more consecutive summer sessions, or a grade point average of 3.0 or higher of 45 or 60 semester hours or a total of 90 semester hours. They must have a minimum grade-point average of 3.00 on an college work used to satisfy the degree requirement as well as on all work undertaken at the University of Iowa.
Admission Requirements
To qualify for admission to the College of Engineering as a freshman, Iowa resident applicants must have:

Successfully completed at least four years of English/language arts; four years of mathematics, which must include at least two years of algebra, one year of geometry, one-half year of trigonometry, and one-half year beyond trigonometry; two years of a single foreign language; three years of natural science, which must include at least one year of chemistry and at least one year of physics; and at least two years of social studies.

Completed the Enhanced ACT Assessment with a composite standard score of 25 or above and a standard score of 20 or above on mathematics (or equivalent SAT scores) and a minimum composite score of 26 or above on mathematics (or equivalent SAT scores) and a minimum composite ACT score.

Nonresident freshman applicants must have completed the same high school requirements as required for resident applicants, and must have:

Completed the Enhanced ACT Assessment with a composite standard score of 25 or above and a standard score of 20 or above on mathematics (or equivalent SAT scores) and a minimum composite ACT score.

Transfer applicants must complete the same high school requirements as entering freshmen and must submit an official high school transcript as well as a transcript of college work undertaken at other institutions. Each transfer applicant must have:

Completed at least one semester of calculus, equivalent, and

Maintained a cumulative grade-point average of at least 2.5.

Freshman and transfer applicants who do not meet the foreign language requirement may be admitted under a conditional basis for a maximum of four regular semesters in order to complete the requirements of an introductory, college-level foreign language. Students who do not meet the other high school core course requirements may be admitted upon special review by the College of Engineering, and must be required to make up deficiencies. Courses taken at The University of Iowa to make up deficiencies do not count toward graduation.

Fullfillment of the entrance requirements for admission does not guarantee admission to the College of Engineering. The college selects those applicants who appear to be best qualified 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 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 for 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 French, 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.

Mathematics and Basic Sciences
The mathematics and basic sciences stem provides the foundation upon which the engineering courses in each engineering program are based. This area includes a minimum of five courses in mathematics and two each in chemistry and physics. The faculty of each engineering program has specified at least one additional mathematics or science course beyond these minimum requirements that provides a base appropriately 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 creative practices. The engineering science courses use the underlying principles learned in the mathematics and basic sciences courses to understand and predict the behavior of idealized models of real systems or systems encountered in engineering. These courses include statistics, theromodynamics, and electrical circuits as well as other engineering courses relevant to each major.

Engineering Design
Engineering design, the third curriculum stem, is the process of developing a system, component, or process to meet stated needs and to be a decision-making process, often iterative, in which the basic sciences, mathematics, and engineering sciences are applied optimally to convert resources into a net stated objective. The design process includes the establishment of objectives and constraints, market analyses, concepts for process and system configuration, testing, and evaluation. Given to the design process are the inclusion of realistic constraints such as economy, reliability, aesthetics, ethics, and social impact.

Because of the need to utilize a spectrum of basic and applied science matter, which involves course work taken early in the freshman year, the pre-engineering activities usually begin in the junior year. The freshman year course or activity is 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. All of the courses in these curriculum stems are sequenced and integrated to meaningful pattern so that students better understand the interrelationships and importance of each stem.

Freshman and Sophomore Year
Approximately one-half of the core requirements in each engineering program are common to all the engineering majors. These common course requirements constitute a core program. Most of the courses in the core program are scheduled in the freshman and sophomore years, and are under the direction of core courses. Hence, students generally may postpone elective selections until after engineering major to pursue, or may change their engineering major through the freshman year with minimal loss of credits.

Exceptions to the common freshman year and sophomore year core programs are offered in some engineering courses, both of which require a second and end semester course during the second semester of the freshman year. By careful planning, undecided engineering majors may schedule the core courses and postpone the decision about a major until as late as the end of the third semester. However, because of prerequisite sequencing, an 8-week delay may result in an extra semester or a summer session. The curriculum for each engineering program is listed as the archives devoted to each major in this section under Curriculum.

The following are freshman year courses that are common to all engineering curricula:

First Semester
4.13 Principles of Chemistry I 4.0
1613 Physics I 4.0
5225 Engineering Calculus I 5.5
5755 English I 4.0
3.0 Humanities or social science elective 3.0
Total 17.5

Second Semester
410 Principles of Chemistry Lab I 1.5
2295 Engineering Calculus II 5.5
Engineering

229 40 Matrix Algebra for 2 s.h.
239 17 Introductory Physics I 4 s.h.
575 6 Engineering II 5 s.h.
Total 15 s.h.
The courses listed above are required of all students in engineering. 4 14 Principles of Chemistry B is recommended during the second semester for students who are biochemical or chemical engineering majors. Students in these majors usually postpone taking 229 40 Matrix Algebra for Engineers until the first semester of the sophomore year. Students pursuing a major in industrial engineering should review the social science requirement specified for that major before selecting any social science courses.
The above list of courses that are common for all the engineering majors assumes that incoming freshmen qualify for the advanced rhetoric class. 193. Students who do not meet this eligibility requirement for 193 are required to complete the two-course sequence 191 1-2 Rhetoric, for a total of 8 semester hours. However, only 4 semester hours may be applied toward the degree requirement for rhetoric.
Credits earned for courses below the level of the beginning courses specified in each engineering curriculum apply on a student’s grade report and permanent record, not generally are not selected to satisfy any electives or required courses for an engineering degree. Examples of courses in this category besides 191 1 Rhetoric include mathematics courses 229 1-2, chemistry courses 4 5-8, and physics courses 249 1-5.

Credits below the level of the beginning courses specified in each engineering curriculum apply on a student’s grade report and permanent record, not generally are not selected to satisfy any electives or required courses for an engineering degree. Examples of courses in this category besides 191 1 Rhetoric include mathematics courses 229 1-2, chemistry courses 4 5-8, and physics courses 249 1-5.

For undecided engineering majors who want to postpone selecting an engineering major beyond the freshman year, a third semester of courses common to all the majors could include the following:

Third Semester
229 41 Differential Equations for 3 s.h.
239 18 Introductory Physics II 4 s.h.
57 6 Statics 3 s.h.
57 8 Electrical Circuits 3 s.h.
57 9 Thermodynamics I 3 s.h.
Total 15 s.h.

Students pursuing three semesters of courses common to all majors may encounter a delay in graduation because of scheduling problems for prerequisite courses that require completion 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 15 semester hours of humanities and social science electives with at least 6 in the humanities and at least 6 in the social sciences. In each case the 6 semester hours usually include a lower-level course followed by an advanced-level course from the same department. Social science courses in the industrial engineering major are specified. Students considering a major in this program should consult "Industrial Engineering" in this section for the catalog requirements for their required social science courses. Courses that are primarily mathematical or scientific in nature and those that are designed specifically to develop, introductory language skills or 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; Theatre, Arts, English, History; Languages, Literature, and the Arts; Music; Philosophy; Religion; Logocriticism, or other departments 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 (300-level) courses to satisfy sufficient depth of knowledge in an elected subject of study. This advanced course work must be in the same department as the introductory course unless prior approval has been obtained from the curriculum committee of the College of Engineering. This course work does not generally satisfy any of the humanities requirements unless the courses are at or beyond the second-year level.

Social science electives may be selected from the following departments: Anthropology, Urban and Regional Planning, Economics, Geography, Political Science, Psychology, Sociology, Journalism and Mass Communications, or World History, or other departments approved by the curriculum committee of the College of Engineering. To assure 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 (300-level) course work. This advanced course work must be in the same department as the introductory course unless prior approval has been allowed from the curriculum committee of the College of Engineering.

Combined Engineering/Liberal Arts Program
Students may earn two University of Iowa baccalaureate degrees in a combined program in the Colleges of Engineering and Liberal Arts. Successful candidates are awarded a B.S.E. (Bachelor of Science in Engineering) by the College of Engineering and a B.A. (Bachelor of Arts) by the College of Liberal Arts.

Combined Engineering/Liberal Arts Program
Students may earn two University of Iowa baccalaureate degrees in a combined program in the Colleges of Engineering and Liberal Arts. Successful candidates are awarded a B.S.E. (Bachelor of Science in Engineering) by the College of Engineering and a B.A. (Bachelor of Arts) by the College of Liberal Arts.

Fine Arts, B.S.E. (Bachelor of General Studies with major in Music) by the College of Liberal Arts.

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

To enter the combined degree program, students are eligible for admission to the College of Engineering. Interested students should schedule an appointment with the assistant 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 this program are required to complete the General Education Requirements and the requirements for the major in the College of Liberal Arts. Liberal Arts high school course or similar requirements for admission apply to combined degree programs approved.

It is crucial that students enroll in the appropriate mathematics and engineering courses early in their course of study to expedite the completion of their program. The specific engineering courses taken by students vary according to the engineering major selected. Since courses in mathematics, the physical sciences, humanities, and social sciences are accepted only 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 equal total of 158 semester hours of credit, including at least 35 semester hours of courses offered by the College of Engineering and at least 36 semester hours of courses offered by the College of Liberal Arts.

Combined College of Engineering/M.B.A. Program
An Accelerated Professional Track (APT) Program has been initiated by the College of Business Administration for incoming undergraduate students who want to lengthen their MBA program while financing their engineering degree. Strategically selected course work may allow such students to complete the bachelor's degree in four years and the M.B.A. degree in the fifth year. Exceptional students with interest and completion of the prerequisites and business administration may enhance their managerial career opportunities through this combined degree program.
To qualify for the API program, students must have an engineering degree, completed their engineering study, earned a 3.50 grade-point average or better, and indicated the intent to pursue both degree programs simultaneously or on a fall-onfall basis. Students selected for admission to the program may be candidates for 12,000 per-semester scholarship ($180 for summer session) while graduate students. The graduate fellowships are provided by the College of Business Administration.

Admission to the API program does not guarantee admission to the Graduate College. However, since the undergraduate admission requirements are very high and the undergraduate curriculum demanding, it is unlikely that admitted students will readily qualify for admission to the graduate M.B.A. program upon application. A cooperative education internship experience with industry is arranged for admitted M.B.A. students. This professional work experience with private industry is considered to be integral part of the combined degree program. It is generally scheduled for the summer session after the completion of the bachelor's degree.

The M.B.A. curriculum is designed for upper-level students; no previous courses in business are required. The program consists of three components: foundation courses, integrated core courses, and elective courses. The integrated core courses provide the student nine elective hours at the graduate level after students have been admitted to the Graduate College. Foundation courses are courses in which the student is enrolled after admission. Engineering students may qualify for a waiver from certain foundation courses by proficiency exam or through equivalent course work.

Engineering students are assigned a major advisor in the College of Engineering. Upon acceptance into the API program, advising for the M.B.A. program is provided by the coordinating committee of the College of Business Administration. Coordination of the courses for API students is provided by the student advisor in the College of Engineering and the associate dean of the College of Business Administration.

Combined B.S. in Engineering/M.S. or M.A. in Planning

A program combining a bachelor's degree in engineering with a master's degree in urban and regional planning has been developed for students who want to pursue a career in planning in either the public or private sector. Planning encompasses the development alternatives to improve the quality of life in cities and regions. Planners devise courses of action in response to a variety of problems and opportunities and assess the likely outcome of those actions. They are involved in diverse fields such as public transit, low-income housing, neighborhood preservation, environmental protection, infrastructure finance, downtown revitalization, social services, and economic development.

Students in the program may acquire a B.S. in engineering and an M.S. or M.A. in planning in a total of five or more academic years. Students should apply for the joint program either when they apply for admission to the engineering college or before they complete their sophomore year following matriculation. A letter reporting admission to this program should be submitted by the student to the College of Engineering, the University of Iowa.

As with the combined engineering/M.B.A. program, admission to the Master's program does not guarantee admission to the Graduate College, which is required in order to complete the degree requirements in the planning program. Hence, students in the combined degree program should be aware of the application requirements for the graduate planning program and should be prepared to meet those requirements when they apply for admission to the program (since the time when they are completing the B.S.E.E. degree requirements).

The curriculum is based on the philosophy that planners must develop the theoretical and analytical skills that permit them to identify issues and recommend alternative ways of resolving these issues. In addition, planners must develop the practical skills (e.g., report writing, presentations and briefings, computer literacy, team management) that allow them to function effectively in various organizational and political environments. Students become well versed in topics such as economic theory, quantitative methods, environmental protection, and social services and are exposed to citizen involvement.

At the heart of the University of Iowa planning program is an integrated core curriculum. Its purpose is to provide a rigorous foundation in the areas of public and social policy.

The core program is completed by all students in the last two years of the undergraduate program. Several majors (credit concentration) are organized around public policy policy areas. They include transportation, housing and community development, environmental quality, urban infrastructure, and economic development. Students fulfill the sectoral major requirement by completing 9 semester hours of credit in courses offered by various departments and schools of the University, including the graduate planning program and the engineering college. They complete these courses after graduating from the College of Engineering and while enrolled in the graduate program in urban and regional planning.

Each student is assigned an advisor from engineering and one from planning. During the first four years of the program, students work primarily with their engineering advisor and the assistant dean of the College of Engineering. For the fifth year, students confer with their graduate planning advisor.

Two Bachelor's Degrees in Engineering

Recent College of Engineering graduates and current students may earn two bachelor's degrees at the same time. The requirements for the second degree are as follows: Required courses include all courses required by the first degree program and the second degree. The second degree program must be completed in at least the minimal level of competency expected of graduates of that program. Students must file an academic plan of study which must be approved by the faculty of the second degree program and submitted to the office of the dean before the degree course work in the second program begins. The proposed academic plan of study should include a list of the courses to be taken in the second program along with a list of the courses already completed and yet to be completed for the first engineering degree program. The approved plan must be submitted to the office of the dean prior to the student's enrollment in the second program. Any changes in the plan must be approved by the same faculty. The plan of study for the second program and by the department committee, and any changes made in the plan of study may be reviewed at any time, but a new plan must be submitted to the office of the dean before the student's enrollment in the second program.

Minor

While fulfilling requirements in engineering, undergraduates also students may fulfill requirements for a minor in the College of Business Administration or a minor or minor in any degree-granting department or approved program in the College of Liberal Arts. A minor in another college of the University is subject to the requirements established by the college offering the minor. A notation of the minor is entered on the student's permanent record.

Students must file the registrar's office of their enrollment in the minor requirements when they apply for a degree. This assures that the minor designation is included on their transcript.
Minor in Business Administration

Requirements for a minor are two economics courses (EC 111 and EC 112), two accounting courses (BA 41 and BA 42), a marketing course (OM 100), a management course (SI 100), a finance course (FIN 100), and a legal course (LAW 40). In addition to these required courses, students usually complete a calculus course, a computer course, and a probability and statistics course.

Engineering majors satisfy the mathematics, statistics, computer science, and management requirements with courses in 223 M1, 233 B1, 516, and 574. A 209 grade point average in courses applicable to the minor is required. Students who want to complete a major in Business Administration are advised to select courses that satisfy M.B.A. requirements.

Minor in Liberal Arts

Requirements for a minor are a minimum of 10 semester hours in the liberal arts department, at least 17 of which are in advanced courses at the University or above and acceptable to the department. Students should confer with the minor department to identify acceptable courses. Students must achieve a 2.0 grade point average in courses applicable to the minor. Courses to be counted toward the minor may not be taken pass/fail.

Cooperative Education Program

Cooperative education involves the integration of academic work with practical experience in an organized program. Participating students spend alternate periods in full-time academic study on campus and in full-time engineering-related employment in business, industry, or government.

Students earn a substantial portion of college expenses during these periods, but the success of the program depends on the work experience being compatible with their educational value as well. This is assured by the monitoring of the work experience provided by cooperating employers and by achieving student interest and ability to the work situation.

The insight gained by involvement in the practical application of subject matter studied in the classroom usually results in improved motivation during the study periods, with a corresponding improvement in academic record. Another important aspect of the experience gained, although it is difficult to evaluate, is the increased awareness of the many nontechnical considerations involved in any engineering project.

The co-op phase ordinarily begins during or immediately following the sophomore year, and continues until the beginning of the senior year. The total time for the degree program under this option usually is five years and includes the equivalent of at least one full year of work experience. The program is an option available to qualified 3 and 4 year olds on a voluntary basis.

Undergraduate Academic Advising Center

Students who are considering engineering but want to explore various fields of study before they declare a specialized major should enroll in the College of Liberal Arts as open majors. They will be assigned an advisor from the Undergraduate Academic Advising Center. With the advice of their advisor, students select courses appropriate for the engineering program while they explore other fields of interest. Students meet frequently and regularly with their advisors for the intensive advising support they need as they evaluate their educational alternatives and plan their programs of study. The advisors’ offices are located in Burge Hall and Day House. For more information, contact the Undergraduate Academic Advising Center, Burge Hall or Day House, The University of Iowa.

Academic Standards

Semester Load Limit

A normal academic load is about 16 semester hours of course work for a full-time student. 8 semester hours for a summer semester. No student may register for more than 15 semester hours in any 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 senior standing of their grade level on the day the student receives credit earned applicable to a Bachelor of Science degree in engineering, according to the following:

- Freshmen—less than 29 semester hours;
- Sophomore—30 to 59 semester hours;
- Junior—60 to 89 semester hours;
- Senior—90 or more semester hours.

Grading System

The college uses a letter grading system with a plus or minus to designate gradations of performance between the letters. The numerical equivalent of the letter grades with plus and minus options is as follows.

<table>
<thead>
<tr>
<th>Grade (definition)</th>
<th>Grade points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>4.33</td>
</tr>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>3.67</td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B- (below average)</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>D</td>
<td>1.67</td>
</tr>
</tbody>
</table>

Dropout and Adding Courses

Courses may be added with permission of the adviser and the instructor during the first three weeks of the semester or first one and one-half weeks of the summer session.

Courses may be dropped with permission of the adviser and the instructor at any time during the first six weeks of the semester. Under no circumstances may a course be dropped after the tenth week, in which case special approval must be granted by the adviser, the course instructor, and the Dean of the College. Only under compelling circumstances may courses be dropped after the tenth week, in which case special approval must be granted by the adviser, the course instructor, and the Dean of the College. Under no circumstances may students be permitted to drop after the beginning of the scheduled final examination period.

Undergraduates receive the mark of W for any course dropped after the third week of the semester or first one and one-half weeks of the summer session. To count this mark as credit and dropping of the same course, students may not drop the same course with a mark of W more than
Withdrawal of Registration

Students in good academic standing who withdraw from registration during the final four weeks of a regular semester, or during the final three or two weeks of a twelve- or eight-week summer session, respectively, are not permitted to enroll for the semester immediately following without specific approval from the assistant to the dean.

Students on scholastic probation who withdraw their registration at any time without good cause are considered as having been dismissed for poor scholarship.

Withdrawal cards for students enrolled in the college are signed by the assistant to the dean only upon recommendation by the student's advisor and department chair.

Pass/Nonpass Option

A maximum of two courses taken in the College of Liberal Arts or Business Administration on a pass/nonpass basis may be applied toward satisfaction of the humanities and social sciences requirement. Students who want to take such courses in liberal arts or business administration pass/nonpass must meet the conditions and follow the procedures specified by these colleges. The pass/nonpass option may not be used for courses taken to satisfy the rhetoric requirement.

Students enrolled in courses taught in the College of Engineering may choose to be graded on a pass/nonpass basis under the following conditions:

The signatures of the advisor and instructor must be obtained on the proper form and the completed form must be submitted to the registrar by the student. This pass/nonpass program was established by University policy.

The mark of P (pass) is awarded when the final course grade earned was C- or above; the mark of N (nonpass) is given for grades of D- or below. Marks of P and N are not used in computing the grade point average, and the mark of N does not count as earned hours.

No course work taken in the College of Engineering on a pass/nonpass option may be used to satisfy requirements for an 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 can be elected only prior to completion of a course by a student who repeats a course on a pass/nonpass basis. The option may be applied to no more than three courses, and it may be applied only once to a given course.

Transfer students may apply the option on a prorated basis. For example, students who transfer no more than 42 semester hours of applicable engineering course work may use this option for a maximum of three courses, while students who transfer between 43 and 86 semester hours of credit may use this option for no more than two courses, and students who transfer 87 or more semester hours may use this option for only one course. Students who want to exercise this option should apply to the assistant to the dean.

Satisfactory/Fail Courses

The satisfactory/fail seminar courses required in each of the professional programs are offered on a satisfactory/fail basis. No other engineering courses are offered on this basis. An F (failure) grade earned for such courses does not satisfy any portion of the professional seminar requirement.

Incomplete and No Report Grades

A mark of I (incomplete) or NR (no report) that is not replaced by a final grade prior to the announced deadline during the student's next regular semester of registration is replaced by a final grade of F (failure). Students with incompletes from the spring semester are exempt from completing the course during the succeeding summer session.

Credit by Exam or by Substitution

Advanced Placement Program

Students who have pursued college-level courses in high school through the Advanced Placement Program (AP) of the College Entrance Examination Board and have achieved satisfactory scores on the comprehensive examination administered by the College Board's Advanced Placement Program are awarded college-level credit. For example, students earning a score of 3, 4, or 5 in an AP-level calculus course in the Advanced Placement Program receive 4 semester hours of credit for MATH 2320. Engineering College. Students earning a score of 3, 4, or 5 in a BC-level calculus course receive 8 semester hours of credit for MATH 2310-2320 Engineering Calculus I-III. Credit earned through other AP courses may also be applied to other engineering course requirements to appropriate to course level, as long as credit for those requirements has not already been earned through other exams or course enrollments. Questions about AP credits should be directed to the assistant to the dean.

CLEP Credit

Credit earned through the College-Level Examination Program (CLEP) may be applied to meet appropriate requirements in engineering. For example, up to 7 semester hours of credit earned on the social science general exam and/or on the subject exams on general social science topics may be applied to satisfy a portion of the social science requirement. Similarly, up to 7 semester hours of credit in the general and/or separate subject exams in the humanities may be applied to satisfy a portion of the humanities requirement. However, no more than a total of 16 semester hours of CLEP credit may be applied to the total requirements and all social sciences requirements for engineering.

Completion of the depth requirement in the social sciences requirement of CLEP credit to satisfy the beginning level prerequisite can be accomplished as follows:

Social sciences: CLEP credit in the general social sciences category, followed by a 100-level course in any acceptable social science area.

Humanities: CLEP credit in literature, followed by a 100-level course in literature; CLEP credit in historical perspectives, followed by a 100-level course; history; CLEP credit in general social sciences category, followed by a 100-level course in any acceptable humanities area, including literature and history.

Credit earned on other CLEP subject exams also may be applied to meet other course requirements as appropriate to content and level at a nonduplicate basis. Overviews about CLEP exams and credits should be directed to the assistant to the dean.

Credit by Examination

Students who have acquired knowledge in an engineering subject matter from sources other than a college course, and who demonstrate that knowledge, may be granted the opportunity to obtain credit toward graduation by examination. For example, credit for an engineering course may be earned by achieving a satisfactory test score on a comprehensive exam similar to a final exam for that course (subject to the approval of the University). The policy is 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 unaccredited institution may request validation of the credit to a maximum of 12 semester hours. Credit validation may be granted after students have completed at least 24 semester hours of coursework at The University of Iowa that includes appropriate courses for which the work to be validated are prerequisite. Students who want to use this option should contact the assistant to the dean during their first semester of enrollment in the College of Engineering.

Credit from Other Colleges

Course requirements in engineering may be satisfied by credits earned from courses taken in other colleges of the University or at other accredited colleges or universities. When students apply for admission to the
College of Engineering, they must submit official transcripts from each college attended along with their application for admission. After the credit has been evaluated, the Office of Admissions will assign a college-level credit from accredited institutions. If an application for admission is granted, the credit is evaluated and recorded on the student’s record. Students may be awarded up to 36 credit hours while enrolled in one college. The grades earned in these courses are recorded based on the quality of work and the level of the course requirements. Students who meet the criteria for transfer are permitted to transfer with a maximum of 36 credit hours and a maximum of four years of college experience. The College of Engineering has recommended five liberal arts. The courses recommended are the College of Engineering, all college courses, they are taken at other institutions must be reviewed and approved by the College of Engineering. The courses listed are: 1. The student must be enrolled in the College of Engineering, 2. The course must be completed within three years of being admitted to the College of Engineering. 3. The course must be completed within two years of being admitted to the College of Engineering. 4. The course must be completed within two years of being admitted to the College of Engineering. 5. The course must be completed within two years of being admitted to the College of Engineering. Misancompliments and Complaints

Student Academic Misconduct

Regulations dealing with cases of cheating or plagiarism are delineated by a collective policy. Students may not drop the course or use the second-grade option to eliminate the failing grade. The beginning of each academic term, course instructors individually announce and explain their policies on acceptable levels of student performance. The course is offered in the fall, spring, and summer semesters. When a policy is violated, a zero is assigned as the final grade. The instructor submits a written report of any disciplinary action to the office of the dean. Students are notified by the office of the dean of any disciplinary action reported and are informed of appeal procedures if they want to protest the action. Student Complaints Concerning Faculty Actions

In cases where complaints do not involve alleged student academic misconduct, students with complaints against faculty first should attempt to resolve the issue with the faculty member. If the student does not find the issue to be resolved, the student should discuss the matter with the chair of the faculty member’s department. Students who are uncomplimentary dealing directly with a faculty member or a department chair may seek assistance from the faculty member who has a complaint. However, assistance from the chair is discouraged, and the student is expected to resolve the issue through the chair of the department.
Student organizations dedicated to providing support and assistance in the development of more equitable enrollments of minorities and women in the college are the Black Students in Engineering and the student chapter of the Society of Women Engineers. A local chapter of Theta Tau, a national professional engineering fraternity, is active in service to the college and draws its membership from students throughout the college.

Professional Registration
Registration as a professional engineer is governed by the laws of each state. The Iowa requirements include graduation from an accredited engineering curriculum at least four years, followed by at least four years of practical experience. In Iowa the agency that controls and monitors the licensing procedure is the State of Iowa Engineering and Land Surveying Examining Board. The first step is to complete the specified examination on engineering fundamentals given at the University near the time of graduation. (Graduates of unaccredited programs must complete at least one year of professional experience to be eligible to take the engineering fundamentals exam.) Following graduation and the successful completion of the examination, graduates receive an Engineer-in-Training (EIT) certificate. The first step in the procedure is to pass the admission examination in the specialty area following a minimum of four years of approved professional experience. At this point the graduate engineer is a registered "Professional Engineer."

Graduate Programs
The general rules and regulations for the graduate programs are established by the Graduate College. However, the specific admission and degree requirements for each graduate engineering program are indicated in the descriptions devoted to the individual programs. Also included in those sections are a description of the curriculum and 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 45,000 books and 500 periodicals, equipped with microfilm and microfiche readers and provides study spaces for 100 library users.

Iowa Computer-Aided Engineering Network (ICAE)
This facility provides primary support for instructional computing in the College of Engineering. ICAE consists of approximately 100 computer engineering workstations manufactured by the Apollo division of Hewlett-Packard. Each of these is a powerful computer joined with a high-resolution video display for graphics applications. The Apollo's are tied together by a high-speed network allowing all stations to share common data, programs, and peripheral devices.

The Apollo's are augmented by a large number of Apple Macintosh personal computers. The Macintoshes can, at the user's command, function as stand-alone facilities, be tied to the Apollo network or Weog Computing Center facilities, or be used to access national computer networks. A variety of printers, plotters, and other specialized devices are available through the ICAE system.

Software supported by ICAE includes several programming languages as well as graphics and word processing facilities. Also available are a number of custom software packages for computer-aided engineering, including two and three-dimensional drafting and design, surface and solids modeling, finite element modeling and analysis, system simulation, control system analysis, and electronic design.

ICAE facilities are used by students throughout the undergraduate and graduate engineering program and in all engineering disciplines. Several large student laboratories provide engineering students with access to ICAE. The Howard C. Elder Laboratory for Engineering Computing, located on the fourth floor of the Engineering Building, houses 20 Apollo work stations and 40 Macintoshes, together with printers, plotters, and other related equipment. A second, functionally identical facility is located on the third floor. A third student facility, intended to support more advanced applications, is located on the first floor.

Small work stations clusters for software and course development programs are located in each of the six engineering departments. Resident clusters are located in the chemical engineering department in the Chemistry-Biology Building and in the Hydraulics Laboratory of the Iowa Institute of Hydraulic Research.

Computer Services
In addition to local facilities provided by ICAE, services of the Weog Computing Center are available to students and faculty of the college. Access to these facilities is available at student computing laboratories in the college.

The college’s Center for Computer-Aided Design, located in the Engineering Research Facility, has extensive computer facilities, including an Alliant 17000 supercomputer, a VAX 11/780 super-minicomputer, and advanced graphics equipment for research in computer-aided design.

The electrical and computer engineering department has two VAX 11/750 minicomputers and a number of Sun and Apollo graphics work stations for teaching and research. In addition, a number of microcomputers and microcomputers are available within the college for specialized use by students and faculty.

Career Planning and Placement Services
The Engineering Placement Office is a resource center for students and alumni seeking professional and graduate school employment. Services provided to graduating students include on-campus interviews, current job listings, information and assistance with resumes, cover letters, interview technique seminars, and assistance in career decision making.

Major resources available to all engineering students and alumni include a comprehensive employer library, information from employers specifically soliciting new engineers for full-time and summer positions, current data on hiring projects and starting salaries, and placement data on recent graduates. The Engineering Placement Office, with intranet access, is located in Room 3121 of the Engineering Building.

Organization of the College
The College of Engineering is organized into six departments and three research units. The departments contain biomedical engineering, chemical and biochemical engineering, civil and environmental engineering, electrical and computer engineering, industrial engineering, and mechanical engineering. Each department offers undergraduate and graduate degree programs. Information about each of the degree programs follows in later sections.

The three research units are the Iowa Institute of Hydraulic Research, the Center for Computer-Aided Design, and the Iowa Institute of Biomedical Engineering. Descriptions of these units follow.

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. It was organized formally in 1912 to coordinate capacities, facilities, and resources available at the University for research on problems in engineering hydraulics and hydrology, and...
soon broadened its scope of activities to include fluid mechanics.

Active programs of basic and applied engineering research are conducted at IHI in five modern, well-equipped laboratories and with total floor space exceeding 72,000 square feet. Programs currently being pursued are flowing in the following areas: solid-state transport mechanisms, river engineering, dispersion processes, ceramic engineering, hydraulic structures, water resources simulation, computational hydraulics and fluid mechanics, hydrology, shale-hydraulic fracturing, (fluid layers with thickness on thick and three-dimensional boundary layers). Turbulent and turbulent shear flows, and water quality dynamics.

High-lease involvement of graduate students is a hallmark of many IHI projects. Because it is a part of the College of Engineering, and because it is heavily involved in Fluids Engineering for industry and in fundamental research programs, IHI provides unique opportunities for valuable research and engineering experience to advanced-degree students and postdoctoral trainees as part of their educational programs.

Center for Computer-Aided Design

The Center for Computer-Aided Design was founded to enhance research and development of design methods using modern computer technology. In 1982, it was designated a National Science Foundation as an Industry/University Cooperative Research Center and was renamed Design Optimization of Mechanical Systems. The research program of the center is focused on mechanical system dynamics and control, control system analysis, structural optimization, and dynamic computer-aided research facility consisting of an Alliant FX/20 computer with graphics workstations, a graphics system, and other related computer equipment. The faculty, staff, and students associated with the center.

Faculty, staff, and students participate in the center's development of real-time computer software and its director. A comprehensive list 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 institute facilitates the development of innovative biomedical and health care products from research and development, sponsors patents for newly developed products and processes, and transfers these innovations to Iowa industries.

The Institute also hosts a professional development through educational seminars, continuing education courses, and other professional development activities. A graduate and undergraduate student participation in interdisciplinary research and development is encouraged and supported by the institute. "Institute Faculty" members engage in numerous consulting activities 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 5, which identifies the course as one offered by the College of Engineering.

The second digit of the prefix identifies the engineering core courses or the courses offered by the department as follows:

1-Biomedical engineering
2-Chemical and bioengineering
3-Civil and environmental engineering
4-Electrical and computer engineering
5-Industrial engineering
6-Mechanical engineering
7-Engineering core
8-Mechanical engineering

The two- or three-digit suffix of a course number identifies the level and type of course. Generally, the suffix numbering below 100 designate courses primarily for undergraduates, numbers 100 to 199 designate courses for undergraduates and graduates, and numbers 200 and above designate courses primarily for graduates.

The table below provides a more detailed listing of course numbers and the information they convey about level and type of course.

Engineering Core Courses

All of the undergraduate engineering courses, which are detailed in the following sections, build upon a core program as described in the earlier section entitled "Undergraduate Curriculum." Course descriptions follow those courses of the core program that are offered through the College of Engineering. Not all the following courses are required for each engineering major. Consultations with a specific major are given in the curriculum listing in the section that follows. The following courses are available to nonmajors unless special permission is obtained from the assistant to the dean.
<table>
<thead>
<tr>
<th>Junior Year</th>
<th>First Semester</th>
</tr>
</thead>
<tbody>
<tr>
<td>57:17</td>
<td>Computers in Engineering</td>
</tr>
<tr>
<td>57:18</td>
<td>Principles of Electronic Instrumentation</td>
</tr>
<tr>
<td>51:40</td>
<td>Biological Systems Analysis</td>
</tr>
<tr>
<td>51:49</td>
<td>Engineering science core elective (see &quot;Engineering Science Core Electives,&quot; below)</td>
</tr>
<tr>
<td>51:91</td>
<td>Professional Seminar</td>
</tr>
<tr>
<td>52:18</td>
<td>Biomedical Engineering</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>16 s.h.</strong></td>
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<table>
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<tr>
<th>Second Semester</th>
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<tbody>
<tr>
<td>225:39</td>
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<td>57:21</td>
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<td>57:22</td>
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<td>51:70</td>
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<td>51:80</td>
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<tr>
<td>51:91</td>
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<tr>
<td><strong>Total</strong></td>
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<table>
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<tr>
<th>Senior Year</th>
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<tbody>
<tr>
<td>51:85</td>
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<tr>
<td>Biomedical engineering design elective (see Biomedical Engineering Electives, below)</td>
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<tr>
<td>Biomedical engineering science elective (see below)</td>
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<tr>
<td>Biomedical engineering elective (see below)</td>
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<tr>
<td>51:91</td>
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<tr>
<td>51:18</td>
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<td><strong>Total</strong></td>
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<table>
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<tr>
<th>Fifth Semester</th>
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<tbody>
<tr>
<td>51:48</td>
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<tr>
<td>Biomedical engineering electives (see below)</td>
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<tr>
<td>51:51</td>
</tr>
<tr>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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</tbody>
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<table>
<thead>
<tr>
<th>Engineering Science Core Electives</th>
<th>Students select one of the following courses:</th>
</tr>
</thead>
<tbody>
<tr>
<td>57:12</td>
<td>Linear Systems Analysis</td>
</tr>
<tr>
<td>57:15</td>
<td>Materials Science</td>
</tr>
<tr>
<td>57:16</td>
<td>Mechanics of Deformable Bodies</td>
</tr>
<tr>
<td>51:49</td>
<td>Engineering Science Core Electives</td>
</tr>
<tr>
<td>51:51</td>
<td>Biomedical Engineering</td>
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<tr>
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<tbody>
<tr>
<td>57:12</td>
<td>Linear Systems Analysis</td>
</tr>
<tr>
<td>57:13</td>
<td>Engineering Biological Sciences</td>
</tr>
<tr>
<td>57:15</td>
<td>Materials Science</td>
</tr>
<tr>
<td>57:16</td>
<td>Mechanics of Deformable Bodies</td>
</tr>
<tr>
<td>51:49</td>
<td>Engineering Science Core Electives</td>
</tr>
<tr>
<td>51:51</td>
<td>Biomedical Engineering</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Biomedical Engineering Electives</th>
<th>A total of 14 semester hours must be chosen with at least one course (3 semester hours) from the biomedical engineering design electives and one 51-credit course (3 semester hours) from the biomedical engineering science electives. The lists are as follows.</th>
</tr>
</thead>
<tbody>
<tr>
<td>51:48</td>
<td>Biomedical Engineering Design Electives</td>
</tr>
<tr>
<td>51:18</td>
<td>Biomedical Engineering</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>16 s.h.</strong></td>
</tr>
</tbody>
</table>

| Other Acceptable Biomedical Engineering Electives | 51:18 | Intermediate Mechanics of Deformable Bodies | 3 s.h. |
|-------------------------------------------------|-------------------------------------------------|-------------------|
| 52:13 | Finite Element Techniques in Engineering I | 3 s.h. |
| 52:20 | Introduction to Digital Design | 3 s.h. |
| 53:20 | Introduction to Software Design | 3 s.h. |
| 54:49 | Signals and Systems | 3 s.h. |
| 54:48 | Digital Image Processing | 3 s.h. |
| 54:46 | Computer-Based Control Systems | 3 s.h. |
| 51:18 | Intermediate Heat Transfer | 3 s.h. |
| 51:16 | Intermediate Mechanics of Fluids | 3 s.h. |
| 51:18 | Organic Chemistry I | 3 s.h. |
| 51:18 | Organic Chemistry Lab | 3 s.h. |
| **Total** | **15 s.h.** | |
Graduate Programs

The goal of graduate study at the both the M.S. and Ph.D. levels is to educate students in the disciplines of biomedical engineering more broadly and thereby than it is possible at the B.S. level. The goal is to enable students to use contemporary methods at an advanced level during a professional career in engineering design, development, and research.

Each student's course of study is based on individual background and career objectives, and evolved academic pathways. Department faculty members have teaching and research expertise in areas related to biomechanics, cardiovascular and fluid biomechanics, biometrics, instrumentation, biosystems, 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 biology. M.S. students who want a terminal degree program may combine electives, while those who want some specialization in any particular field may concentrate their preferences through the combination of departmental courses or as electives from other departments of the College of Engineering and the University.

Ph.D. programs may center on any one of the previously described areas through the choice of appropriate course work and research topics.

Master of Science

The M.S. degree in biomedical engineering requires a minimum of 30 semester hours of course work and research. Students may choose either a thesis or non-thesis option. The latter must include at least 6 semester hours of 600-level courses. Students who choose the thesis program may count 6 semester hours of credit for thesis research and writing toward satisfying the 30-semester-hour requirement. Either degree may be a terminal degree or an intermediate step toward a Ph.D.

A tentative plan of study for each student is determined through consultation with an advisor. All M.S. candidates at least three graduate faculty members, including at least two on the biomedical engineering faculty, are 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.

The requirements for the M.S. degree may be completed within two calendar years. However, students with academic duties and/or other constraints may need up to two calendar years to complete the degree.

Candidates for the M.S. degree must have successfully completed the following courses or equivalents as undergraduates or graduates:

50:103 Mathematical Methods in Engineering 3 s.h.
50:120 Biomedical Engineering Lab 2 s.h.
72:120 Biomedical Engineering Physiology 4 s.h.

Two biomedical engineering courses chosen from any of the two of the following: biomechanics, and biometrics areas (the acceptable courses(s) in each area are listed below).

51:141 Graduate Biological Systems Analysis 3 s.h.
or 51:145 Biomedical Computer Systems 3 s.h.
51:150 Biomechanics 3 s.h.
or 51:155 Cardiovascular Biomechanics 3 s.h.
51:171 Intermediate Biometrics 3 s.h.

And additional 15 semester hours or more approved by the student's advisor. The student's plan of study should provide for as much advanced work as aptitude and previous preparation permit.

Biomedical Engineering Project Internship

Under the contentions for the M.S. degree program, the biomedical engineering department offers a small number of biomedical engineering project internships to selected incoming graduate students who are interested in acquiring practical engineering project experience.

First Semester

50:113 Mathematical Methods in Engineering or equivalent 3 s.h.
51:130 Biomedical Engineering Lab 2 s.h.
51:290 Advanced Biomedical Engineering Project I 3 s.h.
Design elective 3 s.h.
Technical elective 4 s.h.
Total 15 s.h.

Second Semester

56:15 Finite Element Techniques in Engineering I or equivalent 3 s.h.
51:297 Advanced Biomedical Engineering Project II 3 s.h.
Design elective 3 s.h.
Technical elective 3 s.h.
Total 15 s.h.

Each trainee receives a $500-per-month stipend per work period (ten hours per week).

Doctor of Philosophy

The doctoral program, including acceptable transfer credits, requires a minimum of 72 semester hours of graduate credit. Of these 72 hours, at least 60 semester hours must be in formal course work taken after the B.S. degree is awarded. At least 24 semester hours must be in research and thesis credits. For students entering with an M.S. degree, at least 36 semester hours of formal course work must be completed past the M.S. degree, and at least 24 semester hours must be research and thesis credits. Based on research progress, changes are made to the program. The student's graduate committee may make additional formal course work in order to strengthen areas of perceived weaknesses.

Admission to the Ph.D. program is conditional until students successfully complete a qualifying examination, which is administered by the biomedical engineering faculty. The decision on whether the student is eligible for the qualifying examination is made by the student's doctoral committee.

Admission to Ph.D. candidacy requires a minimum grade-point average of 3.25 on 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 advisor's recommendation, students are admitted to the comprehensive examination by their committees.

Having satisfactorily completed these examinations, students may only to complete and defend their dissertation at the Ph.D. level. Requirements for the Ph.D. degree generally can be completed in about three years beyond the master's degree.

Admissions and Financial Assistance

Students who have earned a baccalaureate or postbaccalaureate degree in an engineering discipline or an equivalent in the mathematical or physical sciences, with a minimum grade-point average of 3.00 and an acceptable score on the Graduate Record Examination General Test (combined verbal and quantitative score of 1250) are eligible to be considered for admission to the Master of Science degree or in biomedical engineering. Students may, under exceptional circumstances, be
considered for conditional admission with a lower grade-point average and GRE General Test scores. Students on conditional status must achieve regular status within 8 semester hours of initial registration by attaining a grade-point average of at least 3.00 and regular acceptance by the department faculty. Students who do not meet these requirements are subject to dismissal.

Reference letters, research interests, previous graduate study grade-point average, and other factors also may be considered in making admission decisions. 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 the required undergraduate courses: Biometrics I and Biomedical Measurements I.

The Biometrics Laboratory is equipped for testing mechanical and thermal properties of biomaterials and thin sectioning of hard tissues and prostheses for histology. This laboratory also is used for M.S. and Ph.D. Metals as Biomaterials, and for I & IV Curricula. The Biomechanics Laboratory is equipped for measuring biomechanical variables of clinical and experimental importance and for designing electronic instrumentation in biomechanical engineering. This laboratory also is used for I & IV Biomedical Measurements I.

Research Facilities and Laboratories

Applied Mechanics Laboratory

The Applied Mechanics Laboratory is equipped to study the biomechanics of small bone specimens under complex dynamic loading conditions. Biomechanics Laboratory

The Biomechanics Laboratory is equipped to study cardiovascular fluid dynamics, particularly flow past prosthesis and flow in the human aorta. In addition, the laboratory has an imaging-processing system based on the Leica DMRB microscope and a Gould/Deake IP400 image processor with video camera digitizer.

Biomechanics Laboratories I and II

The biomechanics laboratories are equipped to study the biomechanics of head and neck trauma, similar spine load, and the effect of vibration on the spine.

Biomedical Image Processing and Computing Laboratory

The laboratory has an image-processing system used to digitize anatomical slides, photographs, X-rays, and CAT scan images.

Biosystems Laboratory

The Biosystems Laboratory is equipped to conduct physiological experiments on the cardiovascular and respiratory systems.

Courses

Special

61108 Cooperative Education Training

61120 Biomedical Engineering

61109 Biometrics I

61100 Biological Systems Analysis I

61109 Biometrics I

61110 Biomedical Measurements I

61115 Biomedical Engineering Systems

61116 Biomedical Engineering Design Project

61117 Biomechanics

61118 Individual Investigations: Biomedical Engineering

61120 Biomechanics and Biomedical Engineering

61120 Biomechanics and Biomedical Engineering

4.3. b. Concepts of diffusion and various biomaterials methods, such as liposomes, for use in controlled release of drugs. Design and analysis of various experimental designs. Application of ANOVA and regression analysis to test the effects of independent variables on the response variable. Prerequisites: 2210 or 2211 or 2205 or equivalent.

4.3. b. Techniques of radiographic and contrast imaging, and their role in clinical diagnosis. Application of techniques to clinical problems. Includes fluoroscopic, computed tomography, and magnetic resonance imaging. Prerequisites: 2210 and 2211. Comprehensive Test.

4.3. b. The laboratory provides an overview of current research in biomaterials and their role in clinical and preclinical studies. Includes lectures on the design and analysis of various experimental designs. Prerequisites: 2210 and 2211. Comprehensive Test.

6.3. b. Concepts of diffusion and various biomaterials methods, such as liposomes, for use in controlled release of drugs. Design and analysis of various experimental designs. Application of ANOVA and regression analysis to test the effects of independent variables on the response variable. Prerequisites: 2210 or 2211 or 2205 or equivalent.

6.3. b. The laboratory provides an overview of current research in biomaterials and their role in clinical and preclinical studies. Includes lectures on the design and analysis of various experimental designs. Prerequisites: 2210 and 2211. Comprehensive Test.
1185 Advanced Computer Systems Analysis I 3 cr.
Application of digital computer control theory to analysis of feedback computer systems. Computer simulation techniques. Preequ: MATH 511. Graduate level. Credit/No Credit."
Sophomore Year
First Semester
4.121 Organic Chemistry I 3 s.h.
228.40 Matrix Algebra for Engineers 2 s.h.
226.01 Differential Equations for Engineers 3 s.h.
25.18 18, 26 Chemistry II 4 s.h.
57.1 Statistics 2 s.h.
*Humanities or social science elective 3 s.h.
Total 15 s.h.
Second Semester
4.122 Organic Chemistry II (or science elective) 3 s.h.
4.140 Inorganic Chemistry 3 s.h.
228.72 Elementary Numerical Analysis 3 s.h.
52.41 Process Calculations 3 s.h.
5.8 Electrical Circuits 3 s.h.
Total 15 s.h.
Junior Year
First Semester
4.131 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.
57.13 Engineering Biologies Science 3 s.h.
52.38 Professional Seminar: Chemical Engineering 0 s.h.
Total 15 s.h.
Second Semester
4.132 Physical Chemistry II (or science elective) 3 s.h.
4.135 Physical Chemistry 2 s.h.
226.03 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
52.44 Heat Exchanger Operations 3 s.h.
52.46 Heat Transport 2 s.h.
52.39 Professional Seminar: Chemical Engineering 6 s.h.
57.21 Principles of Design I 3 s.h.
Total 16 s.h.
Senior Year
First Semester
52.45 Chemical Reaction Kinetics 3 s.h.
5.35 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.
Total 15 s.h.
Second Semester
52.48 Unit Operations Laboratory II 2 s.h.
52.86 Chemical Engineering Process Design 3 s.h.
52.99 Professional Seminar: Chemical Engineering 3 s.h.
Technique elective 3 s.h.
Humanities and social sciences 3 s.h.
52.99 Professional Seminar: Chemical Engineering 3 s.h.
Technical elective 3 s.h.
Total 15 s.h.
Graduate Programs
The Department of Chemical and Biochemical Engineering offers curricula leading to the Master of Science and Doctor of Philosophy degrees. Through course work and research, students gain an understanding of the principles of engineering science and then apply these principles to contemporary problems such as energy, environment, biotechnology, and materials. The emphasis is on research 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 members in teaching and research as part of the graduate training.

Research
Current research strengths of the Department of Chemical and Biochemical Engineering are in the areas of catalyst design, reactor design, global and regional environmental research, separation and bioseparation processes, biochemical engineering and applied biocatalysis, and particulate material processing sciences.

Catalog and Reactor Design
Within the general field of kinetics, catalysis, and reactor engineering, research is being conducted in the areas of heterogeneous, homogeneous, and supported gases-solid catalysis; gas-solid reactions; modeling and analysis of heterogeneous reactions and design of novel reactor-separators. Chemical routes are being developed for both fresh and chemicals from renewable resources.

Global and Regional Environmental Research
Contamination of the environment in which we live and work is a major problem facing today's engineers. The Department of Chemical and Biochemical Engineering has had an active research program in the environmental area of atmospheric air pollution, indoor air pollution, and hazardous waste. Particular emphasis is placed on the chemistry and physics of local, regional, and global air pollution problems. Research in support of this activity includes high-speed computing and detailed sensitivity analysis. This is an interdisciplinary area involving environmental engineering and the Center for Global and Regional Environmental Research.

Separation and Bioseparations Processes
Research at The University of Iowa is devoted to better understanding and development of new techniques in the areas of separation and bioseparation processes. In particular, researchers are investigating a novel technique in ultrafiltration and microfiltration called transmembrane pressure pulsation. In this process, high frequency oscillating pressure across the membrane exhausts the various flows through the membrane. Another new device is being investigated for preparative continuous electrofiltration. Electrocoagulation dispersion, and biological membranes for gas separation, and enzymatic membrane reactors are also being investigated.

Biochemical Engineering and Applied Biocatalysis
Biochemical engineering involves the industrial application of enzymes, microorganisms, cell, and tissue for the production of chemicals, pharmaceuticals, and other materials of commercial value. The department is active in developing new methods in both biocatalysis in biocatalytic processing, including enzymes in organic solvents, enzyme-based biocatalysts, and biologically based membrane separations. The department is also engaged in the scale-up of animal cell cultures (insect and mammalian) for the production of recombinant proteins and monoclonal antibodies. The integration of biotechnology with traditional chemical engineering has led to a new multidisciplinary area involving other engineering departments and the Departments of Chemistry, Biology, Biochemistry, and the College of Pharmacy.

Particulate Material
Processing-Spray Theory
Theoretical and experimental studies in morphological analysis of particulate materials, being carried out by the faculty. Morphological analysis is concerned with the measurement of particle size, shape, texture, chemical properties, and physical properties. These methods are applied to particle formation processes and studies of particle behavior. Examples include wear debris analysis, crystallization and precipitation (formation pm-apes), and dust explosions and concentration of particles (particle behavior).

Master of Science
A thesis and a minimum of 28 semester hours of coursework, including at least 24 semester hours comprised in residence at The University of Iowa. The thesis involves the completion of a thesis project, which is supervised by a thesis advisor and involves the collection, analysis, and interpretation of data.
The minimum course work requirement is 26 semester hours (about eight courses), and the remainder of the 31 semester hours is devoted to research. To be eligible for the M.S. degree, students are required to maintain a minimum grade-point average of 3.00. M.S. degree candidates must defend their theses at the final oral examination. Although it is possible to obtain an M.S. degree in one year, most students prefer to have at least 72 semester hours of graduate credit. Ph.D. candidates are expected to maintain a minimum grade-point average of 3.50.

Ph.D. candidates are required to pass a qualifying examination and a written and oral comprehensive examination prior to candidacy for the degree. The Ph.D. comprehensive examination may be a special design minor or, at the discretion of the examining committee, may consist of a written examination covering graduate work. These examinations are arranged by the graduate advisor. The examinations may be repeated at the discretion of the examining committee. The order for the comprehensive examination is published in the Bulletin of the Graduates College.

There is no foreign language requirement. A special design minor, which is a defense of the thesis, completes the doctoral program.

Admission

Full admission to graduate study is granted to students who have a B.S. degree in chemical engineering with satisfactory grades from an accredited American or Canadian college or university. Graduates of foreign universities are also accepted, depending on evaluation of their records. Admission to the graduate program usually requires a grade-point average of 3.00. Conditional admission to the M.S. program may be granted to students who are not fulfilling the above requirements, with approval from the chair of the chemical and biochemical engineering department.

Applicants should take the verbal, quantitative, and advanced part of the Graduate Record Exam (GRE) General Test; scores should be submitted with the application. Graduate courses in chemical and biochemical engineering are designed for students who have an undergraduate background in chemical engineering. However, exceptional students from other areas also may apply for admission to the M.S. or even the Ph.D. program in chemical and biochemical engineering. Such students need to take certain undergraduate courses as background so that they can perform in the graduate courses with minimum difficulty. Since these undergraduate courses are taken as make-up courses, they do not count toward a graduate degree.

Financial Aid

A number of fellowships, scholarships, and assistantships are available to graduate students who qualify. These are awarded 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 metallurgical preparation, including a darkroom. Mechanical testing instruments and hardness testing machines are also available. Heat treatment and annealing furnaces are available in a nearby laboratory. Testing aids include x-ray spectrometer, x-ray diffraction in LiF, and x-ray spectrometry packages.

Required Course Laboratories

Unit Operations Laboratory

This is primarily an instructional laboratory for senior undergraduate students. It involves experimentation in transport phenomena, heat transfer, fluid flow, chemical engineering unit operations, and reaction kinetics of catalysts. The laboratory includes pilot plant equipment, such as a distillation column interfaced with a microprocessor, wiped film evaporator, shell-and-tube heat exchanger, jacketed kettle, packed column for gas absorption, pilot-plant filter press, and agitated reactor. Other equipment includes stirred-tank reactors, packed-bed reactor, gas chromatographs, and a variety of instrumentation for measuring flow, temperature, pressure, and weight.

Equipment in emerging areas of chemical engineering has recently been added, including a fully instrumented microbial fermentation, centrifuge, aspirator, and polymer extruder. A small shop area is available to students for use under a technician's supervision.

Process Control Laboratory

The process control laboratory is a modern, computer-aided instructional laboratory for seniors. It is integral to the senior process control course. The laboratory consists of computer control of a shell-in-shell heat exchanger, a stirred-tank reactor, and a three-tank flow process. Additional laboratories include instruction in the use of analog controllers.

The computer control laboratory is set up to provide an ensemble of learning experiences with the same equipment, so that analogues and feedback into the control process can be obtained. Topics include determination of the gain and time constants for single-loop systems, determination of gain, time constant, and damping factor of second-order processes, identification of the open-loop and closed-loop step response to step and ramp changes in input for simple oscillations and multiphase-process processes, approximations of model systems for both first- and second-order processes with dead-time through experimental evaluation; analysis of instrumentation characteristics and transfer functions; tuning and optimization of feedback control parameters (P, PI, and PID) system identification through frequency response methocor methods; determination of system stability, and development of feedforward control strategies.

The laboratory is set up so that the experimental arrangements are simple enough in design to be easily understood yet complex enough to give students an appreciation for system characteristics inherent in industrial processes (i.e., leaky time lags, error in parameter estimation).

Graduate Facilities and Laboratories

To support and develop research activities, the department offers a wide variety of facilities for research equipment both within and available to the department in the library.

Computer Facilities

The departmental computer facilities contain a variety of graphics terminals, printers, and microcomputers. The department computer center is the University's Weeg Computing Center, which makes available these computer systems: IBM 360, IBM 4331, PDP-14, PDP-9, PDP-12, and a VAX 11/780. They also provide access to the college's Computer-Aided Engineering Laboratory.

The department also is connected to the Iowa Computer-Aided Engineering Network, which includes Apple work stations augmented with Apple Macintosh personal computers. In addition, the department has access to the University's central mainframe facility in high-speed vector computation. This facility has ENHANCE Multics and Alliant FX-8 minicomputers and provides nodes for general access for many faculty and graduate students.

Catalysis and Reaction Engineering Facilities

A variety of equipment is available for the study of catalysis. Techniques currently available include chemisorption and physisorption (RET), microbalance, mass
spectrometer system, mercury-polarimetry, gas chromatography, laser-transform infrared spectrometry, gas-diffusion; scanning electron microscopy(SEM), transmission electron microscopy(TEM), a variety of reactor systems including a pilot reactor, column reactor-separator for biochemical catalysis, a slurry reactor, and catalyst preparation facilities including radiofrequency (RF) sputtering, metallic cluster formation, and glove box system. Also available in Laboratory facilities such as the Iowa Laser Facility, with a variety of quantum-electron laser instrumentation, and the High-Field Nuclear Magnetic Resonance Facility.

Materials Characterization Facilities
Facilities include a variety equipped laboratory for the characterization of powders and particulates. The laboratory contains a variety of size and morphology instruments including a Clustereamber BET Surface Area Analyzer, a Micron/Pycnometer for measuring powders density, an Autocar MerckMercury Perimeter, a Microvickers Stryker, a DSi, EIS, Eleni, and Cavius Counter particle counters and etc.; and a Shape Analysis for particulate image analysis for morphological and texture determination.

Other facilities include sampling devices, devices for characterizing bulk properties: various mixers, grinders, and sizing equipment; optical microscope: scanning: electron microscopy; an emission: laser: recurring; mounting and preparing equipment; a 1-meter spectrometer and an adapter for the production of particulate materials. The laboratory also contains a fully controlled environment for the determination of dust explosibility and a Brasil and Naper laser: fiber: acoustic: analyzer. In addition, there is access to the University's Elective Probe Microanalysis and University Electron Microscopy.

There are also five facilities available to study microscopic material. These techniques include and open: by dynamic: effects: and: characterization: crystal: growth: water: preparation: and: etching: techniques. In addition, the Hybrid Microelectronics Laboratory in the electrical and computer engineering department provides expertise in semiconductor microchip: and: sub-assembly manufacturing, including vacuum deposition, a Cadee: sputtering: and: photolithography: a computer: and: a variety of electronic: testing: instruments.

Separation and Bioseparation Processes
Equipment available for the study of separation processes includes a large-scale, continuous rotating, modular bed electrophoresis column, a packed-bed electrophoresis system; a Novo-Dynep 3000 HPLC system; an Amicon DC-30 ultracentrifuge; a large-scale hollow fiber and spiral wound membrane pilot system; and a measurement apparatus, immobilized reactor separators; and facilities for the fabrication of membranes. The laboratory is supported by additional gas and liquid chromatography, a Parkin-Elmer UV/Vis scanning spectrophotometer, a computerized data acquisition system, and other analytical equipment. The Laboratory also has pilot plant equipment for the study of filtration, distillation, and reaction, and other bioreactor processes. Future plans include installation of capillary electrophoresis, reverse osmosis, and pilot-scale flow-through liquid chromatography systems.

Biochemical Engineering and Applied Biotechnology
Facilities in the Biochemical Engineering Laboratory include a thermostatted incubated bioreactor and a filter-sterilized fully controlled biocatalyst gas and liquid chromatograph, a UV/Vis spectrophotometers, centrifuges, carbon dioxide incubators, Cell II: safety cabinets, microscopes, Coulter particle counter, rotors shaker, autoclave: and: gel electrophoresis equipment, and analytical computers. Through collaborative research agreements, graduate students also have access to the electron microscopy facility, xerography/leaser culture facility, flow cytometry and cell sorting facility, mass spectrometry facility, recombinant DNA research facility, protein structure facility, and the large-scale fermentation facility.

Laboratory of Applied Biotechnology
The Laboratory of Applied Biotechnology is funded in the area of enzyme immobilized whole cells in analytical polymer and biotechnology. This laboratory occupies a 1500-square foot in the Chemistry/Biology Building and contains two analytical LC/MS (equipped with a photodiode array and reductive alkyl photo detection), a preparative HPLC, two gas chromatographs (with FID and ECD detection), a florentine microscope for radioactivity measurement, an optical polarimeter, two rotatory evaporators, a low-pressure Phoenix liquid chromatography device with fraction collector, two UV/Vis-scanning spectrophotometers, an spectrophotometer, four temperature-controlled orbital shakers, several large-scale enzyme reactors, a Fisher-Wiener stirrer, an ultrafiltration system for protein separation, a waterpurification system, two analytical digital balances and a basing digital balance, a cold box, refrigerators, and freezer, a formol centrifuge and two RCRs, and a freezer dryer.

Specialties
2.02 Cooperative Education/Training Assignment: Chemical Engineering

Chemical engineering students may participate in the Cooperative Education Program register for this course during spring and fall semesters. Applications must be received by January 10th for fall registration or August 10th for spring registration.

2.03 Project CoLaboratory
A thorough knowledge of the industrial processes is important for the student to develop a better understanding of the chemical engineering discipline. This course is designed to provide an overview of the chemical engineering field and to introduce the students to the industrial processes involved.

2.04 Process Chemistry
An understanding of industrial processes and the design of chemical plants is essential for chemical engineers. This course covers the principles of chemical plant design and introduces the student to the analysis and synthesis of chemical processes.

2.05 Chemical Engineering Thermodynamics
An in-depth understanding of the principles of chemical engineering is essential for chemical engineers. This course covers the principles of chemical engineering and introduces the student to the analysis and synthesis of chemical processes.

2.06 Chemical Engineering Laboratory
Laboratory experiments to illustrate and reinforce the principles of chemical engineering are conducted. The laboratory equipment and techniques are used to provide hands-on experience with the chemical engineering concepts.

2.07 Chemical Engineering Laboratory
The laboratory experiments are designed to illustrate and reinforce the principles of chemical engineering. The laboratory equipment and techniques are used to provide hands-on experience with the chemical engineering concepts.

2.08 Professional Seminar: Chemical Engineering
The seminar provides an opportunity for chemical engineering students to discuss their work and to share their experiences with other chemical engineering students.

2.09 Individual Investigation: Chemical Engineering
The individual investigation is an opportunity for chemical engineering students to conduct their own research and to develop their own research projects.

2.10 Chemical Engineering Internship Program
The internship program provides an opportunity for students to gain practical experience in the chemical engineering field.

2.11 Laboratory Methods for Chemical Engineering
This course covers the fundamental methods and techniques used in chemical engineering laboratory experiments.

2.12 Analytical Methods for Chemical Engineering
This course covers the fundamental methods and techniques used in chemical engineering laboratory experiments.

2.13 Biochemical Engineering
This course covers the fundamental methods and techniques used in biochemical engineering laboratory experiments.

2.14 Biochemical Engineering Laboratory
This course covers the fundamental methods and techniques used in biochemical engineering laboratory experiments.
CIVIL AND ENVIRONMENTAL ENGINEERING

Chae-Gun F. Pae, Professor
Jong S. An, Jarr K. Paye, Assistant
Allen T. Chopin, David Fricke, Assistant
Jong S. An, Forest M. Hulsh, Education C. James
Jaek Lee, Assistant
John F. Kennedy, Donald H. McNeal, Associate
Jacqui Chuk-Stra, Gregory F. Ploshay, Assistant
Robert E. Slowinski, Assistant
Associate professors: M. Aggarwal, A. Aditya, Robert
Patricia, Kristin F. Grootkins, James W.
Baker, Richard L. Valentine, Frank K. Walrath
Assistant professors: Cheryl Coonrad, Nacho F.
Kagawa, Per H. Krone, William A. Morse

Architecture: University of Illinois

Undergraduate Program

Civil engineering courses build on the Civil 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, hydraulic engineering, 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.

Freshmen Year

<table>
<thead>
<tr>
<th>Subject</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>410 Principles of Chemistry I</td>
<td>3 cr.</td>
</tr>
<tr>
<td>22M/35 Engineering Calculus I</td>
<td>4 cr.</td>
<td></td>
</tr>
<tr>
<td>575 Engineering I</td>
<td>3 cr.</td>
<td></td>
</tr>
<tr>
<td>*Humanities or social science elective</td>
<td>3 cr.</td>
<td></td>
</tr>
<tr>
<td>101 Rhetoric</td>
<td>3 cr.</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>17 cr.</td>
<td></td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Subject</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>416 Introduction to Chemistry I</td>
<td>2 cr.</td>
<td></td>
</tr>
<tr>
<td>22M/35 Engineering Calculus II</td>
<td>4 cr.</td>
<td></td>
</tr>
<tr>
<td>22M/40 Matrix Algebra for Engineers</td>
<td>2 cr.</td>
<td></td>
</tr>
<tr>
<td>29-19 Introductory Physics I</td>
<td>4 cr.</td>
<td></td>
</tr>
<tr>
<td>576 Engineering II</td>
<td>3 cr.</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>15 cr.</td>
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</tr>
</tbody>
</table>

Sophomore Year

<table>
<thead>
<tr>
<th>Subject</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td>22M/42 Vector Calculus for Engineers</td>
<td>3 cr.</td>
</tr>
<tr>
<td>29-18 Introductory Physics II</td>
<td>4 cr.</td>
<td></td>
</tr>
<tr>
<td>757 Statics</td>
<td>2 cr.</td>
<td></td>
</tr>
<tr>
<td>757-9 Thermodynamics I</td>
<td>3 cr.</td>
<td></td>
</tr>
<tr>
<td>*Humanities or social science elective</td>
<td>3 cr.</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14 cr.</td>
<td></td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Subject</th>
<th>Courses</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>22M/41 Differential Equations for Engineers</td>
<td>3 cr.</td>
<td></td>
</tr>
<tr>
<td>571-15 Dynamics</td>
<td>3 cr.</td>
<td></td>
</tr>
<tr>
<td>571-15 Materials Science</td>
<td>3 cr.</td>
<td></td>
</tr>
<tr>
<td>571-15 Mechanics of Deformable Bodies</td>
<td>3 cr.</td>
<td></td>
</tr>
</tbody>
</table>

Graduate Programs

The graduate program in civil and environmental engineering at both the M.S. and Ph.D. levels prepares students for professional careers and further study. The principal areas of concentration are environmental engineering and science: environmental hydrology and water resources, structures, mechanics, and materials and transportation.
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, and processes for water quality improvement, pollution control, and solid and hazardous waste management. Interdisciplinary specialization and study is conducted with programs including the Iowa Institute of Hydraulic Research, the Center for Global and Environmental Research, fax Center for Health Effects of Environmental Contamination and the Departments of Chemical Engineering, Geography, Geology, Microbiology, and Preventive Medicine and Environmental Health. New areas of interdisciplinary focus include groundwater contamination, biotechnology, global climate change, and hazardous substances.

Hydraulics, Hydrology, and Water Resources

The hydraulics, hydrology, and water resources curricula are associated with the Iowa Institute of Hydraulic Research, a research organization that is world renowned. The senior staff members of the institute are professors in the program, they lecture about half of their time to teaching. The institute offers unique opportunities for students to participate actively in the research, analysis, and design aspects of real world problems. Considerable attention is given to the use of digital computers in mathematical modeling and in the acquisition and processing of data. The Computational Laboratory for Hydrology and Water Resources, with its high-speed computer facilities and advanced graphics and communication software, serves the hydraulics and water resources curricula.

Structures, Mechanics, and Materials

The structural, mechanics, and materials curricula are directed primarily toward computer-aided structure design, optimization, and mechanics of materials. Special emphasis is given to the areas of structural optimization, computational methods, concrete and prestressed concrete structures, soil behavior, and constitutive equations for metals and geometrical materials. Course work and research in structural design and optimization, dynamics of structures, finite element techniques, soil mechanics and foundations, concrete and masonry, and design principles of materials are available.

Transportation

The transportation curriculum includes work in planning, design, construction, and operation of transportation systems and facilities. Cooperative relationships exist with the graduate programs in urban and regional planning and transportation studies. Cooperative research is conducted with the Public Policy Center, the Center for Urbanization and Design Optimization, and the DOT Midwest Transportation Center. See "Urban and Regional Planning" and "Transportation Studies" in the College of Liberal Arts section of the Catalog.

Master of Science

The Master of Science programs in civil and environmental engineering are designed to permit further concentration in the areas or specializations of the student's choice. Graduates are placed in advanced technical positions in industry, consulting firms, or government. They may continue their graduate study, if approved, for a M.S. degree. Additional semester hours are required in the thesis environmental engineering curriculum.

Students, with the approval of their advisor, develop a plan of study that satisfies special requirements of their chosen curriculum. All degree candidates are expected to have a minimum grade-point average of 3.00. They must pass an oral examination and, if so required, a written examination.

Doctor of Philosophy

The doctoral degree is granted primarily on the base of achievement, rather than on a prescribed course of study. Requirements for semester hours of course work vary among the specialty areas. Candidates usually need at least three years of full-time work beyond the baccalaureate degree, one year of which is devoted to the preparation of a dissertation that contributes to knowledge in the field. In some specialty areas, a qualifying examination is required for students who have not earned an M.S. in an approved curriculum. The Ph.D. program requires a written dissertation that has been submitted to candidacy for the degree. This examination is usually taken when virtually all of the student's course work has been completed.

The programs culminate in a final examination, in which candidates must successfully defend their dissertation. Doctoral candidates are expected to maintain a grade-point average of 3.20 throughout the doctoral program.

The program also cooperates with related interdisciplinary doctoral programs with the program in applied mathematical sciences (see the "Division of Mathematical Sciences" in the "Liberal Arts" section of the Catalog).

Admission

Each curriculum of the program is quite flexible and students may be admitted from any discipline of engineering as well as from the mathematical and basic sciences.

Applicants for the master's degree programs are expected to have a cumulative undergraduate grade-point average of at least 2.50. 3.00 is preferred. Admission is optional for the doctorate, the minimum grade-point average is 3.20 based upon previous graduate work. Applicants whose grade-point averages are slightly lower are invited to contact the department regarding admission possibility. A Graduate Record Examination General Test score of at least 1100 (verbal and quantitative) is recommended. Lower GRE General Test scores are considered with other evidence of academic promise (recommendation letters, grade-point average). GRE General Test scores are used in admission and financial aid decisions.

All applicants must meet the general admission requirements of the Graduate College (see "Graduate College" section of the Catalog).

Financial Aid

A significant number of research assistantships are available on a variety of research projects, and a limited number of teaching assistantships. Selection of recipients is usually based on academic achievements and research interest.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core

The freshman engineering course 15.5, Engineering Core, includes an introduction to the Iowa Computer-Aided Engineering Network (ICAEN), which is described under "College Facilities." Students in the course learn word processing on Macintosh microcomputers and elementary graphics using Apollo work stations. Junior students in the course Principles of Design I make extensive use of the computer hardware and software available through ICAEN.

For information about laboratories affiliated with civil engineering programs, see the section for each of the departments.

Required and Elective Course Laboratories

- 53.50 Soil Mechanics (3.5 hours). Equipped for determining the classification, load-bearing characteristics, shear-stress properties, and strength of soils.
Graduate Facilities and Laboratories

Environmental Engineering and Science Laboratories
Research in environmental engineering is conducted in the department's Charles P. Morgan Sanitary Engineering Research Laboratory at the 3-Area Municipal Wastewater Treatment Plant, at the Environmental Engineering Laboratory of the University's Water Treatment Plant, and in the Environmental Research Facility at the Engineering Research Facility.

The Morgan laboratory is devoted to research activities in the wastewater treatment area. It includes a modern wet waste treatment facility, a wastewater treatment area, and a weathered or 10,000 gallon per day wastewater treatment system. The laboratory is equipped for both routine and advanced analytical analysis of water and provides space for bench and pilot scale studies. The water 4 million gallons per day wastewater system is especially designed to enable the investigation of treatment processes for study without interference with the performance and safety of the University.

The Environmental Research Laboratory at the Engineering Research Facility consists of 2,500 square feet of space for water chemistry and microbiology of groundwater and hazardous waste. The laboratory is affiliated with the Center for Health Effects of Environmental Contaminants, a cooperative unit of the College of Engineering and Medicine, and the EPA Hazardous Substances Research Center.

Hydraulics, Hydrology, and Water Resources Laboratories
The teaching and research functions of the department are closely connected to the research and contractual activities of the Iowa Institute of Hydraulic Research and the Computational Laboratory for Hydrodynamics and Water Resources.

The institute houses one of the most modern research facilities in the world, including a 280-foot test tank, several hydraulic flumes and wind tunnels, a dispersion furnace, a water cabinet with two low-water quality facilities for simulation of ice phenomena, an environmental hydraulic flume for modeling of astrophysical flows, a refrigerated wind tunnel, a computer-controlled data handling system, and a 3-D laser doppler anemometer for micro-scale velocity measurements.

The Computational Laboratory for Hydrodynamics and Water Resources utilizes an Apollo ENIAC super-computer (located by NSF), several Apollo high-speed work stations, and several terminals and peripherals, including a main in the University's mainframe, a super-computer, and a variety of other high-speed workstations.

The laboratory is managed by a full-time data systems coordinator.

Structures, Mechanism, and Materials Laboratories
As an optimal design laboratory, a plasticity laboratory, a soils laboratory, a structural testing laboratory, and an ice engineering research laboratory are available for teaching and research. The optimal design laboratory has a state-of-the-art network of Apollo work stations and other peripheral equipment. It is connected to the current computer-aided design methods for design optimization of complex structural systems.

The structures, soils, and plasticity labs are equipped for the determination of physical and mechanical properties of metals, concrete, soils, and plastics. Equipment includes a computer-controlled MTS axial-torsional test system, universal testing machine, and a stress-machine.

The ice engineering research lab has a 1,000-ton MSW test system with a state-of-the-art data acquisition system. There is also a Thomas Gibson testing machine, two ice tanks, a drilling machine (in a cold room for prepreparation of ice samples), and a variety of other equipment to allow testing of the mechanical properties of ice at the core of ice-structure interaction processes.

Courses

Special

31600 Environmental Education Training

2169 Engineering and Environment, Engineering, Environmental Science, and Environmental Engineering. Field seminars designed by the Cooperate for Environmental Protection and Research in the field, including苍白.

2170 Computer in Environmental Engineering

3170 Water quality and waste treatment systems, environmental microbiology, waste and pollution control, environmental protection, and environmental science.

2180 Environmental Engineering

3181 Engineering and Environment, Engineering, Environmental Science, and Environmental Engineering. Field seminars designed by the Cooperate for Environmental Protection and Research in the field, including苍白.

31900 Project and Management in Civil Engineering

3195 Engineering and Environment, Engineering, Environmental Science, and Environmental Engineering. Field seminars designed by the Cooperate for Environmental Protection and Research in the field, including苍白.

320 Satellite Environmental Science

3201 Environmental Science and Environmental Engineering, Engineering, Environmental Science, and Environmental Engineering. Field seminars designed by the Cooperate for Environmental Protection and Research in the field, including苍白.

3202 Environmental Science and Environmental Engineering, Engineering, Environmental Science, and Environmental Engineering. Field seminars designed by the Cooperate for Environmental Protection and Research in the field, including苍白.

3203 Environmental Science and Environmental Engineering, Engineering, Environmental Science, and Environmental Engineering. Field seminars designed by the Cooperate for Environmental Protection and Research in the field, including苍白.

3204 Environmental Science and Environmental Engineering, Engineering, Environmental Science, and Environmental Engineering. Field seminars designed by the Cooperate for Environmental Protection and Research in the field, including苍白.

3205 Environmental Science and Environmental Engineering, Engineering, Environmental Science, and Environmental Engineering. Field seminars designed by the Cooperate for Environmental Protection and Research in the field, including苍白.

3206 Environmental Science and Environmental Engineering, Engineering, Environmental Science, and Environmental Engineering. Field seminars designed by the Cooperate for Environmental Protection and Research in the field, including苍白.
Transportation Technology

3.49 Transportation Planning
3.50 Transportation Safety

Hydraulics, Hydrology, and Water Resources

S.51 Hydraulics

S.52 Hydrology

S.53 Hydrology and Water Resources

S.54 Hydrology and Water Resources

S.55 Hydraulics and Water Resources

S.56 Water Resources Engineering

S.57 Experimental Hydrology

S.58 Experimental Hydraulics

S.59 Hydrology and Water Resources

S.60 Hydraulics and Water Resources

S.61 Hydraulics and Water Resources
From its early beginnings of electrical power from generators, control, and electrical engineering has evolved through telephone, radio, and television to microelectronics and modern computers.

Electrical engineering is concerned with the generation, measurement, transmission, processing, and control of electrical energy and information in the form of electrical signals. The important role of the digital computer in these activities is emphasized by the program titles, electrical and computer engineering.

Graduates of the program are employed in semiconductor, aerospace, telecommunication, radio, television, computer, and power industries. The electrical engineer works in design, development, manufacturing, sales, market analysis, consulting, field service, and management. The employment outlook for the foreseeable future is quite favorable.

**Undergraduate Program**

The electrical and computer engineering program provides a strong background in basic electrical and computer engineering subjects, physics, and mathematics and allows for concentration in several areas through five technical elective courses usually taken in the senior year. Students can concentrate in one or more areas chosen from mathematics, 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.*

**15:91 Professional Seminar: Electrical Engineering must be taken once in the junior year and once in the senior year.

**Freshman Year**

First Semester

- 41:13 Principles of Chemistry I 4 s.h.
- 10:31 Introduction to Engineering 3 s.h.
- 22:23 Engineering Calculus I 4 s.h.
- 57:16 Engineering I 3 s.h.
- **Humanities or social science elective** 3 s.h.
- Total 17 s.h.

Second Semester

- 41:16 Principles of Chemistry Lab I 2 s.h.
- 22M:63 Engineering Calculus II 4 s.h.
- 32D:40 Matrix Algebra for Engineers 2 s.h.
- 25:17 Introductory Physics I 4 s.h.
- 57:16 Engineering II 3 s.h.
- Total 15 s.h.

**Sophomore Year**

First Semester

- 22M:41 Differential Equations for Engineers 3 s.h.
- 29:18 Introductory Physics II 4 s.h.
- 57:18 Modern Physics 3 s.h.
- 57:11 Electrical Circuits 3 s.h.
- 57:19 Thermodynamics I 3 s.h.
- Total 15 s.h.

Second Semester

- 22M:42 Vector Calculus for Engineers 3 s.h.
- 57:17 Linear Systems Analysis 3 s.h.
- 57:17 Computers in Engineering 3 s.h.
- 57:18 Principles of Electronic Instrumentation 4 s.h.
- **Humanities or social science elective** 3 s.h.
- Total 16 s.h.

**Junior Year**

First Semester

- 225:39 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
- 55:21 Introduction to Digital Design 3 s.h.
- 55:48 Electronic Circuits 3 s.h.
- 55:42 Signal and Systems 3 s.h.
- **55:10 Professional Seminar: Electrical Engineering** 0 s.h.
- **Humanities or social science elective** 3 s.h.
- Total 15 s.h.

Second Semester

- 55:23 Introduction to Software Design 3 s.h.
- 55:30 Communication Systems 3 s.h.
- 55:46 Control Systems 3 s.h.
- 55:40 Modern Electronic Circuits I 3 s.h.
- 55:33 Principles of Electrical Engineering Design I 3 s.h.
- Total 15 s.h.

**Senior Year**

First Semester

- 55:72 Electrical Engineering Materials and Science 3 s.h.
- 55:80 Principles of Electrical Engineering Design II 2 s.h.
- **55:51 Professional Seminar: Electronic Engineering** 0 s.h.
- Technical electives (see "Technical Electives" below) 9 s.h.
- **Humanities or social science elective** 3 s.h.
- Total 17 s.h.

Second Semester

- 29:03 Modern Physics 3 s.h.
- 55:91 Principles of Electrical Engineering Design III 2 s.h.
- Technical electives (see "Technical Electives" below) 9 s.h.
- **Humanities or social science elective** 4 s.h.
- Total 16 s.h.

**Technical Electives**

Technical electives must include at least two of the following.

- 55:35 Computer Architecture and Computer Organization 3 s.h.
- 55:68 Power Systems Analysis 3 s.h.
- 55:17 Digital Logic Systems 3 s.h.
- 55:33 Introduction to VLSI Design 3 s.h.
- 55:26 Introduction to Computer-Based Systems 3 s.h.
- 55:23 Testing Digital Logic Circuits 3 s.h.
- 55:23 Introduction to VLSI Design 3 s.h.
- 55:26 Power Electronics 3 s.h.
- 55:18 Linear and Digital Electronics 3 s.h.
- 55:14 Digital Integrated Circuits 3 s.h.
- 55:16 Digital Signal Processing 3 s.h.
- 55:18 Digital Image Processing 3 s.h.
- 55:15 Communication Theory 3 s.h.
- 55:16 Feedback Control Theory 3 s.h.
- 55:26 Computer and Control Systems 3 s.h.
- 55:18 Introduction to Robotics 3 s.h.
- 55:17 Solid State Physical Electronics 3 s.h.
- 55:16 Optical Signal Processing 3 s.h.
- 55:22 Principles of Digital II 3 s.h.

**Graduate Programs**

Electrical and computer engineering offers curricula leading to the Master of Science and Doctor of Philosophy degrees. Thesis and nonthesis M.S. programs are available; either may precede Ph.D. studies. Excellence in scholarship and research is stimulated by close contact with the faculty throughout the period of graduate study and through programs tailored to individual needs.

Students select an advisor and, with the advisor, design an individual program bounded only by a few broad guidelines imposed by the Graduate College and by the program. Close interdisciplinary ties between departments exist both within and outside the college, especially with the Departments of Internal Medicine, Radiology, Physics, Computer Science, Mechanical Engineering, and Bio-medical Engineering. The principal areas of concentration are waves and materials, computer systems, signal and image processing, and control systems and robotics. Each is briefly described here.

**Research**

**Waves and Materials**

Pulsama physics, electro-optics, nonlinear optics, optical signal processing, and acoustics. Investigations utilize specialized laboratories in both the Engineering Building and Van Allen Hall. Collaborative research with the physics department is directed toward topics in acoustics, plasma and electron physics of a theoretical as well as experimental nature. These topics include plasma confinement and stability and nonlinear wave phenomena, such as quantum and solitons. A plasma physics...
laboratory is available to support this activity. An electro-optic laser laboratory and an ultrasonic facility are used to conduct graduate research in the area of optical optics, acousto-optics and nonlinear wave phenomena.

In the area of optical signal processing, projects involve the use of optical fibers and various light source lasers to build special-purpose analog processors for parallel computation and signal processing. A small annular optical processor is being developed in the optical processing laboratory.

Computer Systems

Research emphasis is directed toward design of highly reliable computer systems, distributed computing, parallel processing, and reconfigurable computers. Areas of interest include fault-tolerant computing, applications of large-scale distributed and parallel processing, coding, VLSI design, computer graphics, optical computers, and image processing.

This work is supported by departmental facilities including several supercomputer systems and a number of graphics workstations, as well as through a network connection to college and University facilities, including those at the Oak Ridge National Laboratory High-Speed Computing Facility. Network access to National Supercomputer Centers also is used.

Current research includes design of easily testable, reprogrammable, large-scale integrated circuits, parallel CAD algorithms for VLSI, applications of large-scale parallel processing and graphics for real-time rendering, performance evaluation of parallel computers, software tools for developing parallel and distributed programs, display of alphanumeric images, neural networks, and optical computing.

Signal and Image Processing

Cardiovascular signal and image processing, signal processing associated with speech and hearing, estimation theory, and adaptive signal processing currently are active areas. Collaborative efforts involve the Department of Biomedical Engineering and the College of Medicine. A digital signal processing laboratory and a cardiovascular image processing laboratory, the latter located in the cardiovascular center in The University of Iowa Hospitals, are available to support this research. In addition, the programs have included image processing, detection of cardiac motion, efficient coding and transmission of speech, speech processing aids for the hearing impaired, speech detection, and analysis and design of efficient adaptive signal processing algorithms for speech processing and communications problems.

Control Systems and Robotics

Current research emphasizes optimal control, learning and adaptive control, multi-rate robot manipulation, and sensor-based robots. Work also is being done in estimation, identification, and robust control for linear and nonlinear dynamic systems. A modern control systems research laboratory supports this effort. Other topics include applications of stochastic processes to problems in control and communication systems such as special estimation, identification, adaptive filtering and control for stochastic dynamical systems.

Master of Science

There are two M.S. degree options: with and without thesis. The thesis option requires 30 semester hours of course work, including at least 12 semester hours in an approved list of courses in electrical and computer engineering. The nonthesis option requires 36 semester hours of course credit with a minimum of 18 semester hours from an approved list of courses in electrical and computer engineering. The M.S. degree in electrical engineering is not limited to include courses required for electrical engineering undergraduate programs. With this, up to 8 semester hours of the 30 may be research credit. At least 6 semester hours of credit must be earned in E4 190 Research in Electrical and Computer Engineering. M.S. Thesis by students in the Thesis option. Without thesis, a total of not more than 3 semester hours of independent study credit may be included in the required 30-semester-hour course load.

Candidates for the master's degree in electrical and computer engineering also must successfully complete a final examination, which is conducted by a committee of at least three faculty members. One part of this examination is for thesis candidates must consist of an oral defense of the thesis. At the time of graduation, candidates for the master's degree must have acquired a cumulative grade-point average of 3.00 or higher.

Doctor of Philosophy

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 (not thesis or 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 research credit.

Financial Aid

A number of fellowships, traineeships, scholarships, and industrial grants are available to graduate students who qualify. These are awarded on a competitive basis.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core

Electrical and computer engineering provides core instruction for the colleges in systems, electrical circuits, and electronics.
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, social sciences, and humanities. Advanced courses include specialty courses in manufacturing operations and "soft" human factors (ergonomics), management, economics and information systems, production, quality control, and operations research.

**Industrial Engineering Curriculum**

**Freshman Year**

**First Semester**

4-13 Principles of Chemistry I 3 s.h.
Kinesior (102 or 103) 4 s.h.
22N35 Engineering Calculus I 4 s.h.
57-5 Engineering I 3 s.h.
Humanities elective (see below) 3 s.h.
Total 17 s.h.

**Second Semester**

4-16 Principles of Chemistry Laboratory I 2 s.h.
22N35 Engineering Calculus II 2 s.h.
22M30 Matrix Algebra for Engineers 4 s.h.
28-17 Introductory Physics I 4 s.h.
57-6 Engineering II 3 s.h.
Total 15 s.h.

**Sophomore Year**

**First Semester**

22N41 Differential Equations for Engineers 3 s.h.
25-18 Introductory Physics II 4 s.h.
57-1 Thermodynamics I 3 s.h.
51-14 Engineering Economy 3 s.h.
Total 15 s.h.

**Second Semester**

225-30 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
31-1 General Psychology (social science elective) 4 s.h.
57-8 Electrical Circuits 3 s.h.
57-13 Materials Science 3 s.h.
Economics elective (see below) 3 s.h.
Total 16 s.h.

**Junior Year**

**First Semester**

56-31 Manufacturing Processes 3 s.h.
56-142 Human Factors Engineering 3 s.h.
57-17 Computers in Engineering 3 s.h.
57-21 Principles of Design I 3 s.h.
Mathematics-statistics elective (see below) 3 s.h.
Engineering science elective (see below) 3 s.h.
Total 18 s.h.

**Second Semester**

56-01 Professional Seminar: Industrial Engineering 3 s.h.
56-131 Manufacturing Systems 3 s.h.
56-140 Design of Work Methods 3 s.h.
57-22 Principles of Design II 3 s.h.
57-17s Operations Research 3 s.h.
Technical elective (see below) 3 s.h.
Total 15 s.h.

**Senior Year**

**First Semester**

31-115 Psychology in Management (social science elective) 3 s.h.
56-015 Technological Seminar: Industrial Engineering 1 s.h.
56-119 Information Systems Design 3 s.h.
56-165 Production Systems 3 s.h.
Technical elective (see below) 3 s.h.
Total 16 s.h.

**Second Semester**

56-015 Professional Seminar: Industrial Engineering 1 s.h.
56-165 Operational Systems Design 4 s.h.
56-162 Quality Control and Engineering Statistics 3 s.h.
Humanities elective (100 level) 3 s.h.
Technical elective (see below) 3 s.h.
Total 16 s.h.

**Economics Electives**

Students may select from the following:

- 66-100 Price, Employment, and Production Theory 3 s.h.
- 66-103 Microeconomics 3 s.h.
- 66-11 Labor Economics 3 s.h.
- 66-173 Managerial Economics 3 s.h.

**Humanities and Social Science Electives**

Those must be selected to satisfy the College of Engineering requirements. Note: social science electives are highly recommended. An advisory guide for humanities sequences may be obtained from the office of the dean.

**Mathematics and Statistics Electives**

- 235-45 Vector Calculus for Engineers 3 s.h.
- 235-72 Elementary Numerical Analysis 3 s.h.
- Advanced statistics course (with advisor's approval) 3 s.h.

**Engineering Science Electives**

Students may select one of these:

- 57-100 Dynamics 3 s.h.
- 57-12 Linear Systems Analysis 3 s.h.
- 57-13 Engineering Biological Fluids 3 s.h.
- 57-165 Principles of Electronic Instrumentation 4 s.h.
- 57-129 Mechanics of Deformable Bodies 3 s.h.
- 57-26 Materials of Fluids and Transient Processes 4 s.h.

**Technical 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 core elective and 3 semester hours with consent of advisor.

- 56-09 Individual Investigation: Industrial Engineering 3 s.h.
- 56-132 Introduction to Industrial Robotics 3 s.h.
- 56-138 Artificial Intelligence in Manufacturing I 3 s.h.
- 56-143 Advanced Human Factors Engineering 3 s.h.
- 56-145 Advanced Managerial Psychology 3 s.h.
- 56-153 Microcomputer Applications 3 s.h.
- 56-152 Engineering Administration I 3 s.h.
- 56-133 Quantitative Methods Analysis 3 s.h.
- 56-156 Engineering Economic Decisions 3 s.h.
- 56-153 Quality Engineering I 3 s.h.
- 56-164 Reliability Theory and Practice 3 s.h.
- 56-175 Regression Analysis 3 s.h.
- 56-176 Image Processing and Computer Simulation 3 s.h.
- 56-195 Contemporary Topics in Industrial Engineering 3 s.h.

**Specialization in Quality Engineering**

Quality engineering is the specialization in the engineering profession that is concerned with the design, manufacture, delivery, maintenance, and use of products and services over their life cycles. Since quality is the essence of these products or services to meet 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 associated costs such as engineering, development, and manufacture of products and services.

The background requirements of quality engineering are similar to those of industrial engineering. Consequently, a specialization in quality engineering can be obtained through the student's selection of elective courses in the industrial engineering program. For the quality engineering specialization, 12 semester hours are required from the following list.

- 56-151 Engineering Administration I 3 s.h.
- 56-163 Quality Engineering I 3 s.h.
- 56-164 Reliability Theory and Practice 3 s.h.
- 56-176 Regression Analysis 3 s.h.
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 the background, career objectives, and academic performance. The curriculum is highly flexible, the goal is academic excellence.

There are five principal areas of academic focus in the graduate program in industrial engineering, manufacturing, human factors, engineering-organizational, information and engineering management, quality and production control, and operations research and applied statistics.

Manufacturing courses, designed by the 26 series, delve into selecting appropriate manufacturing materials, planning processing operations, developing control strategies, and designing products and manufacturing systems. Contemporary topics in computer-aided planning and design, computer-controlled machining, and applications of artificial intelligence in manufacturing are covered.

Human factors studies concentrate on applying the physiological, psychological, and sociologic sciences to problems in manufacturing and service systems. These problems concern human-plant and human-man organizations to the people who perform those jobs within the organization as well as managing and motivating those people. Classes in the 40 series cover these topics.

Informatory and engineering management studies concentrate on computerized information systems, computer-aided design of supporting software. Other topics include engineering administration and engineering economics. This area is covered by courses in the 50 series.

The quality and production control area emphasizes facilities design, quality improvement, reliability, and production control. This area of concentration is covered by courses in the 60 series.

Studies in operations research and applied statistics concentrate on mathematical, statistical, and computational science for modeling, analyzing, and optimizing systems. Various methodologies in this area include mathematical programming, heuristic optimization, statistical analysis, and digital systems simulation. Courses in the 70 series cover these topics.

Most graduate students tend to focus on one of these specialty areas, while others distribute their studies over more than one area.

Students in the graduate program participate in research in the areas of their academic concentration. Ongoing manufacturing research focuses on flexible manufacturing systems, design, optimum control of processing systems, adaptive manufacturing control, parameter robust control, and automatic pattern recognition of parts. Current research in human factors engineering/geometrics consists of investigating the effects of visual and auditory information on human information processing, performance-time statistics with cognitive tasks, the effects of aging on human performance. Other graduate research is directed to the use of digital simulation to achieve balance workloads, accident analysis, industrial inspection, computer-aided human problem solving, and techniques of ergonomic data collection and analysis.

Some research research in information and information management focuses on information retrieval, computer-integrated manufacturing, governmental reorienting, industrial cash flow analysis, strategic management, and economic resource analysis. Quality and production control research is currently focused on computer-aided layout and scheduling, materials handling systems, location and allocation of automated machines, on line expert systems in process control, and inventory record accuracy-assurance procedures.

Ongoing research in operations research and applied statistics is in the areas of optimization, expert systems in scheduling and dispatching, computer-aided random number generation, and the development of programming techniques for classification problems. Other research is directed toward extending the capabilities of computer graphics.

Master of Science

Two M.S. programs are available: thesis and non-thesis. Students considering eventual admission to a Ph.D. program should select the thesis option. It requires a minimum of 30 semester hours of graduate work, including at least 9 hours of graduate courses, a minimum of 8 semester hours of research, and a thesis. Students who select the non-thesis option complete a minimum of 26 semester hours of course work at the 600 or 700 level, including at least 9 hours at either the 600 level or at the 700 level with the designation "advanced" or "contemporary" in the course title.

Each student develops a tentative plan of study through consultation with his or her adviser. The final plan of study is reviewed by the student's examining committee and approved by the chairman of the graduate program's chair and the Graduate College dean.

Enrolling students in all programs need a background in computer programming, probability, statistics, and mathematics equivalent to that required in accredited undergraduate engineering programs. Both verbal and written skills in the English language are essential. Engineering management and human factors students will find psychology and engineering science to be very helpful. Compensatory course work may be required for students with nonengineering backgrounds.

Students are required to maintain a minimum grade point average of 2.00 on all graduate course work, both 300- and 400-level courses in this program. At the University of Iowa the minimum grade point average is 2.55 on all graduate course work taken at the University of Iowa. In addition, the student must complete a thesis.

Courses taken for the M.S. degree cannot be used for a Ph.D. degree. Students are encouraged to consult their individual university's academic regulations for the degree in question.

Admission

Applicants to and admission policies for the Master of Science in Industrial Engineering program are the same as for the Master of Science in Industrial Engineering program. Students are encouraged to consult their individual university's academic regulations for the degree in question.
status within two sessions of registration by attaining a grade-point average of at least 3.00 and gaining regular acceptance by the industrial engineering program. Otherwise, they are dismissed. Admissions are granted on the basis of faculty and other available resources.

Students with a B.S. degree may be admitted to an A.B.T.-accredited baccalaureate or a post-B.S. graduate program in any engineering discipline or in the mathematical and physical sciences with a minimum grade-point average of 2.00 and/or an acceptable GRE General Test score (typically at least 500 verbal, 700 quantitative). Applicants from outside the United States must meet equivalent requirements for regular admission as determined by The University of Iowa. Students also may be admitted from other science programs on a case-by-case basis.

Special Facilities and Laboratories

Engineering Core

Information about laboratories affiliated with the College of Engineering can be found in the College's sections for each of the other engineering departments.

Required and Elective Course Laboratories

Required Industrial Engineering courses are described below.

Computer Integrated Systems Laboratory

This facility has equipment that supports instruction in computer-aided design, computer-aided manufacturing, and computer-aided engineering; and exercises in project-based teaching. The laboratory equipment includes a variety of CAD and CAE systems, computer-aided manufacturing systems, and computer-aided design systems.

Computer Numerical Control (CNC) Machine Laboratory

Students gain hands-on experience in programming and operating a CNC lathe and an automated storage and retrieval system in this laboratory. CNC programs can be developed through the machine control keyboard or down loaded via RS-232C from a programming station in the CAM Laboratory. Research studies in the machining of various materials for different cutting tools and tooling systems are planned.

Future additions to the laboratory include a project for full-size CNC milling machine and additional test, measurement, and recording equipment to interface with the machine tools.

Manufacturing Processes Laboratory

This laboratory provides improved facilities and equipment for advanced metallurgical and ceramic processing. Students learn from mini-factory and microcomputer systems and are introduced to computer-aided materials science. The laboratory also serves as an introduction to computer-aided materials science, material science and engineering, and as an introduction to computer-aided materials science. The laboratory also serves as an introduction to computer-aided materials science, material science and engineering, and as an introduction to computer-aided materials science. The laboratory also serves as an introduction to computer-aided materials science, material science and engineering, and as an introduction to computer-aided materials science. The laboratory also serves as an introduction to computer-aided materials science, material science and engineering, and as an introduction to computer-aided materials science. 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The laboratory also serves as an introduction to computer-aided materials science, material science and engineering, and as an introduction to computer-aided materials science. The laboratory also serve...
56:126 Artificial Intelligence in Manufacturing
3 a'h
Senior lecture/teaching, component of knowledge-based systems, design of expert systems and implementing applications of knowledge-based systems in design of sensors, process-control systems and machine diagnostics. (Computer science and engineering, Mechanical Engineering and Computer Science, Includes computer science and engineering.) Prerequisite: 57:372 or 57:379.
56:301 Computational Management
3 a'h
56:307 Artificial Intelligence in Manufacturing
3 a'h
Senior project will be conducted; knowledge acquisition and verification, application of knowledge-based systems, design of expert systems and implementing applications of knowledge-based systems in design of sensors, process-control systems and machine diagnostics. (Computer science and engineering, Mechanical Engineering and Computer Science, Includes computer science and engineering.) Prerequisite: 57:372 or 57:379.

Human Factors/Ergonomics
56:100 Design of Work Methods
3 a'h
Principles of analysis and design required to integrate human factors into productive systems: emphasis on human performance measurement and its role in design: laboratory, plant and field testing; (Occupational safety engineering, Management Information Systems, Engineering Management and Computer Science, Includes computer science and engineering.) Prerequisite: 57:249 or 57:250.
56:103 Human Factors Engineering
3 a'h
56:143 Psychology in Management
3 a'h
Human behavior and management from a human relations and supervision perspective. (Industrial and Labor Relations, Management Information Systems, Engineering Management and Computer Science, Includes computer science and engineering.) Prerequisite: 57:372 or 57:379.
56:164 Advanced Managerial Psychology
3 a'h
Advanced study of human behavior and management from a human relations and supervision perspective. (Industrial and Labor Relations, Management Information Systems, Engineering Management and Computer Science, Includes computer science and engineering.) Prerequisite: 57:372 or 57:379.
56:165 Information and Engineering Management
6 a'h
Information systems design, implementation and computer-integrated information systems. (Industrial and Labor Relations, Management Information Systems, Engineering Management and Computer Science, Includes computer science and engineering.) Prerequisite: 57:372 or 57:379.
56:185 Occupational and Environmental Health
3 a'h
Environmental health and safety, competence in regulatory and management issues for occupational and environmental health. (Industrial and Labor Relations, Management Information Systems, Engineering Management and Computer Science, Includes computer science and engineering.) Prerequisite: 57:372 or 57:379.
56:187 Engineering Administration
3 a'h
Studies in engineering administration for engineers equipped with the knowledge and management skills needed to function in a business environment. (Industrial and Labor Relations, Management Information Systems, Engineering Management and Computer Science, Includes computer science and engineering.) Prerequisite: 57:372 or 57:379.
56:195 Quantitative Management Analysis
3 a'h
Quantitative management analysis for managers, emphasizing probability and basic statistical techniques: focus is on applications of linear and nonlinear models, analyzing computer programs, and analyzing systems and processes, emphasizing applications of model-building and computer software: emphasis on applications of model-building and computer software: emphasis on applications of model-building and computer software. Prerequisites: 57:280, 57:295, 57:372 and 57:379.
56:197 Engineering Economic Decision
3 a'h
56:200 Software Systems for Engineering Applications
3 a'h
Design and implementation of computer-based systems related to management and engineering problems: emphasis on systems that increase the productivity of engineers and business professionals in their role as managers and engineers. Prerequisite: 57:372 or 57:379.
56:203 Engineering Administration II
3 a'h
Continuation of 56:202, focusing on applications that emphasize the interaction between technical and managerial responsibilities. (Management Information Systems, Engineering Management and Computer Science, Includes computer science and engineering.) Prerequisite: 57:202.
56:210 Quality and Production Control
56:105 Operational Systems for Engineering Applications
3 a'h
56:211 Quality Assurance and Quality Control
3 a'h
56:212 Quality Engineering I
3 a'h
56:216 Statistical Quality Control
3 a'h
56:310 Community Service Learning
4 a'h
56:315 Student Research and Practice
3 a'h
56:409 Operations Research and Applied Statistics
56:101 Operations Research
3 a'h
56:142 Reliability Engineering
3 a'h

Quality and Production Control
56:105 Operational Systems for Engineering Applications
3 a'h
56:211 Quality Assurance and Quality Control
3 a'h
56:212 Quality Engineering I
3 a'h
56:216 Statistical Quality Control
3 a'h
56:310 Community Service Learning
4 a'h
56:315 Student Research and Practice
3 a'h
56:409 Operations Research and Applied Statistics
56:101 Operations Research
3 a'h
56:142 Reliability Engineering
3 a'h
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, 3260 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 a curricular structure.

**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 first four years are introduced in an orderly 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.

**Freshman Year**

- **First Semester**
  - 410: Principles of Chemistry I 3 s.h.
  - 315: Bacteriology 4 s.h.
  - 325: Introduction to Mechanical Calculus I 4 s.h.
  - 325: Introduction to Mechanical Calculus II 3 s.h.
  - Humanities or social science elective 3 s.h.
  - Total: 17 s.h.

- **Second Semester**
  - 416: Principles of Chemistry Lab I 2 s.h.
  - 225: Introduction to Engineering II 4 s.h.
  - 224: Materials and Practices for Engineers 3 s.h.
  - 224: Mechanical Physics I 4 s.h.
  - 224: Mechanical Physics II 3 s.h.
  - Total: 15 s.h.

**Sophomore Year**

- **First Semester**
  - 226: Analytical Calculus for Engineers 5 s.h.
  - 226: Analytical Calculus for Engineers II 4 s.h.
  - 517: Engineering Physics I 4 s.h.
  - 517: Thermodynamics I 3 s.h.
  - 517: Materials Science 3 s.h.
  - Total: 15 s.h.

- **Second Semester**
  - 224: Differential Equations for Engineers 3 s.h.
  - 517: Electromechanical Devices 3 s.h.
  - 517: Heat Transfer and Thermodynamics 3 s.h.
  - 517: Heat Transfer and Thermodynamics 3 s.h.
  - Total: 15 s.h.
A minimum of two electives from mechanical engineering courses must be taken.

Graduate Programs

Graduate Programs in the Department of Mechanical Engineering and in the Graduate School of Engineering and Applied Science offer the M.S. and Ph.D. degrees in a variety of areas. These programs are designed to provide students with the knowledge and skills necessary for professional careers in industry, government, or education. The programs emphasize fundamentals of mechanical engineering, heat transfer, and combustion, with an emphasis on computational methods and experimental techniques.

Scientific and technical expertise is required for all graduate students. Students are expected to take courses in several areas to gain a broad background in mechanical engineering. Some technical elective courses are:

Control Systems Engineering
- Linear Systems
- Control Theory
- Computer-Controlled Systems

Mechanical Systems Engineering
- Non-Linear Systems
- Vibration and Dynamics
- Fluid Mechanics

Thermal Engineering
- Heat Transfer
- Combustion
- Propulsion

Fluid Mechanics
- Fluid Dynamics
- Heat Transfer
- Gas Dynamics

General
- General Engineering
- Thermodynamics

Electrical Engineering
- Electrical Engineering
- Control Systems

Computer Science
- Computer Science
- Computer-Controlled Systems

Mechanical Engineering
- Mechanical Engineering
- Control Systems
- Computer-Controlled Systems

For more information on the graduate program in mechanical engineering, see the Undergraduate Handbook, available in the Department Office, 282 Engineering Building.

Research

Fluid Mechanics

The graduate program in fluid mechanics provides students with a broad background in computational methods and experimental techniques. The program emphasizes fundamentals of mechanical engineering, heat transfer, and combustion, with an emphasis on computational methods and experimental techniques.

Current research projects include:

1. Computational and experimental studies of turbulent flows, vortex dynamics, and stratified flow
2. Flow separation and control, biofluid dynamics, ship hydrodynamics, viscous flow around ships, propulsion flow and propeller design, and turbulence models for wind and tidal turbines.
Master of Science

The M.S. program requires a minimum of 30 semester hours of course work and research. Students may choose either a thesis or a non-thesis option. In addition to the 30 semester hours of course work and research, writing may be coupled to the 30-semester-hour requirement. Each student determines a plan of study in consultation with an advisor and submits the plan to the department for approval.

To earn the M.S. degree, the student must complete a minimum grade-point average of 3.00 on a 4.00 scale on all previous college-level work and minimum Graduate Record Examination (GRE) scores. In mathematics and physical sciences, a minimum score of 500 verbal and 700 quantitative, or a minimum Test of English as a Foreign Language (TOEFL) score of 550 may be accepted. Admission is determined for students whose native language is not English.

Doctor of Philosophy

Typically, Ph.D. programs in mechanical engineering require approximately 90 semester hours of credit, including research and other coursework. The dissertation is the major requirement for the Ph.D. degree. The student must pass the comprehensive examination after passing the qualifying examination and when the course work and research are completed, in any case, the course is to be taken no later than 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 her or his thesis advisor.

Admission

Students who have earned a baccalaureate or master's degree in an engineering curriculum or in a curriculum in the mathematical sciences may be eligible 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 of 3.00 on a 4.00 scale on all previous college-level work and minimum Graduate Record Examination (GRE) scores. In mathematics and physical sciences, an acceptable score of 500 verbal and 700 quantitative, or a minimum Test of English as a Foreign Language (TOEFL) score of 550 may be accepted for students whose native language is not English.

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 (Hawkeye) Research Foundation. These awards may be made on a semester, academic-year, or summer-year basis. Awards and reappointments are competitive and are based on students' performance and potential contribution to the teaching and research goals of the department. Students who fulfill their assistantship responsibilities and continue to make satisfactory progress toward their degree objective will receive preference in new assistantship awards. Advanced doctoral assistantships may qualify for higher stipend or instructor positions. For financial aid support should be submitted directly to the department chair.

M.S. students with a one-quarter hour or more appointment are required to register for a minimum of 9 semester hours during fall and spring semesters until they have completed 30 semester hours of course and research work beyond the baccalaureate degree. Ph.D. students with full-time status or more appointments are required to register for a minimum of 9 semester hours during fall and spring semesters until they have completed 30 semester hours of course and research work beyond the baccalaureate degree. Once these minimums are met, 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, the use of University facilities, and the amount of consultation with the faculty. A minimum of 36 semester hours is required for the M.S. degree and 72 semester hours is required for the Ph.D. degree.
Mechanical Systems
Simulation exercises in the mechanical systems lab are normally carried out in the Center for Computer-Aided Design and High-Speed Computing Facility. This combined laboratory is an outstanding computer facility consisting of all IBM PS/2 mainframes, two high-speed, high-resolution graphic workstations, a Silicon Graphics Inc. computer graphics workstation, a high-speed workstation, and an associated hardcopy device, as well as a video animation workstation. Capability in addition, an experimental laboratory is available for mechanical systems experiments. Facilities include an analog calculator, a dynamic systems laboratory, a robot control, and a vibration system.

Courses
Special

5596 Cooperative Education/Training Assignment: Mechanical Engineering 1.0 A.H. Cooperative Education Program is designed for on-campus students working towards a B.S. in mechanical engineering. Students work under the supervision of the program's director, Professor A.H., during the academic year. The student's responsibilities include assignments as needed in the cooperative education office. The student's responsibilities include assignments as needed in the cooperative education office.

5840 Mechatronics Engineering 3.0 A.H. Exploration of fundamental aspects of mechanical engineering, predominantly in control systems design and fabrication. Students are required to complete a comprehensive project at the end of the year. Credit: 4.0 A.H.

5996 Professional Seminar: Mechatronics Engineering 3.0 A.H. Exploration of fundamental aspects of mechanical engineering, predominantly in control systems design and fabrication. Students are required to complete a comprehensive project at the end of the year. Credit: 4.0 A.H.

5102 Mechanical Design 3.0 A.H. Fundamentals of mechanical design for machines, including mechanical and thermal engineering aspects of mechanical design and construction. Students are required to complete a comprehensive project at the end of the year. Credit: 4.0 A.H.

5103 Computer-Aided Engineering 3.0 A.H. Fundamentals of computer graphics, visualizations of mechanical and thermal engineering aspects of mechanical design and construction. Students are required to complete a comprehensive project at the end of the year. Credit: 4.0 A.H.

5108 Numerical Calculations 3.0 A.H. Development of algorithms and numerical solutions for differential equations. Students are required to complete a comprehensive project at the end of the year. Credit: 4.0 A.H.
56.103 Graduate Seminar: Mechanical Engineering

Presents and discusses recent research and developments in mechanical engineering. Open to students in the M.S. in Mechanical Engineering program. 1 c.h.

56.105 Contemporary Topics in Mechanical Engineering

Reviews the latest developments in mechanical engineering and related fields. 1 c.h.

56.108 Individual Investigation: Mechanical Engineering

Individual project in mechanical engineering. The topic is determined in consultation with the student's advisor. 1-12 c.h.

56.199 Research: Mechanical Engineering

Research or investigation of an approved topic for partial fulfillment of the requirements for the M.S. degree. Open to students in the M.S. in Mechanical Engineering program. 1-12 c.h.

Meeting company representatives during Careers Day on campus
Graduate College

Laser research in the Department of Physics and Astronomy

Acting dean: Lionel Davis
Deans for advanced studies: Rudolph W. Schulte
Associate deans: James F. Michie, Charles M. Shores
Graduate examiner: Casen Coo
States. The grants support a variety of research and instructional activities that focus on language and communication, international health, and international development. Funding from other sources supports additional research and instructional activity in global studies and other area studies, the arts, and human rights.

As a national resource center, CICS serves the state, the region, and the nation by making available the human and bibliographic resources of the University through a variety of programs, publications, and research activities. Within the University, the center extends international support to existing international programs while encouraging new research and new teaching activities. It emphasizes international studies in four major areas: research support and development for University faculty and students, instructional programs at the undergraduate and graduate levels, and public programs and outreach activities.

The center is administered by a half-time faculty director, a full-time assistant director, and an executive committee of the faculty chairs of the nine CICS constituent programs (see "Interdisciplinary Programs," below). CICS offices and classrooms are located in the International Center. The center is headed administratively by the Office of the Vice Provost for Academic Affairs.

**Interdisciplinary Programs**

Nine interdisciplinary programs are represented in CICS. Five promote instruction and research with a program faculty (the Asian Studies Program, the Asian Civilizations Program, the Global Studies Program (GP), the Latin American Studies Program (LASP), and the Soviet and East European Studies Program (SEESP)). These five are also involved with graduate and undergraduate instruction in the College of Liberal Arts (for further details). The remaining four programs pursue instructional and research activities along traditional lines: the Health and Development in Agrarian Societies Program (HADAS), the Project for International Communication Studies (PICS), the Program for International Development (PID), and the Women in International Development (WID).

The center also houses or works closely with four affiliated programs: the Artists, Artisans, and Traditional Technologies in Development Project, the Development Support Communications Program, the Committee on Socioeconomic Justice and Human Rights, and the Foreign Language Assessment Project.

Faculty members and students active in center programs represent all colleges of the University and every department in the College of Liberal Arts.

**International Research**

Each year, the center awards research and curriculum development grants to faculty and staff. Language and Area Studies Fellowships to graduate students, and Research and International Studies Scholarships to undergraduate students. It supports research projects in Africa, Asia, Latin America, and the United States that involve faculty and staff exchanges, technical assistance, development consultancies, and internships. In conjunction with University Libraries, it also publishes faculty research in the Asia International Papers and the Asia International Bibliographic Guide. A number of visiting foreign scholars and research fellows are affiliated with the center each year, working there from a month to a year. They offer workshops, seminars, and lectures and work on their own research.

**Instructional Programs**

The center supports instruction through courses, seminars, and video colloquia; curriculum development grants awarded to faculty each year; and degree programs offered by the center's constituent programs in conjunction with academic units. Courses are taught by center faculty, postdoctoral research associates, visiting foreign faculty, and fellows in the Distinguished Visiting Professionals Program. Students earn certificates in African studies, global studies, and Latin American Studies; minors in global studies and Latin American Studies; and a major in global studies; and master's degrees in development studies and communications, administered by the School of Journalism.

**Public Programs and Outreach**

More than 100 public lectures, seminars, films, and concerts are sponsored by the center and its constituent programs each year, and CICS cooperates with the Iowa City Foreign Relations Council as well as with other community organizations in providing speakers, training workshops, and other outreach resources. The center also publishes a newsletter twice a year. These public programs and outreach activities are free and open to the University community and the public.

**Genetics**

The Ph.D. program in genetics is an interdepartmental program involving members of the Departments of Biochemistry, Biology, Botany, 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 professional 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**

Program coordinators: Charles F. Atkinson, J. Eichey Andrew

The University of Iowa is one of 21 colleges and universities associated with the Council on International Educational Exchange (CIEE), and sponsors a Film Studies Program in the Contemporary Culture and Criticism Program. These two unique academic opportunities offered at the Centre Universitaire Americain du Cinéma et de la Culture (CUC) in Paris.

The Film Studies Program is designed to explore film theory and analysis—not to train filmmakers or technicians. The curriculum provides courses and seminars in film theory, formal structures, history, and ideology. Participants study the relationships between film and other arts and forms: film culture, film and language, and film and psychoanalysis. Students discuss themes such as the evolution of the early cinema; the classic Hollywood film; French cinema during and after the transition to sound; and European and American avant-garde cinema. Educational Exchange (CIEE), and sponsors a Film Studies Program in the Contemporary Culture and Criticism Program. These two unique academic opportunities offered at the Centre Universitaire Americain du Cinéma et de la Culture (CUC) in Paris.

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and cultural development of groups of ordinary people, seen in their urban or regional context.

Students may concentrate in one of these programs entirely or develop an individual program emphasizing fields from both study center components.

Participating Colleges: Please register in the University of Paris VIII-Corvisier and are eligible to take selected courses within the University of Paris VIII as well as those directed by the center. The center is open to both undergraduate and graduate students from the University of Iowa. For further information contact the program coordinators.

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 Graduate College. For further details see the College of Law section of the 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 are described in Business Administration/Library and Information Science/Economics/Urban and Regional Planning; Hospital and Health Administration/Urban and Regional Planning; Social Work/Urban and Regional Planning; Physical Medicine and Environmental Health/Urban and Regional Planning.

Medical Scientist Training Program
The Medical Scientist Training Program (MSTP) is an interdisciplinary M.D./Ph.D. program offered jointly by the College of Medicine and the Graduate College. See "Medical Science/Training Programs" in the College of Medicine section of the Catalog.

Molecular Biology
The Ph.D. program in molecular biology is interdisciplinary in nature, in nature involving members of the Departments of Biology, Biochemistry, Medicine, Microbiology, Pathology, and Physiology. See "Molecular Biology" in the College of Medicine section of the Catalog.

Neuroscience Program
The Neuroscience Program is designed to provide an interdisciplinary and interdepartmental approach to graduate

education and research training aimed at understanding the structural, functional, and developmental aspects of the nervous system and its role in behavior. See "Neuroscience Program" in the College of Medicine section of the Catalog.

Physician Assistant/Preventive Medicine and Environmental Health Joint Program
Students who already have a baccalaureate degree may jointly pursue a Master of Science degree with a major in preventive medicine and environmental health in the Graduate College and a Bachelor of Science degree 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 section of the Catalog.

Quality Management and Productivity
The interdisciplinary Program in Quality Management and Productivity leads to the M.S. degree. Co-sponsored by the Departments of Statistics and Actuarial Science, Industrial and Management Engineering, and Management Sciences, the program seeks to train students who are interested in the total quality management of products and services, an area of increasing importance in business and industry. Details are provided in the College of Business Administration section of the Catalog.

Transportation Studies
The Program in Transportation Studies is an interdisciplinary, research-oriented program which deals with the planning, analysis, and operation of transportation systems. Students select a project in the program in conjunction with work toward a graduate degree in civil/environmental engineering, geography, urban planning, or regional planning. When the graduate degree is awarded, the entry is based on the student's transcript certifying completion of the Program in Transportation Studies. 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 widely varied positions in government and the private sector. The program has a strong policy orientation that enables its graduates to understand the complexities of directing a particular urban or regional problem and to develop workable solutions. Students may choose to specialize in transportation, environmental quality, land use, housing, and several other areas. A number of joint appointments are made to help classify students in "Urban and Regional Planning" in the College of Liberal Arts section of the Catalog.

Research Resources
The many and diverse research activities of the University are centrally administered by the Office of the Vice President for Research. Research funds and facilities are open to graduate students and are available in a range of disciplines, primarily in the sciences, social sciences, and humanities.

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 VII, Graduate Appointments" in "Fees and Regulations of the Graduate College." The following are the primary sources of assistance.

Teaching and Research Assistantships
Available in most departments; stipends typically range between $7,800 and $10,500 for full-time assistants; assistants are eligible for tuition scholarships. Assistantships are competitive and are classified as residents for tax purposes.

Iowa Arts Fellowships
For first-year University of Iowa graduate students entering M.F.A. programs, typical stipends are $10,000 for the academic year with all tuition paid, for as many as two years (the second year being contingent on demonstration of continued academic and creative progress toward completion of the M.F.A. degree; no additional stipends).

Iowa Foundation 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.

The University of Iowa Fellowship Program
For first-year graduate students entering doctoral programs; typical stipends are $14,950/year on a year-round basis, with all tuition paid, for as many as four years; dissertation participation assures that the recipient will be involved in teaching, research, and departmental affairs, in two years out of four and in all summers, recipient may pursue research, writing or full-time.

Scholarships
Scholarships provide up to full tuition and fees.

Graduate Fellowships
Graduate fellowships provide $8,000 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 scholarships, part-time employment in research, or part-time teaching appointments. The Office of the Vice-President for Research maintains a library of information on public and private agencies that provide funds for research and graduate study. Much material has been collected concerning awards for overseas study.

Graduate Student Senate
The Graduate Student Senate is the University graduate student body representative organization. Representatives are elected annually from each University department that has a graduate degree program. The senate's primary purpose is to serve the interests of the graduate student body in matters affecting its welfare. The senate advises the dean of the Graduate College on matters pertaining to the college.

Rules and Regulations of the Graduate College
The following text is from the Manual of Rules and Regulations of the Graduate College.

The Academic Program
Section I. Admission to the Graduate College
A. Application Procedure
All students working 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 director of admissions. The University of Iowa, Iowa City, Ia., 52242.

In addition to these forms, official transcripts from any significant undergraduate and graduate institution attended must be submitted to the director of admissions by the designated deadline prior to the session in which admission is expected. Specific deadlines 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 Examinations
All applicants prior to consideration for admission should take the General (Advanced) Test of the Graduate Record Examination (GRE) or, for applicants to graduate programs in business administration, the Graduate Management Admission Test (GMAT). Applicants for whom admission data are complete, with the exception of scores on the GRE or the GMAT, may, depending on departmental policy, be admitted if they meet all other requirements. The GRE and the GMAT must be taken before the end of the student's first session of enrollment. 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 both tests and its weight in the decision on admission of a student is left to the departments. Some departments in fields where GRE subject (Advanced) Tests are available require them in addition to the General (Advanced) Test. Requirements about the General (Advanced) Test may be directed to University Evaluation and Examination Service, and inquiries about the requirement of the Subject (Advanced) Test should be addressed to the administrative office of the department in which the applicant is interested.

C. English for Foreign Students
Prior to consideration for admission, foreign students whose native language is other than English must take the TOEFL (Test of English as a Foreign Language), unless they have received a degree from an accredited college or university in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand. The examination is given at various sites of the year and in many centers throughout the world. Inquiries concerning the TOEFL are directed to the director, TOEFL Educational Testing Service, Princeton, N.J. (609) 771-7070.

Foreign students transferring from unfinished degree programs of other universities in the United States who have not taken this examination, or who have screened a grade lower than the minimum established by the Graduate College, may be asked to take the TOEFL examination and receive a passing grade prior to consideration for admission.

The Graduate College will advise the departments of those students hope that the TOEFL examination is not a prerequisite for their degree. The individual departments may require such students to take and pass a course at the University of Iowa in English usage designed especially for foreign students.

D. Early Admission
A student who is within six semester hours of having satisfied all the requirements for the bachelor's degree at The University of Iowa or any other accredited college may be given provisional admission.

E. Candidacy
Admission to the Graduate College is not the equivalent of acceptance as a candidate for an advanced degree, which must be earned through work successfully completed at The University of Iowa. (See "Section X. Master's Degrees." "Section XI. Two-Year Degree Programs," and "Section XII. Doctor's Degrees.")

F. Declaration of Major and Degree
Every applicant for admission must indicate on the application form the department or program of major interest and the degree certificate, or professional objective for which he is interested to pursue. The only exceptions to this regulation are the limited number of applicants registered as "special students." (See definition of "special student" in next paragraph.) Changes in the major or degree status may be made in the course of a student's graduate study with the approval of the department to which the transfer is proposed. To initiate such action the student must file a change of major or degree status in the Office of Admissions.

G. Status upon Admission
All students upon admission fall into one of the following categories: 1. Regular—Students who have met the minimum requirements for admission and who have been accepted by a department, or interdepartmental degree program, for work leading to a graduate degree or certificate or professional (or personal) improvement.

2. Conditional—Students who are interested in working toward a graduate degree or certificate but who are required by a department to demonstrate their ability to do satisfactory graduate work before being admitted to regular status. To be admitted on a conditional basis, the student must be recommended by a department, which will assume responsibility for advising him or her. In most cases, conditional students are not enrolled in graduate courses.

3. Special—Students with a valid bachelor's degree and at least a 2.0 grade-point average who are not planning to become candidates for a graduate degree or certificate. Registration as a special student is allowed for only one semester or summer session. Before registration for any subsequent session, including another summer session, a special student must file an application and be admitted to a department or program to register or conditional status. A student registering as a special student is not required to take more than two courses during a semester or eight semester hours during the eight-week summer session.

H. 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 required standards. For nonbaccalaureate students, a minimum grade-point average of 2.00 is required for admission to conditional status. A minimum of 2.50 is required for admission to regular status. The grade-point average in
computed only on graduate work if the student has completed at least 12 graduate hours. If the student has 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 required, but has a Graduate Record Examination score at or above the point to be designated for the Graduate College dean. Six or her papers shall be forwarded to the department concerned for examination and decision.

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 on the entire record of collegiate work.

Departments, or committees in charge of interdepartmental degree programs, may, and often do, set higher minimum admission requirements than those set forth above for the Graduate College as a whole. Information concerning departmental or program requirements may be obtained directly from the department concerned.

For State Board of Regents' formal admission requirements, see "Appendix" in the Catalog.

I. Admission of Faculty Members to Graduate Study

Persons who hold faculty rank of assistant professor or higher (associate or full professor, or above) at The University of Iowa may be admitted as special students. (See "Section G" above.) A person holding faculty rank as specified above may petition the Graduate College Dean to be admitted to a departmental program for work leading toward a degree, certificate, or professional improvement except in the department of his or her appointment or a closely related department. Such petitions must be submitted to the Graduate College Dean. Approval of full-time, dean of the college department in which the work is to be pursued, and the Graduate College Dean.

J. Readmission

Students who are admitted to and enroll in the Graduate College, but fail to complete the requirements for a degree (or more) may apply for readmission. The acceptance is dependent upon departmental approval for the session in which readmission is desired. Consideration of the application for readmission will be governed by the departmental and Graduate College admissions standards in effect at the time of reaplication.

Section II. Registration

A. Standard Schedule

Students enrolled in the Graduate College may register for no more than 16 semester hours of credit in graduate courses. In a schedule of repeated 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 equipsity applies to the continuing 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; six semester hours if two or more semester hours of undergraduate work is included.

The maximum semester-hour registration for work scheduled outside of the regular eight-week summer session will be arranged on a basis proportionate to that stated above with the approval of the Graduate College dean. Nine semester hours in the regular semester constitute full-time registration. (Preliminary are required to carry at least nine semester hours during a semester as a condition of their appointments.) One-quarter-time and one-third-time appointees are permitted to register for the maximum: 3 semester hours per semester and eight semester hours during the eight-week summer session.

B. Courses Not Included in Total Registration

In addition to a 61 schedule, a graduate student may register for courses printed in the Schedule of Courses as carrying zero semester hours credit.

C. Changes in Announced Credit

Graduate students are required to 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 choose for limited or no credit is subject to the consent of the adviser and the approval of the dean of the Graduate College.

D. Reduced Schedules for Teaching and Research Assistants and Other Appointees

1. One-half-time appointees may register for not more than 12 semester hours during a semester or an eight-week session during the eight-week summer session.

2. Five-eighths-time appointees may register for not more than 10 semester hours during a semester or five semester hours during the eight-week summer session.

3. Two-thirds- and 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. One-half-time appointees may register for not more than seven semester hours during a semester or five semester hours during the eight-week summer session.

5. Full-time appointees, including full-time instructors, may register for not more than six semester hours during a semester or eight 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 as many semester hours of credit for each of the remaining weeks of classes (not including the examination period) in the term. The total registration may not exceed the 15 semester hours permitted for a semester and the eight semester hours permitted for the eight-week summer session. Registration after the last day of the third week of a semester or the third day of the second week of a summer session is permitted only in courses involving special projects, readings, individual study, thesis, or research, with the signs approval of the instructor concerned and the Graduate College Dean.

G. Extramural Registration

After admission to a departmental program in the Graduate College, graduate students may work done off campus may be accepted for residence credit under the following circumstances:

1. Traveling Scholar Program of the Center for International Cooperation (see "Section III").

2. Research at approved locations under the direction of members of the graduate faculty of The University of Iowa.

3. Field work as part of a regularly scheduled course or research program.

4. Courses taught on campus by members of the graduate faculty (see "Section X-III") for 15 semester hours required on campus for the master's or doctoral degree.

5. Residence graduate credit from another Iowa Regents' university (see "Section X-IV").

6. As many as nine semester hours of graduate registration and course at the Quadrangle Graduate Center from faculty other than faculty of the Iowa Regents' universities, permitted only by an acceptable the student's major department for a 2-year degree.

Extramural registration does not count toward residence credit in the following circumstances:

1. Course work transferred from another institution;

2. Correspondence courses.

H. Extramural Fees and Privileges

Extramural course work may be counted as residence credit only if the student has been admitted to a departmental program in the Graduate College (see "Section LG") and pays established fees. (See "Section
I. Correspondence Courses

Correspondence study credits do not count as residence credits. Not more than nine semester hours of graduate correspondence work can be applied toward an advanced degree. No correspondence credit may be accepted for the student's plan of study and must be named after the student has enrolled in the Graduate College. In some instances, graduate correspondence study credit earned after a student has received a bachelor's degree but before enrolling in the Graduate College may be counted toward an advanced degree with approval of the Graduate College upon recommendation of the major department.

A graduate student may not register for correspondence courses without the approval of the supervisor of his or her major department and of the Graduate College dean.

J. System of Course Numbers

Courses primarily for graduate students are numbered 260 or above in each department. Courses open to and carrying credit for both graduate and undergraduate students are numbered from 100 to 199. Courses below 100 are not accepted for graduate credit. Graduate credit may not be earned for courses numbered below 100 in each department, in each major, in each area, in each readings, special projects, or independent study having course numbers of 100 or above.

K. Auditing of Courses

Upon the recommendation of the instructor and with the consent of the department, a graduate student may be allowed to audit graduate courses. Audit status may be granted for a fee, and credit is not awarded for audited courses. Auditing is permitted only for a student who has earned a bachelor's degree.

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 presented to the registrar shall receive a grade of "RC." After the deadline, no drop shall be allowed, except by the student's major faculty advisor. Approval of such a request is based on the recommendations of the dean of the Graduate College in consultation with the student's major faculty advisor. A student who requests permission to drop a course after the deadline is required to consult with the dean of the Graduate College before being permitted to re-enroll.

Section III. Traveling Scholar Program

A. Purpose

The program, under the auspices of the Commission on Interstate Cooperation representing 11 universities in the Midwest, enables a doctoral student to take advantage of special resources available on another campus but not available on his or her own campus, special course offerings, research opportunities, unique laboratories, and library collections.

B. Procedure

1. A CIC Traveling Scholar who has successfully completed at least one prior term of residence at another CIC institution may apply to one of the host institutions for a scholarship. The scholarship will be awarded on the basis of academic achievement and research potential.

2. After the approval of the dean of the host institution, the CIC Traveling Scholar will be permitted to stay in the host institution for one semester.

3. A CIC Traveling Scholar will be required to return to the institution at the end of the semester.

4. Credit for the work taken will be recorded at the host institution.

5. Those desiring additional information should inquire at the office of the Graduate College.

Section IV. Academic Standing, Probation, and Dismissal

A. Nondoctoral Students

A student, except one on conditional status, shall not be placed on probation if, after completing eight semester hours of graduate work, his or her cumulative grade-point average on all work done in graduate school is 2.00 or higher, and if, after completing eight more semester hours of graduate work in this University, his or her grade-point average remains above 2.00, he or she shall be deemed to be in good standing. Otherwise, the student shall be placed on academic probation.

B. Doctoral Students

A doctoral student may be regularly placed on probation. If, after completing eight semester hours of graduate work at this University, his or her cumulative grade-point average on all work done in graduate school at The University of Iowa falls below 3.00, if, after completing eight more semester hours of graduate work at this University, his or her cumulative grade-point average remains below 3.00, he or she shall be deemed to be in good standing. Otherwise, the student shall be placed on academic probation.
A student who will not be permitted to register for those courses will be notified of this fact in writing with reasons for the action provided. Such dismissal may be followed in certain conditions of admission, conditions of probation, pre-announced departures from program requirements or other standards, or failure of a regularly scheduled examination or formal evaluation. If a student judge the dismissal decision improper, the student has a right to review. Each department shall establish procedures for handling such reviews. The procedures are to be approved by the Graduate College dean, and shall afford a fair and expeditious review. A description of these procedures shall be included in the departmental regulations described above. (See "Section IX")

F. Graduate College Review of Departmental Dismissal

Questions involving judgment of performance will not be reviewed beyond the department level. II. However, the student feels that he has been wronged or some procedural irregularity concerning dismissal, the student may request a review by the Graduate College. This review may be conducted by the Graduate College dean alone, or the dean may appoint a Graduate College committee consisting of both student and faculty members to conduct the review and be assisted in the review possible course of actions. The review by the Graduate College is final.

Section V. Credits

A. Transfer of Graduate Credit

Course work outside the institution will be reviewed on the student's permanent record by the registrar and a report of this action will be sent to the student's home university. Credit for courses at the undergraduate degree level may be allowed in graduate work. Credit for courses at the undergraduate degree level as a minimum 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 a resident graduate student from another Iowa university may be counted as residence credit at Iowa State. This credit is acceptable to the student's major department on the basis of the department's determination of its application toward the degree. (See "Section XIX," and "XIX-C." for minimum semester hours required on campus for the master's and doctor's degrees.)

C. Redenomination in Credit

For courses or offerings in independent study, thesis, and research, an equivalent course or offering may report less credit than the number of semester hours for which a student is registered.

D. Graduate Credit for Veterans

Credit may be granted for studies pursued in war and military situations under such regulations as may be formulated by the national educational agencies and under such adaptations of standing rules as the Graduate Council may authorize from time to time to meet group or individual situations. The value of such credit is satisfying requirements for a degree will be determined by the major department with the approval of the dean.

E. Withdrawal of Registration and Prop-Honors Credit for Students Entering Military Service

1. Students who leave within the first six weeks of the semester receive no credit.
2. Students who leave within the first six weeks of the semester receive one-half credit.
3. Students who leave within the period of 10 to 12 weeks receive two-thirds credit.

4. Grade reports for the one-half and two-thirds credit periods (a) Instructors report grades only as satisfactory or unsatisfactory, (b) Credit is to be assigned on the basis of total registration minus thesis and seminar, (c) Courses are to be counted toward specific degree requirements only after the student returns and then only with the department's approval.

5. Students who complete the twelfth week receive full credit.

6. Grade reports for the full credit period (a) Grades are to be reported only at the end of the semester, (b) Credit is to be reported in specific courses.

7. In each instance the instructor reports the student's credit, grade, and date of withdrawal. No credit is granted unless the student's work is satisfactory at the time of leaving.

8. The transfer of credit in thesis and research registration is to be reported to the registry by individual instructors on the above form. Therefore, no less than or no more credit may be assigned.

Section VI. Marking System

A. Marks Carrying Graduate Credit

There are A-i, A, B-i, B, C-i, C, and S-satisfactory. For course marks, S represents optional. For thesis and research marks, S represents optional.

B. Marks Carrying No Graduate Credit

These are D-i, D, i-complete, W-withdrawn without grade, F-failed, and U—unsatisfactory.

C. Audit

If it is assigned when a student enrolled for the completion of a course to complete the instructor's requirements for course attendance, W is assigned.

D. Incomplete

The grade of I is to be used only when a student's work during a session cannot be completed because of illness, accident, or other circumstances beyond the student's control. In registrations for thesis, research, or independent study, the satisfactory/unsatisfactory grades may be applied. (See next paragraph, "E."), Students who receive the mark of i-may no longer be required to take the credit for the credit for the work, after the student returns with the dean's approval. E. Thesis, Reading, Research, Independent Study, and Special Projects

Grades of S and U may be used for registrations in thesis, research, readings, independent study, and special projects. S—satisfactory means that the student receives credit for the work. U—unsatisfactory means that he or she receives no credit.

F. Grades of S and U

S and U may be used for courses taken by students who are not in a departmental or interdepartmental degree program provided that the instructor of the course and the student's departmental advisor approve the registration. Arrangements for satisfactory/unsatisfactory grading in these courses are accomplished by filling out the appropriate forms in the Registrar's Office at the time of registration, or no later than the last day of the third week of a semester or the second day of the second week of a summer session. No changes from letter grades to satisfactory/unsatisfactory grades will be allowed after these dates.

It is not the policy of the Graduate College to abandon the traditional letter grades described in this section; however, in certain exceptional circumstances, departments having several areas of concentration within a discipline may propose a different type of evaluation that may require the permission of the Graduate
Council to allow students majoring in one area to register in courses in another area within the same department or program on a satisfactory/un satisfactory basis. In these instances, satisfactory/un satisfactory grades will be used as described in the preceding paragraph.

G. Computed Grade-Point Average
This is based only upon graduate work graded A + to F. A + = 4.33, B+ = 3.33, B = 3.00, B- = 2.67, C+ = 2.33, C = 2.00, C- = 1.67, D+ = 1.33, D = 1.00, D- = 0.67, and F = 0.00. Although a grade of F has a value of 0.00 in computing a student’s grade-point average, the cumulative average is truncated as so not to exceed 4.00.

Section VII. Graduate Appointments
A. Scholarships
Scholarships are competitive and are awarded on merit.
1. Eligibility for graduate scholarships and fellowships will include: (a) registration in the Graduate College; (b) cumulative grade-point average of at least 3.00; (c) a GRE score or a GMAT score above a point to be designated by the Graduate College dean; (d) a satisfactory rate of progress in completing the program for the degree.
2. Preference will be given to candidates for the M.S. or M.B.A.
3. Recommendations for graduate scholarships may be made to the Graduate College by the department executive, director, or dean. A graduate scholarship will be awarded whether or not a student holds an assistantship. The amount of scholarship for the academic year may vary, but in no case exceed the comprehensive fee assessed. Scholarships will be credited to the student’s University account.

B. Graduate College Fellowships
Fellowships are awarded by the Graduate College upon recommendation by departmental students with outstanding academic records. Fellowships must be registered as full-time students. The primary purpose of the awards is to permit an advanced student to complete his or her dissertation or creative project and take the degree. Other terms of the award will be established by the Graduate College dean in consultation with the Graduate Council.

C. Faculty Research Assistantships
Faculty research assistantships are awarded to qualified graduate students and serve two purposes: to provide research service to professorial 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 full-time assistant. Other part-time service is scaled in proportion, and a limited academic schedule is permitted (see “Section I.D.”). Appointments ordinarily are made for the nine-month academic year, but appointments may be made for other periods of time by special arrangement. Stipends vary with the qualifications of the applicant and the amount of service rendered. Faculty research assistantships appointed by the Graduate College pay their own fees. Graduate appointments beginning in August are usually made by the Graduate College dean upon recommendation of the various departments in March of each year, although appointments may be considered at any time. Application should be made on the form provided by the Graduate College and should be accompanied by recommendations and a letter summarizing the student’s qualifications.

D. Graduate Assistantships
These assistantships serve two purposes: assistance in the instructional program of the University and the preparation of future college teachers. In order to achieve both, scholarship, scholarly graduate students who show exceptional promise as teachers are selected for graduate assistantships. All appointments are made by the dean of the appropriate college on recommendation of the department.

E. Eligibility for Scholarships, Fellowships, and Research Assistantships
Scholars, fellows, and faculty research assistants on the Graduate College budget must be registered as regular students in good standing in order to hold such appointments. Appointments will be terminated when registration and/or student status is terminated; in no instance may a student be promoted or tendered an appointment until after approval for admittance by the Graduate College by the director of admissions.

F. Dismissal of Assistants
A uniform policy governing procedures to be followed in the dismissal of assistants has been established by the Board of Regents. Copies of this policy are available in the office of the Graduate College dean.

G. Credit
No academic credit is allowed for the teaching or research service for which the student receives payment as a graduate or a faculty research assistant.

H. Loans
Graduate students requiring financial assistance may apply for loans at the Office of Student Financial Aid. See “Scholarships and Loans” section of the Catalog.

I. Other Forms of Support
Many departments offer financial assistance in the form of stipends, part-time employment on research programs, or part-time teaching. Inquiries should be addressed directly to the major department.

J. Research Associateships and Postdoctoral Fellowships
These fellowships are for independent research. Appointment is made through the Office of the Vice President for Academic Affairs.

Section VIII. Advanced Programs Leading to the Graduate College
The subject areas in which the Graduate College offers degree programs are listed under “Advanced Degree Programs” at the beginning of the “Graduate College” 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 start of the semester or one week after the start of the summer session, in which the degree will be conferred. The student must have the approvals signed by his or her adviser. Failure to file the application by the deadline will result in postponement of graduation to a subsequent session.

B. Enrollment in Final Session
The student must be enrolled during the session in which the degree is to be conferred, except as noted in the following paragraph. A student who fails to register for the session in which the degree is to be conferred but who registers at any other University campus during that session may meet this requirement by registering for independent study, research, or thesis according to the procedures in the various departments. Doctoral candidates who have completed all work except the final examination may register for 000001 Master’s Final Registration at a fee equivalent to the postcomprehensive registration if such registration is appropriate. Registration in a correspondence course will not satisfy this requirement.

Students completing all requirements (including the final examination and thesis defense) for a graduate degree will be enrolled in the Independent Study Session effective their degree 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 lead to the Master of Arts degree, Master of Science degree, Master of Business Administration degree, Master of Comparative Law degree, Master of Arts in Teaching degree, and such other
G. Two Master's Degrees

The granting by this University of two master's degrees 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 30 semester hours of graduate credit for thesis research and writing shall be counted in satisfying the 30-semester-hour minimum requirement. The thesis may be a scholarly study or an artistic production.

One copy of the thesis, complete and in final typed form, must be presented to the Graduate College for a check of formal characteristics not later than four weeks before the graduation date on which the degree is to be conferred. (See the Graduate College Thesis Manual.) After approval by the Graduate College and by the thesis committee, a final copy of the thesis must be deposited with the Graduate College not later than ten days before graduation.

The thesis committee shall consist of at least three members of the graduate faculty. The thesis may be identical with this examination committee (See "K. Examining Committee").

I. Master's Degree without Thesis

A master's degree without thesis consisting of at least 30 semester hours of graduate study may be awarded upon the completion of a curricular program 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 is the discretion of the major department, may be written or oral or both. Such an examination will not duplicate course examinations. It will be evaluated by the examining committee as satisfactory or unsatisfactory, with unsatisfactory votes making the report unsatisfactory. The report of the final examination is due in the Graduate College not later than 48 hours after the examination.

If the department so recommends, a candidate who fails the examination may present himself or herself for re-examination, 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, a comprehensive examination for a doctoral degree may be substituted for the master's examination.

K. Examining Committee

The examining committee for the master's degree consists of at least three members of the graduate faculty, appointed by the Graduate Council, who have had prior recommendation of the major department or program, at least two of whom are from the major department. If the examination covers work in another department, one member of the committee must be from that department. Upon recommendation of the major department, the dean may appoint additional qualified persons (not necessarily members of the graduate faculty) to serve as voting members of the examining committee, and at his or her discretion, the Graduate College dean may add a member to the committee.

Section XI. Two-Year Degrees

A. Master of Fine Arts Degree

This degree is awarded for creative work in the visual arts, dramatic art, music, dance, or literature. It is designed for students preparing themselves professionally in such fields as painting, design, mural decoration, sculpture, playwriting, acting, producing, stage design, musical performance, costume, instrumentation, 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 requirements for the Master of Fine Arts degree require at least two years of residence credit at the Graduate College. This requires a minimum of 48 semester hours of graduate credit, at least 30 of which must qualify for residence credit at this university. A Master of Arts degree may be earned where the student is working toward the Master of Fine Arts degree, but the student must meet all the requirements for the Master of Fine Arts degree, with a minimum combined total of 60 semester hours of graduate credit.

For other requirements see "Section XII. Plan of Study", "C. Major and Related Fields", "E. Reduction of Credits", "H. Master's Degree with Thesis", "I. Final Examination", and "K. Examining Committee",
experience, and electives. Four semester hours of research culminate in a written report.

Courses successfully completed ten or more years prior to the final examination will be evaluated by the major department in order to determine the amount of credit that shall be allowed for such work. Evaluation of such old credits will be reported to the Gradute College by the departmental executive at the time of submission of the plan of study.

Other requirements and regulations applicable to the educational specialty degrees 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. Limit on Professional Courses," "I. Final Examination," and "K. Examinining Committee."

A master's degree may be earned while in residence for the educational specialty degree provided the student meets all the requirements for the master's degree in question.

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 understanding of the professional practice of social work 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, oral, or both, covering all work for the degree.

The requirement of 60 semester hours may be interpreted to mean that a student can satisfy the faculty of the school that he or she has been accomplished, in the junior or senior undergraduate years, the core equivalent of part or parts of the graduate curriculum in social work may be permitted in consultation of the faculty of the school, to qualify for the M.S.W. degree on less than 60 semester hours. In no case may a student qualify for the degree on less than 45 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. Since class work and field practice are interrelated, students may enter the School of Social Work only in August.

For other requirements, see "Section X.B. Plan of Study: "E. Reduction of Old Credits," "H. Master's Degree with Thesis," and "K. Examining Committee."

Section XII. Doctor's Degrees

A. Character of Degree

The Graduate College awards two doctorates, the Doctor of Philosophy and the Doctor of Musical Arts. The doctorate is the highest degree awarded by the University. The Doctor of Philosophy degree indicates competence in research or other creative work, and superior comprehension in the discipline. The Doctor of Musical Arts degree indicates marked excellence in performance and pedagogy.

B. Prerequisites

The candidate must present evidence of having completed a satisfactory amount of undergraduate work in the subject proposed for investigation. In the event of deficiency, must register for prerequisite courses.

C. Residence Requirement

The student normally is granted a six-year period on the basis of achievement rather than the accumulation of semester hours of credit; however, the candidate is expected to have completed at least three years of residence in a graduate college. At least part of this residence must be spent in full-time involvement in one's discipline, at this University; beyond the first 28 semester hours of graduate work, this requirement can be met either by: (1) enrollment as a full-time student (nine semester hours minimum) in each of two semesters, or (2) enrollment for a maximum of six semester hours in each of three semesters during which the student can complete at least a third-year full-time studentship certified by the department as consistent with the student's doctoral program. (For purposes of record and assessment of fees, student registration should reflect accurately the amount and kind of work undertaken in the Graduate College. All doctoral programs, including acceptable transfer credit, will contain a minimum of 72 semester hours of graduate work.)

D. Plan of Study

The plan of study at the doctoral level is the responsibility of the student working together with his or her advisor. A formal plan of study must accompany the departmental request to the Graduate College for permission to conduct the comprehensive examination. The plan will provide a listing of all graduate courses taken which apply toward the degree and a listing of courses in progress or to be completed after the comprehensive examination.

E. Ad Hoc Interdisciplinary Programs

A student may petition for an interdisciplinary course of study, including the plan for the comprehensive examination, under the sponsorship of at least three faculty members and the department concerned, which shall be designated as the sponsoring department. Final approval of such individual programs is granted by the Graduate College dean, who may add members to the student's supervising committee from other closely related departments or offices.

F. Reduction of Old Credits

Courses taken ten or more years prior to the comprehensive examination will be evaluated by the major department in order to determine the amount of credit that shall be allowed for such work. Evaluation of such old credits will be reported to the Graduate College by the departmental executive at the time of submission of the plan of study.

G. Limit on Professional Courses

Work taken in the College 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 has completed work equivalent to that required for a bachelor's degree at The University of Iowa. The work accepted from the professional colleges must be directly related to the student's major field of study in the Graduate College, and the plan of study must be approved by the student's advisor and the major department. Work completed while registered for a professional degree in medicine, or in any other discipline of the one academic year which must be spent in the major college on the campus of this University.

H. Joint Program for Master's and Doctor's Degrees

Those students who expect to continue their major work in the same discipline may file a joint program for the master's and doctor's degree. The master's requirement may be completed with the comprehensive examination for the doctorate. The joint candidates examining committee will file separable. The examining committee for the master's degree and for the comprehensive examination. Upon recommendation of the department and approval of the Graduate College, those students who are well qualified by previous training may submit a plan of study that leads directly to the doctoral degree without earning the master's degree as an intervening part.

I. Requirement in Foreign Languages

There is no general Graduate College requirement in foreign languages. Those departments which do require competence in one or more foreign languages establish standards as to the extent and level of competence as well as methods of testing. Specific requirements will be found in the departmental statements of standards and procedures (see "Section VIII."

Departmental executive offices are responsible for reporting completion of
requirements to the registrar for entering on the student's record.

Specifications of departmental requirements in foreign languages are filed in the Graduate College office and may be changed upon the initiative of the departments.

J. Comprehensive Examination

The candidate must pass a comprehensive examination, consisting of written or oral parts or both at the discretion of the major department. Admission to the comprehensive examination is granted upon the recommendation of the major department, the filing of the plan of study, and the approval of the dean of the Graduate College. A student must be registered in the Graduate College at the time of the comprehensive examination, which must be passed not later than the session prior to the session of graduation. This examination, administered only on campus, is intended to be an inclusive evaluation of the candidate's mastery of the major and related fields of study, including the tools of research at which competence has been certified.

The comprehensive examination is not a delayed qualifying examination. It is intended to evaluate the candidate's mastery of the subject at or near the end of his or her formal preparation and prior to the completion of the dissertation. The comprehensive examination and the final examination, which is concerned chiefly with the evaluation of the major and related subjects, are the two principal examinations for the doctoral degree.

The comprehensive examination will be evaluated by a convened meeting of the committee and reported as satisfactory, with reservations, unsatisfactory, or not attempted. The Graduate College office will, 45 days after the completion of the examination, send to the appropriate "doctoral" votes the committee report and summaries.

In the event of a report with two or more votes of "satisfactory with reservations," the candidate must be allowed to complete the stipulations as defined by the committee. In addition, he or she must pass a similar examination in another area, on one's own initiative or with the approval of the committee. Two "unsatisfactory" votes will make the candidate ineligible for degree.

In the event of the report with two or more votes of "unsatisfactory," the candidate must not be admitted to the final examination until such stipulations have been satisfied. The executive of the major department should promptly send a written report to the Graduate College giving the use of removal of "unsatisfactory." If, in the case of a report of unsatisfactory on a comprehensive examination, the candidate may request the permission to register for or himself for reexamination not sooner than four months after the first examination. The examination may be repeated only once, at the option of the department.

K. Postcomprehensive Registration

The student is required to register each semester after passing the comprehensive examination until the degree is awarded. If a student fails to register, the student may not be readmitted to candidacy until the student has submitted an application which has been approved by the student's adviser, the departmental executive, and the Graduate College dean.

All registrations should accurately reflect the amount and type of work undertaken, the use of University facilities, and the amount of consultation with the faculty. The student should register for the courses, research, and thesis necessary to complete the plan of study.

When the registrations required for the plan of study have been completed, the student should meet the continuing registration requirement by registering for 900苷100 PDL, Postcomprehensive Registration and paying a special minimum fee for any semester in which the department (i.e., department chair or director of graduate studies) and the student's adviser determine that the student is neither making significant use of University facilities (except library privileges) nor partaking of consultation with the faculty. It is understood that no registration for a summer session is required when the student makes no use of University resources, unless the student is taking a degree at the end of that session or unless enrollment is required by the department.

L. Dissertation for the Doctoral Degree

One copy of the dissertation, complete and in final form, must be presented at the office of the Academic Dean before the final examination, and not later than four months before the graduation date on which the degree is to be conferred.

Two copies of the approved dissertation must be deposited at the Graduate College office at least ten days prior to the graduation date. The final deposit can be made in the office before the end of the semester (summer excepted) 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 will be promulgated by the dean of the Graduate College. Dissertations will be microfilmed and thus made available on a permanent basis. An abstract of the dissertation, not to exceed 300 words of text, is to be deposited with the dissertation. The abstract must be approved and signed by the dissertation adviser. The abstract is published in the journal of Doctorate Abstracts International. One copy of the dissertation is bound and issued at the University Library.

If the dissertation is in some nonprint form (e.g., publicly available performance in music) the format will be selected by the student in consultation with the committee. If such help is needed. Once the accompanying manuscript is accepted, it is treated the same as any other thesis. Written dissertations shall be made available to all members of the examining committee not later than three weeks before the date of the examination.

M. Dissertation Fee

A nonrefundable dissertation fee is charged each candidate to cover the cost of processing the dissertation and abstract.

N. Final Examination

The work for the degree culminates in a final oral examination administered on campus. This examination should include a critical inquiry into the purposes, methods, and results of the investigation—not a mere recapitulation of the procedures followed—and intensive questioning on areas of knowledge constituting the immediate context of the investigation. The final examination may not be held until the next session after the student passes the comprehensive examination nor until the thesis is accepted for first deposit by the Graduate College; however, a student must pass the final examination no later than five years after passing the comprehensive examination. Failure to meet this deadline will result in a reexamination of the student to determine his or her qualifications for the final examination. The procedures to be followed are the same as those for the comprehensive examination. (See XII. Comprehensive Examination.)

Final examinations for the doctoral candidates are conducted in public. Members of the Graduate College are especially invited to attend and subject to the approval of the chair, to participate in the examination.

The report of the final examination is due in the Graduate College office not later than 48 hours after the examination. The final examination will be evaluated as satisfactory or unsatisfactory. Two unsatisfactory votes will make the candidate ineligible for degree.

O. Examining Committees

The comprehensive and final examinations are conducted by committees of no fewer than five members of the graduate faculty appointed by the Graduate Dean upon recommendation of the major department, except that departments may request the dean's permission to place one of the five members of the graduate faculty by a recognized scholar of the university. The academic tradition of the graduate faculty committee for the degree is required in those cases where a related field outside the major department is
Section XIII. Exceptions

Petitions to waive these regulations may be made for appropriate and justifiable reasons on behalf of any graduate student through the departmental executive to the dean and the Graduate Council.

Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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<tbody>
<tr>
<td>990.807</td>
<td>Ph.D. Precomprehensive</td>
<td>0 a.h.</td>
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<tr>
<td>990.808</td>
<td>Master’s Final Registration</td>
<td>0 a.h.</td>
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009.331 Joiner's in London at City University 0 a.h.
009.440 C.C. Scholar 0 a.h.
009.550 Irish Liverpool Exchange Program 0 a.h.
009.660 Summer Program in Ireland 6 a.h.

Exhibit preparation at the Museum of Natural History
Program Objectives
The objective of formal legal education is to establish a sound foundation for a lifetime of professional growth. The educational elements necessary to build this foundation are varied. For example, thorough familiarity with the substance of legal principles and the creation of legal institutions is in an imponderable component. The University of Iowa places greater emphasis on developing fundamental lawyer's skills and an appreciation of the rules of law and lawyers in society. These objectives can be achieved best by educational programs that cultivate active student participation in the learning process and creates regular opportunities for individuals and small groups to continue challenging teachers who are genuinely interested in each student's professional development.

Professional skills development proceeds from an emphasis in the first year on careful reading, close analysis, legal research, organization, and clear, precise writing. Field gathering, interviewing, counseling, drafting, transaction planning, negotiation, and litigation are among the skills emphasized in the second and third years. Internships in big firms or in government agencies provide exposure to a wide range of legal problems.

Program of Study

Full-Time Policy
The faculty believes this students receive a better legal education when they devote full-time effort to the study of law. For this reason, although attendance is required for full-time students during the first year, only one class of work, work and complete all required courses, achieve a cumulative weighted average of 60, and satisfy the college's free-text research and writing requirement.

First-Year Small-Section Program
One of the distinctive benefits of legal education at The University of Iowa is the first-year small section class which integrates training in both lawyer skills into substantive course material. Development of each student's skills in legal analysis, argumentation, writing, and research.

Summer Session
The summer session consists of two periods of five and six weeks during which six to eight courses are offered. Summer courses are offered in either or both periods. Accelerated students attend the entire 11-week session.

Legal Clinic
Students who have completed one-half of the work toward their J.D. degrees are eligible to participate in the College of Law Legal Clinic, which provides opportunities for students to apply their theoretical knowledge to real cases under the supervision of faculty members, other attorneys, or other professionals. Students participate fully in interviewing, fact investigation, pretrial discovery, negotiations, and the representation of clients in a wide range of civil and criminal cases. Students in the clinic program represent indigent persons in bankruptcy proceedings, real property transactions, and other matters. Students in the clinic program are not paid and must pay the full tuition. Undergraduate students are not eligible to participate.

Options for Full-Time Study
The college offers two starting dates for entering students: late May or the beginning of the summer session (or late August at the beginning of the fall semester). Most students elect to enter law school in the fall and expect to graduate in May of their third year of study. These students may attend summer school at any point during their career. A class of up to 45 students is allowed to enter law school in May of the year for which they applied. Students in the entering class complete nearly a full semester of work in the first 4.5-week summer session, and if they remain on the accelerated track by attending summer school in each subsequent summer, they can graduate nine months earlier than would otherwise be possible. Thus, the accelerated student who began law school in May 1988 may graduate in August 1990.

Underclass Program
In the second and third years, students have the opportunity to gain exposure to a broad array of substantive areas of the law, to concentrate career work or writing and research opportunities in particular areas of interest (e.g., through specialized courses and seminars), and to expand their training in oral and written advocacy skills. In interviewing and counseling, in negotiation, and in litigation. Very few requirements exist in the second and third years. All students must take 91:319 Appellate Advocacy in the second year. Before graduating, it must take 91:220 Constitutional Law I and 91:308 Professional Responsibility.

Each student must earn five writing credits in order to graduate. Students earn one of the credits automatically by satisfactory completion of 91:210 Appellate Advocacy I. They earn the remaining four credits through any combination of courses and activities that carry writing credits, including participation in moot court, trial practice, drafting courses, independent research projects, and summer legal writing courses. It is the student's responsibility to identify the four courses and activities that will be counted toward earning the four writing credits.

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Students may earn up to a total of 15 semester hours in the graduate program, although students taking courses in other schools or colleges of the University may receive no more than 20 semester hours of credit for each course plan prior.

In addition to those programs carrying academic credit, the College of Law participates each summer in the County Attorney Internship Program, through which students work as paid employees for county attorneys throughout the state.

Joint Law and Graduate Degree Program

The College of Law has developed a number of joint degree programs with the graduate institutions of the University of Iowa. These programs enable students to simultaneously pursue degrees in both colleges. Under this program, if a student takes a course that is relevant to both degrees, the course can, with written authorization, be counted toward both the semester hour requirements of both programs, thereby reducing the time required to obtain the two degrees separately. It is hoped that joint degree students contribute to each discipline the insights and experience gained in the other.

Joint degree programs have been initiated with the graduate departments of Accounting, American Studies, Anthropology, Business Administration, Economics, Educational Administration, English, Finance, Journalism, Mass Communication, Health-Y, Hospital and Health Administration, Hotel, Restaurant and Human Resource Library and Information Science, Music, Philosophy, Political Science, Psychology, Social Work, Spanish, and Urban and Regional Planning. Further information about joint degree programs is available from the dean of the College of Law.

International Legal Studies

In keeping with its educational mission of encouraging the acquisition of broad social awareness and technical professional competence, the College of Law offers a strong program of study in the rapidly expanding field of international, comparative, and foreign law.

It does so essentially for three reasons. First, the rapid and almost revolutionary advances in accelerating global interdependence may create problems that require knowledge and understanding of international law and foreign legal systems. Second, on professionals and community leaders, lawyers often are called upon to influence, both directly and indirectly, the theory and conduct of United States foreign policy. And third, the study of international and comparative law allows unique insight into the nature of law and legal process. It is hoped that in so doing, the necessary theoretical foundations upon which superior lawyering skills depend.

Master of Comparative Law Degree Program

The College of Law offers a one-year Master of Comparative Law (M.C.L.) degree to law students interested in learning about the legal systems outside the Anglo-American legal tradition. Candidates take a seminar that gives them a general orientation to the American legal system; they also write at least one substantial research paper. The balance of their course work is taken from the regular course offerings of the College of Law.

In recent years, graduates of this program have included law students from the Federal Republic of Germany, France, Italy, Kenya, the National Republic of China, Pakistan, the People's Republic of China, the Republic of South Korea, and Thailand.

Major in International and Comparative Law

Students may elect to earn a J.D. degree with a declared major in international and comparative law. Fulfillment of the requirements for this program, which are no more than those for the ordinary J.D. degree, is recognized by special academic acknowledgment on the J.D. diploma.

The J.D. with major in international and comparative law ordinarily takes four years to complete. Students must successfully complete 120 semester hours of academic credit. Thirty must be concentrated in international and comparative law, with 18 of the 30 taken after successful completion of the 50 semester hours of academic credit required for the ordinary J.D. degree.

The prerequisite of 50 semester hours of concentrated work in international and comparative law must be satisfied by fulfillment of the following three requirements:

Successful completion of 22 semester hours of academic credit in international and comparative law, earned through required and elective course work in international and comparative law, approved by the J.D. degree candidate, and approved by the faculty of the College of Law.

Successful completion of at least 4 semester hours of independent study, research, and writing in international and comparative law, culminating in the completion of a treatise paper of publishable quality; this requirement may be satisfied only after the successful completion of 50 semester hours of credit toward the ordinary J.D. degree.

Successful completion of at least 4 semester hours of independent study, devoted toward international and comparative law, this requirement may be satisfied only after the successful completion of 50 semester hours of credit toward the ordinary J.D. degree.

Students electing to earn a J.D. degree with declared major in international and comparative law are strongly encouraged to seek advice early in their law school careers from the chair of the program.

Student Life

There are currently 15 student organizations at the college, 3 student produced scholarly journals, and 3 cocurricular programs, each nurtured by students that offer specific skills training.

The University Environment

The law school is an integral part of the University, yet in some ways it retains a separate entity. It is located on the west side of the Iowa River, a five-minute walk from the main campus. The law building houses the school's administrative offices, moot court, library, bookstore, conference rooms and classrooms. Names and faces quickly become familiar around the law school, helping entering students become comfortable with their surroundings soon after school begins.

Law School Placement

The College of Law Placement Office provides career planning and job search assistance to students throughout their undergraduate years. The placement office sponsors a comprehensive series of informational programs on career options and job search skills. It also maintains a library of professional resources and provides opportunities for individual advising by professional staff. Job search assistance is also available to alumni.

A law degree from Iowa is a highly respected credential in the job market. Iowa graduates hold prominent positions on the bench, in law, in government, in business, and in education throughout the country. The special rigor that characterizes Iowa's distinctive brand of legal education attracts a wide variety and growing number of recruiters to campus each year. During the most recent academic year, representatives of more than 380 employers visited Iowa City to conduct interviews. Law firms used the college's placement office to search for prospective employees through written inquiries and off-campus interviews.

Iowa graduates have little trouble finding employment, and more than 90 percent are employed within a six-months of graduation. The placement staff is happy to talk with prospective students regarding the college's programs and the success of its graduates.

Facilities

The William L. Boyd Law Building, completed in the spring of 1986, exemplifies
Town's continuing commitment to legal education and the legal profession. The large, circular structure reflects the special character of the library's role as an integral part of the college to operate in a physical environment that is designed to provide the college's academic and professional programs.

Classrooms in the new building provide an atmosphere conducive to the college's goals. They are conditioned, carpeted, and completely equipped. Small seminar rooms, the clinical area, and special purpose learning areas are distributed throughout the building to permit students and faculty to work together in close professional interaction. The largest classroom seats only 100 people. The student lounge, faculty lounge, and faculty offices are located on the same floor, encouraging interaction between the student body and faculty members.

Library

The centerpiece of the building is the law library, which houses the collection currently located in the United States. Iowa's collection exceeds 22,000 volumes and covers a full range of Anglo-American, foreign, international, and comparative law. The law library is one of the 30 largest law libraries in the United States and has received a distinguished Federal Depository Library designation from the U.S. government. The library's patrons include students, faculty, and other law-related professionals.

The library system includes a computerized cataloging system and online access to legal databases. The call number system is based on the Library of Congress Classification system. The library is open from 8 a.m. to 7 p.m. Monday through Thursday, and from 8 a.m. to 5:30 p.m. on Friday.

Financial Aid

A comprehensive financial aid program at the college is in place to assist all students who need funds to attend the college full time. However, since the financial resources of the law school are adequate to subsidize the full cost of a legal education for every student, applicants and their families are expected to make a reasonable contribution to provide a reasonable portion of the students' expenses. Applicants are urged to contact the financial aid office at the college for further information about types of aid available.

Admission

Applicants for admission must have earned a baccalaureate degree from an approved college or university prior to commencing work at the University of Iowa College of Law. The services of the College of Law at the University of Iowa may be unsuitable for persons who are not in good health or who are older than 50 years of age. The college's admission policies are designed to accommodate students who have the knowledge, skills, and abilities to succeed in a law school program.

Iowa law students are required to follow the academic requirements of the college. The college's academic program includes at least 120 credit hours of coursework, including an upperclass year seminar in which students are required to participate. The college's academic program is designed to provide students with a comprehensive legal education.

Application Procedures

Applications may be obtained by writing to the Director of Admissions, The University of Iowa, College of Law, Iowa City, IA 52242. Students must submit their application for admission to the college before the beginning of the summer session in the fall semester in which they wish to enter. Applications should be returned to the director of admissions.

An examination fee of $20 must accompany each application. There is a nonrefundable fee of $400 in addition to the examination fee. Students who are accepted to the college are required to pay the college's tuition and fees in full and to meet the financial aid requirements. The college's financial aid program includes scholarships, grants, and loans. Applicants are responsible for submitting a financial aid application form in the college on which they have applied to the college.

LAW ADMISSION APPLICATION SERVICES (LASAS), 2000, New York, N.Y. (212) 968-9888. The College of Law should receive the applicant's Law School Admission Services (LSAS) report prior to the March 1 deadline for Fall admission. In the LSA/LASAS registration packet, applicants will find Law School Application Matching Form. To protect the right to privacy, LSAS has agreed not to release LSA/LAS registration to any school that does not furnish LSAS with a Law School Application Matching Form.

The University of Iowa cannot process an application without a Law School Application Matching Form. Therefore, applicants must attach the form to their application. Otherwise, processing of the application is delayed until the form is received.

Law School Admission Test

Applicants for admission must take the Law School Admission Test (LSAT) administered by the Law School Admission Commission (LSAC) for the law school to which they wish to apply. The LSAT is given several times each year and may be taken at numerous locations in the United States and abroad. Applicants are urged to take the exam during the fall preceding the fall or spring semester for which they are applying.

The last test that is considered by the admissions committee for the fall or spring semester is the test given in February. However, if the test is taken in January, it may placed under the law school's competitive disadvantage because it takes at least four weeks for the college to receive and review the results. In February, the admissions committee must have the application on file with the LSAC by the March 1 deadline. Foreign students are eligible for the law school's competitive disadvantage, but their application must be received by the deadlines as set forth by the College of Law.

Deposit

Applicants accepted prior to April 1 are required to make an advance deposit of $50 by April 1. Applicants who accept the offer of admission must make the deposit within two weeks of accepting the offer. There is no charge for late application. If the deposit is not made within two weeks, the application is considered closed.

Admission to the Iowa Bar

A roll-admitted student is one who is admitted to practice law and is eligible to take the bar examination. All students who intend to apply for admission to the Iowa Bar in

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Dean: John W. Eckert
Senior associate dean: Cyril A. Jochwinderer
Associate dean, academic affairs: Rex
Managing
Associate dean, continuing medical education: Richard M. Cady
Associate dean, medical student affairs and curriculum: Charles W. Henry
Associate dean, Veterans Affairs: John E. Keck
Assistant dean, administrative and finance: William L. Littlebridge

Consultants to the dean: Andrew W. Morris
Paul W. Sandhake
Assistant to the dean: Richard K. Schroth
Degrees offered: 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 health Colleges of Dentistry, Medicine, 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 continuous medical education, in which several thousand practising physicians update their knowledge and skills through refresher, short courses, clinics, and conferences each year. It also extends and maintains educational opportunities in outreach health centers of the state, and it provides a statewide educational health care resource.

Beyond its academic responsibilities as the only college in Illinois that offers 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 advise 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 associated medical sciences programs of education for physician assistants, medical technologists (with tracks in biochemistry and medical technology), physical therapists, and nuclear medicine technologists.

Medical and associated medical sciences students have several opportunities to gain hands-on experience in physicians' offices and community hospitals. For medical graduates, the College coordinates the University's practice-affiliated residency programs in six cities throughout the state. The college promotes and sponsors experimental programs that demonstrate methods of organizing health services at the local level. Accredited by the Liaison Committee on Medical Education, the American Medical Association, and the Association of American Medical Colleges, the University of Illinois College of Medicine meets the requirements of all state licensing boards. Its diploma admits the holder to all professional and graduate medical schools and medical licensure before such boards. All other professional programs administered by the College of Medicine are accredited by their respective accrediting bodies.

Faculty

Nearly all College of Medicine faculty members are full-time, work from practice and research being part of—yet apart from—their work in teaching. Many have earned national and international honors.

Graduate Programs

The college offers programs leading to graduate degrees through the Doctor of Philosophy is anatomy, biochemistry, microbiology, hospital and health administration, human genetics, pharmacology, physiology and biochemistry, 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 programs for careers in medical science and academic medicine with emphasis on research and teaching. With support from the National Institutes of Health, the program meets the requirements for doctoral training in scientific basic to medicine with the full clinical requirements of the medical curriculum. The program entails six to seven years of study. Further details are given in the program description.

Combined M.D.-Master's Degree Programs

Students who want to pursue the M.D. degree in combination with a Master's degree program must gain admission to both the College of Medicine and the Graduate College and must meet detailed requirements with the graduate department chair and the associate dean for medical student affairs of the College of Medicine.

Interdisciplinary Programs and Centers

Interdisciplinary programs and centers have been developed that draw strengths from the faculty of the college and the facilities available to them, without regard to their departmental units or to the institutions of graduate and postgraduate training. Notable among these are the interdisciplinary programs in endocrinology and immunology, in which degrees are not offered, students receive emphasis through appropriate selection of a study program. Further information can be obtained from the associate dean for academic affairs.

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 mission of the Graduate Program in Hospital and Health Administration since 1981. It is the University-wide focal point for a broad-based program of health services research. With the coordination and support of the CHSR, faculty and staff from colleges and departments in the University's College of Medicine, the College of Veterinary Medicine, and the College of Human Development and Family Studies participate in interdisciplinary research in the broad field of health services research.

CHSR interests range from a broad spectrum of health services research to specific areas of investigation, including economics, psychology, organizational behavior, psychology, sociological research, sociology, preventive medicine and environmental health, immigration and community dentistry nursing, and clinical medical research. Through its research activities, the center promotes links among health organizations throughout the Midwest.

CHSR also sponsors frequent exchanges with professional and provider associations, policy and planning groups, insurance organizations, health delivery institutions, and other members of the health services research community.

As the driving force behind formation of the Health Services Research Consortium, the center has developed affiliations with the Veterans Affairs Health Services Research and Development Field Programs, the Mercy Consortium for Health Services Research, and the National Institute for Rural Health Policy.

Clinical Research Center

The Clinical Research Center provides the setting for patient-oriented research of disease processes. Studies of normal biology and biochemistry also are conducted. The center is a discrete unit within the bed, patient, and nursing staff and is financed by federal, state, and private sources. Functioning in close coordination with the University's Hospital, it provides for the utilization of personnel and its own resources for the benefit of the patient.

The University's Clinical Research Center has been awarded the status of a Clinical Research Center of the National Institutes of Health (NIH) as a Clinical Research Center (CRC) and the status of a Clinical Research Center (CRC) of the National Institutes of Health (NIH) as a Clinical Research Center (CRC) of the National Institutes of Health (NIH).

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Basic Medical Sciences (First Three Semesters)

The first three semesters present a core of sciences basic to the study of medicine.

First Semester
- 99:165 Biochemistry for Medical Students is offered around a series of clinical situations. The language of this discipline is presented in the context of problems the physician will see in the small group discussions that follow the clinical series. Students start the semester with basic problem-solving approaches.
- 60:103 Gross Human Anatomy for Medical Students includes clinically relevant areas of histology, pathology, and surface anatomy with clinical correlations. This course teaches the human body is understood, and the relationship to the living human is stressed.
- 60:104 Medical Embryology offers insights into human embryology, with emphasis on the clinical aspects of development. Registration is limited to medical students; graduate students are referred to 69:217. The course is offered fall semesters.
- 60:105 General Histology 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.
- 112:105 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 meaningfully with patients and colleagues.
- 63:110 Bioethics provides guidelines for the application of scientific principles to the biological and medical sciences. Emphasis is given to the interpretation of studies published in the medical journals.

Second Semester
- 72:317 Medical Physiology offers students an understanding of responses that an organism gives to outside stimuli and provides a basis for understanding the integration of functions of organ systems. Much of the material in these two courses is presented from a cellular point of view. In small discussion groups, which have essentially replaced laboratory exercises, students present their evaluations of the physiological mechanisms at work in the cellular material. Some demonstrations are used.
- 61:353 Medical Microbiology includes immunology and presents a core of information on the classification and immune response of infectious agents, as well as certain aspects of Lysy response to these agents. Laboratory work plays an important role in this course.
- 93:234 Medical Neuroanatomy is an integrated course dealing with basic principles of neuroanatomy and physiology, with emphasis on the human central nervous system. The laboratory primarily portrays the anatomical study of spinal cord and brain.
- 93:231 General Pathology for Medical Students is correlated with microbiology in the semester to increase efficiency of the learning process. Emphasis is placed on pathophysiologic and clinical aspects of infection and disease. A laboratory of studies and discussion periods have replaced laboratories in this course.

Third Semester
- 93:232 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 fostered by disease groups and case practice in case analysis.
- 63:105 Preventive Medicine provides fundamentals to help prepare students in some of the socioeconomic, economic, and public health aspects of medical practice.
- 115:105 Pharmacology for Health Sciences: Medical bridges the clinical and basic sciences and provides students with principles that must be understood in order to describe properly the actions of drugs in patients.
- 60:15 Biomedical Ethics covers ethical vocabulary, the processes of moral reasoning, and illustrates principles increasingly prevalent in modern medical work. Several elective courses are available to students during the third semester. These cover a semester of each.
- Topics include areas not specifically covered in the required curriculum and relate more specifically to the medical practice and the professional life of the physician. Typical examples are Perspectives in Aging, Human Nutrition, and Spanish for Health Professionals.

Introduction to Clinical Medicine (Fourth Semester)

A major interdepartment course, 50:111 Introduction to Clinical Medicine, offers the fourth semester. It includes participation by a large percentage of the faculty and is vital in providing students with the tools for a lifetime of patient care.

The first series of meetings is devoted to introducing 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 reviewed by teams of clinicians and basic scientists. The first group of meetings is open in areas of organ systems that do not fall directly into organ systems, and on reinforced of some key subjects.

Throughout the 16 weeks of the course, students spend two hours a week in clinical medicine, six weeks in surgery, pediatrics, psychiatry, and obstetrics and gynecology, and two weeks each in anesthesiology, dermatology, neurology, ophthalmology, head and neck surgery, orthopedics, urology, and family medicine. Students spend most of this time in Iowa City except during the family practice clerkship, which exposes students to primary care in a physician's private practice somewhere in Iowa.

The clinical clerkship year is the most critical period of time in medical education. For it is during this time that students take on the posture of physicians in Iowa and that the necessary role of the student is viewed at the bedside, and to understand the physician's responsibility for human life.

Period 1 Selective Study (Fourth Year)

Following the clerkship, the fourth year provides a period of selective study, during which students are guided by faculty in a comprehensive exploration of the different medical disciplines and the level of clinical sophistication achieved during the clerkship year. Students are required to participate 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 therapeutics.

Financial Aid

The College of Medicine provides financial assistance in the form of a demonstrated financial need. Most aid is in the form of loans. The Health Professions Student Loan and Graduate Student Education Loan programs are federally funded or sponsored programs. The Medical Education Assistance Program, Carroll Brown Medical Student Loan, and Sneed Loan are College of Medicine programs. The Dr. George Scates Medical Loan Fund is available through the Iowa Medical Foundation of the Iowa Medical Society.
A limited number of grants are awarded in each term. A student may receive a grant only once and only one type of grant may be received.

Educational Opportunities Program

The Educational Opportunities Program provides financial and educational assistance to disadvantaged students from groups that are underrepresented in American 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). The non-centralized application processing service for applicants to U.S. medical schools, Preliminary applications are processed by AMCAS beginning June 15 of the year preceding the beginning of the class for which applications are being made. Prospective students are urged to apply as early as possible. The closing date is December 1.

A personal interview will be arranged for applicants who AMCAS applications pass a review conducted by the College of Medicine. An interview must accompany the final application from applicants who have not completed work in residence at The University of Iowa. This fee is refundable except to residents of Iowa who are denied admission.

Admitted applicants must file with the University of Iowa, the official transcript from each college attended.

Requirements

Applicants for admission to the College of Medicine must have received the baccalaureate degree, or have completed three years of a curriculum qualifying them to receive the baccalaureate degree after completing the first year in medicine, or have completed three years of a baccalaureate program meeting the general admission requirements of the college they are attending.

Prospective students must have earned at least 60 semester hours of credit, or the equivalent, including:

- Physics, a college introductory course;
- Mathematics: college algebra and trigonometry, or advanced college mathematics for applicants who completed calculus, algebra, and trigonometry in high school;
- Chemistry: at the minimum, a complete introductory course in organic chemistry, ordinarily following a complete introductory course in general chemistry with a laboratory component.
- Biological sciences: a complete introductory course in the principles of animal biology, or anatomy and biology (not botany alone), and an advanced biology course.

All the foregoing must be taken with appropriate laboratory components.

Applicants for admission to the College of Medicine must possess the capability to complete the entire medical curriculum and achieve the Doctor of Medicine degree. The usual curriculum requires demonstrated proficiency in a variety of cognitive, problem-solving, manipulative, communicative, and interpersonal skills. Therefore, candidates admitted to the College of Medicine must be able to:

- Complete demonstrations and experiments in the basic sciences;
- Learn to analyze, synthesize, and solve problems and to reach diagnostic and therapeutic judgments;
- Adequately use the senses of vision and hearing and the olfactory sense;
- Perform palpation, auscultation, and percussion;
- Relate reasonably to patients and establish meaningful professional relationships with them;
- Communicate the results of examinations to patients and their colleagues with accuracy, clarity, and efficiency;
- Learn and perform routine laboratory tests and diagnostic procedures;
- Display good judgment in the assessment and treatment of patients;
- Learn to respond with promptness, precision, and appropriate action in emergency situations;
- Accept criticism and respond to appropriate modification of behavior;
- Show 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 underwriting of admission.

Completion of the specific requirements for admission does not ensure admission to the College of Medicine. From applicants meeting the requirements, the admissions committee of the College of Medicine selects those who appear to be best qualified for the study and practice of medicine.

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 attained a grade-point average of at least 2.50 for all college work undertaken. Courses are available on a graded or pass/fail basis. It is expected that applicants will have taken the required science courses for a grade.

Preference is given to applicants with high scholastic standing who are residents of Iowa. Coordination is also given to outstanding nonresidents.

Applicants are required to take the Medical College Admission Test administered by the American Medical College no later than the fall of the year preceding that for which they are seeking admission. Students may arrange to apply for the examinations through the University's Evaluation and Examination Service.

Personnel interviews are not usually conducted but are occasionally requested by the admissions committee. Applicants who feel that an interview is necessary may request that one be arranged by contacting the coordinator of admissions. Requests for interviews normally should be made before January 1. The specific purpose of an interview should be clearly stated.

Applicants accepted on or prior to February 15 must submit an $80 advance payment by March 1. Applicants accepted after February 15 must submit this payment within two weeks after they receive notification of acceptance. The advance payment is credited toward tuition and fees.

All students entering the College of Medicine should have participated in the pre-medicine and periodic health screening programs offered by the University of Iowa. Health Service in cooperation with The University of Iowa Hospitals and Clinics.

Promotion Policies and Procedures

Promotions Committee

The purpose of the promotions committee is to ensure that each person who graduates from the College of Medicine has adequate skills, knowledge, judgment, ethical standards, and personal integrity to assume the responsibilities of a medical doctor. To perform its duties, the committee depends on the cooperation, advice, and judgment of faculty, students, and administration.

The promotions committee consists of six members and the associate dean for medical student affairs ex officio (without vote). There are five faculty members, one of whom is designated by the dean to serve as chair. Two are from two basic science departments, and three are from three clinical departments. There is a medical student member nominated by 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 appoints the student member after consulting with the
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 provost's committee to permit a student who has not satisfactorily completed courses in a preceding grading period to continue provided an appropriate tutorial program is designed for that 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 competency 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 tasks that all students adhere to general 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.

Scholastic performance in the first three years is reported by the letters D, F, P, and I, the selective student grade, only grades F, P, and I are used. A grade of I indicates "incomplete," indicating achievement at an exceptionally high level. The letter I indicates work below the passing level. The letter I is used when, for good reasons, the student has not completed the work in a course.

The promotion committee meets at least twice each year, following the completion of each academic semester and on other times as requested by the associate dean for medical student affairs.

The committee reviews the records of all students who have received a grade of F or I during the preceding grading period. The committee reviews the record of any student whose progress on course during the semester or the associate-dean for medical student affairs-allows the student continually poor academic work, or failing to demonstrate competence in any of the eleven skills or abilities detailed above, or not meeting the minimal ethical standards. The committee considers other business or activities deemed necessary to perform its duties as set forth in this charge.

The promotion committee recommends specific actions to be taken in the case of any student whose work, performance, judgment, or ethical behavior is in any way considered unsatisfactory. These recommendations are forwarded for action to the medical council and executive committee, meeting in joint session to represent the faculty. Possible recommendations include immediately dismissing the student from the college, requiring the student to repeat all or any part of the curriculum, and allowing the student to continue either a regular or a decelerated schedule.

Students having unreported grades of failure are placed on academic probation. A grade of "dropped" is not remedial in the time and manner specified in the promotions committee recommendation, becomes a grade of failure. Students who are on academic probation are considered for dismissal if further academic difficulties exist.

The promotions committee presents all recommendations for overcoming the degree, Doctor of Medicine, to a joint meeting of the medical council and executive committee, which acts on the recommendations for the faculty.

Medical students are not permitted to drop courses after the deadlines established by the dean of the College of Medicine until they have received the dean's permission. Students who receive permission to drop a course 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 guidance and counsel to students and act as a resource for and provide advice to the promotions committee.

Appeals

Students who want to appeal promotion decisions may appeal by filing an appeal writing to the dean of the College of Medicine within two weeks of the date of written 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 and to answer questions.

Leaves 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. 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 may request that a leave begin during a clinical clerkship or clinical elective must obtain permission from the course director.

Any unexcused absence from a major section of a basic science course or a clinical clerkship may result, at the discretion of the department, in a grade of F.

Withdrawal

Students may withdraw from the College of Medicine upon approval of a written application submitted to the dean of the associate dean for medical student affairs.

Reinstatement

Application for reinstatement by students who have withdrawn voluntarily or who have been medically withdrawn if the college must be received in writing to the office of the dean at least four months prior to the requested date of readmission.

The faculty is authorized to refuse reinstatement 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, reinstatement 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 resolution by the best way to resolve the problem. The medical school has a formal procedure, outlined in "Promotion Policies and Procedures," and an informal procedure, outlined below.

In the College of Medicine, although with the problems or complaints should first attempt to be corrected at the departmental or even class level. If a satisfactory outcome, the student then should report to the course or clerkship director or chair and唯有 still not obtained, may dismiss the complaint informally with the associate dean for medical student affairs and the associate dean for medical student affairs in the College of Medicine. The informal alternatives does not necessarily lead to involvement of the office of the dean of student affairs. Should these steps 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 entries in the student's permanent record, which is part of the formal procedures. However, informal procedures are intended for any situation situations may encounter, including grading disputes, alleged academic dishonesty, alleged discrimination during clinical rotation (e.g., refusing patient diet) or perceived lack of communication or harassment. Complain of sexual harassment are handled confidentially and in accordance with University Policy and Procedures.
Divisioh of Associated Medical Sciences

The division offers a B.S. degree in medicine. The M.D. and M.A. degrees offered by the Physical Therapy Program, the M.D. and M.D./M.B.A. degrees are in cooperation with the Department of Cell Science in the Division of Physical Education, and the M.S. Physician Assistant Track in Preventive Medicine and Environmental Health are offered through the Graduate College and are subject to its policies.

General Policies

Advising

When a student declares their intended major to be one of the programs in the Division of Associated Medical Sciences, they are assigned to that program for academic advising.

Admission

Students are admitted to the College based on their academic performance and their ability to meet the requirements of one or more programs. Admission policies and procedures vary from program to program. The Physician Assistant and Nuclear Medicine Technology programs have an early admission process. Students should consult the individual program descriptions and/or program offices for details of the admission processes. Students may be admitted at degree or nondegree candidates (special students). Nondegree candidates are subject to College of Medicine guidelines for academic probation and dismissal.

To be considered for admission, applicants must have earned a cumulative grade-point average of 2.00 in all college work attempted and be accepted as appropriate to each program: medical technology, 2.00; nuclear medicine technology, 2.50; and physician assistant, 2.50. Admission committees give special attention to grades in the sciences, particularly the 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. Admission should be considered for further information.

Financial Aid

Students in the Division of Associated Medical Sciences and graduate programs are eligible to apply for undergraduate financial aid. Scholarships, grants, loans, and part-time job placement are administered by the University's Office of Student Financial Aid and are awarded on the basis of demonstrated need. Part-time work in related areas is sometimes available.

Graduation Requirements for Baccalaureate Degrees

General Requirements

Students must earn a minimum of 124 semester hours of credit. The number required after admission to a specific program varies from program to program. Students should consult the program description and/or program director for more specific information.

The general requirements for graduation include quality as well as quantity of work completed. Candidates must earn a minimum grade-point average of 2.00 in all college work attempted and have a 1.00 average in the work required for the major at The University of Iowa, and all grades work attempted after admission to the College of Medicine. Students enrolled in B.S. programs that earn the baccalaureate degrees must pass all courses required to complete the program.

The residence requirement may be met by earning the final 30 convocational semester hours in residence, or at least 30 semester hours in residence, or an overall total of 30 semester hours in residence.

Nondiscrimination instruction includes course work at other colleges and universities, course work in other undergraduate colleges at The University of Iowa, and all work by correspondence, including University of Iowa Guided Correspondence Study courses.

General Education Requirements vary from program to program. Applicants must check the requirements of the specific program or degree objective. Specific Requirements for the major are listed at each program description.

Double Majors

Students may earn more than one major in the College of Medicine by meeting the requirements for each major.

Two Baccalaureate Degrees

Students who want to earn two baccalaureate degrees, each from a different college, must do so under a combined degree program and must have their combined course of study approved by their respective colleges. Students pursuing two degrees must be in consultation with the appropriate college deans.

Second Baccalaureate Degree

Students who already possess a baccalaureate degree and who want to earn an additional bachelor's degree must complete at least 30 convocational semester hours in the College of Medicine. Students who hold a B.A. or B.S. degree will be considered to have satisfied all General Education Requirements for graduation in the foreign language requirement. Holders of other degrees must meet college and program degree requirements. Students with B.A. or B.S. degrees must satisfy the minimum requirement for a bachelor's degree at Iowa. Candidates for a second bachelor's degree must apply for the degree through the Office of Admissions.

Combined Baccalaureate Degree Program

Students may earn two University of Iowa baccalaureate degrees in a combined curriculum program in the Colleges of Medicine and Liberal Arts. Although students begin their academic program in the College of Liberal Arts, they must be eligible for admission to College of Medicine to complete their degree. Students must be in consultation with the College of Medicine to determine that their chosen program will satisfy the requirements of both colleges. Students in the combined degree program must complete their course work in both colleges at the same time. The exact sequence of courses in each college is determined by the major department of the College of Medicine and the other in the major department of the College of Liberal Arts. Students who transfer to the combined degree program must satisfy all requirements for both degrees. Students must complete an overall total of 154 semester hours of credit, including at least 30 semester hours of courses offered by the College of Liberal Arts and a total of 30 semester hours of courses offered by the College of Liberal Arts.
Students interested in the combined degree program should see the director of the baccalaureate program of their choice in the College of Medicine.

Minors
Students graduating from the College of Medicine may earn a minor or minors in any degree-granting department or program in the college outside of their major department or in another college of the University by meeting that department's requirements for the minor. 15 graduate hours is the minimum of 15 semester hours must be taken in the minor.

Application for Degree
Students who want to be considered for graduation must file an application for degree with the Office of the Registrar before the deadline for the session in which the degree is to be conferred. Students who file after the deadline must indicate this on the degree application for the completion of the requirements for the minor can be verified.

Duplication
Duplication occurs when students take the same course more than once or when they take a course that duplicates the content of a satisfactorily completed course. A student shall have satisfactorily completed a more advanced or higher level course in the same subject. Duplication and repetition are assessed by the registrar at the time of promotion. Students who file after the deadline must indicate this on the degree application for the completion of the requirements for the minor can be verified.

Graduation Honors
Approximately ten percent of the division’s graduating students may be recognized for their high academic achievement upon recommendation by the program and with the department’s approval. Minor honors have been established for the following designations: distinction, high distinction, and highest distinction.

Registration and Grading
Students are not allowed to register after the third week of the semester or the first week 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 advisor and the course instructor at any time during the first one-third of the course. They may be dropped at any time during the last 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-third of the course.

Other changes in registration (such as to audit for 0 credit) may be made only during the first one-third 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 Registrar. Changes in registration become effective on the date the completed form is submitted to the Registrar. A mark of W (withdrawn) for any course dropped after the deadline for that session.

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It is the student's responsibility to see that the change of registration form is approved by the necessary individuals and delivered to the Registrar. Changes in registration become effective on the date the completed form is submitted to the Registrar. A mark of W (withdrawn) for any course dropped after the deadline for that session.

Credit by Examination
The procedure for the acceptance and the granting of credit by examination varies from program to program. The program director would be consulted for further information.

Reports to Students
Instructors contact any student whose work falls below the minimum acceptable level when the problem is recognized. Grades are reported on the student's transcript. Following University policy. No formal midterm 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 degree and certificate. Students who fail to maintain satisfactory academic progress or professional standards of behavior as determined by the program are placed on probation. Probation serves as a warning that students will not graduate unless their academic performance and/or professional behavior improves.

Students on probation are required to provide the program director with evidence that the problem has been corrected. Such action is usually taken at the end of a semester or summer session. Entering students may be placed on probation if they fail to meet the minimum stated standards for admission.

Continued unsatisfactory scholarship or unsatisfactory behavior may result in dismissal. Students dismissed from a program must reapply for admission through the regular established program admission process. Students dismissed from a program are notified in writing of the decision, at least four months prior to the next session.

Students placed on probation or dismissed from a program are notified in writing of
Graduate Programs

Master of Science

Admission to the M.S. program is limited to individuals who hold a bachelor's degree in health professional sciences, and individuals who are admitted to the program and who meet the minimum score requirements on the Graduate Record Examination General Test. Candidates are required to have completed an additional year of advanced study in the health sciences. The department's program is designed to provide students with the knowledge and skills necessary to function as health professionals in a variety of settings.

Doctor of Philosophy

Students in the Ph.D. program work closely with a faculty advisor to develop an individualized program of study. Students are required to complete a minimum of 90 credits beyond the bachelor's degree, including coursework and a research project. The program is designed to prepare students for careers in research and teaching.

Facilities

The department occupies over 15,000 square feet in the Brown Science Building on the health sciences campus. These quarters house modern teaching facilities and well-equipped research laboratories. The state-of-the-art instrumentation is available, including facilities and equipment for electron microscopy, microspectrophotometry, and computerized tissue culture and protein chemistry, and automated genetic analysis.

Courses

061 Human Anatomy 3 cr.
063 Human Physiology 3 cr.
065 Human Histology 3 cr.
067 Human Nutrition 3 cr.
070 Human Development 3 cr.
071 Human Growth 3 cr.
072 Human Biomechanics 3 cr.
073 Human Endocrinology 3 cr.
074 Human Psychology 3 cr.
075 Human Sociology 3 cr.
076 Human Ecology 3 cr.
077 Human Geography 3 cr.
078 Human Economics 3 cr.
079 Human Politics 3 cr.
080 Human Health 3 cr.
081 Human Health 2 3 cr.
082 Human Health 3 3 cr.
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241 Human Health 162 3 cr.
242 Human Health 163 3 cr.
ANESTHESIA

Head: John J. Tietler

Professor: Sang C. Cheon, Mohamed Choezen, David Duvall, John M. Magnuson, Christine Ogunnaike, Martin Schindler, Michael M. Tsang

Associate professors: J. David V. Hoke, David Evans, Neil W. Goss, Robert Hwang, Robert Ince, Kenneth J. Westin, David M. Berlin, David L. Przybysak


Administrative: Joanne Harrington, Mary Kastrup

The department introduces the second-year medical student to anesthesia as a specialty; helps to develop in the third-year student some concepts and technical skills related to resuscitation, airway management, and the care of the critically ill patient; and offers the fourth-year student intensive study in any and all phases of the department. Through clinical experiences, seminars and teaching conferences, and ongoing research activities the teaching assistant student or resident develop the knowledge and skills required of a specialist in anesthesia.

Courses

1161 Clinical Anesthesiology

2 s.h.

This course is a continuation of clinical anesthesiology and introduces the student to various aspects of anesthesiology. It is intended for students who have completed the core curriculum in anesthesiology, including critical care medicine, and who have completed the anesthesiology clerkship. The course includes lectures, case presentations, and laboratory sessions. The course is designed to provide a comprehensive overview of anesthesiology, with a focus on cardiothoracic surgery, pain medicine, and critical care medicine.

1161 Clinical Anesthesiology Seminar

2 s.h.

This course is a seminar that complements the clinical anesthesiology course. The seminar focuses on current topics in anesthesiology, including recent developments in anesthetic techniques, pain management, and critical care medicine. The seminar is designed to provide a forum for students to discuss and debate current issues in anesthesiology.

1161 Intensive Care

4 s.h.

This course is intended for students who have completed the core curriculum in anesthesiology and have completed the ICU course. The course includes lectures, case presentations, and laboratory sessions. The course is designed to provide a comprehensive overview of intensive care medicine, with a focus on critical care medicine, including monitoring and management of critically ill patients.

1161 Scientific Foundations of Anesthesia

4 s.h.

This course is intended for students who have completed the core curriculum in anesthesiology. The course includes lectures, case presentations, and laboratory sessions. The course is designed to provide a comprehensive overview of the scientific foundations of anesthesia, including pharmacology, physiology, and clinical practice.

1161 Special Studies in Anesthesiology

4 s.h.

This course is intended for students who have completed the core curriculum in anesthesiology and have completed the ICU course. The course includes lectures, case presentations, and laboratory sessions. The course is designed to provide a comprehensive overview of special topics in anesthesiology, including pain management, critical care medicine, and advanced anesthetic techniques.

DIVISION OF ASSOCIATED MEDICAL SCIENCES

Heidi R. Seymore

The Division of Associated Medical Sciences provides coordination of professional programs for training medical technologists (with tracks in cytogenetics, perfusion, and biotechnology), nuclear medicine technologists, radiation therapists, and physician assistants. Parallel undergraduate programs prepare students for entry into these professional areas. Students usually enroll initially in the College of Liberal Arts and are assigned a faculty advisor from the division.

Although each program in the division has its own admission requirements, the first two years of undergraduate study are similar. Each program requires a foundation in biology, chemistry, and mathematics. Students are encouraged to consult with an appropriate program advisor to ensure the proper sequencing of courses. The following is a typical curriculum for undergraduate students, with options being exercised after consultation with program advisers. Programs are abbreviated as follows: MT—Medical Technology (MT-CC=cytogenetics tract, MT-P=perfusion tract, MT-B=biotechnology tract); NMT—Nuclear Medicine Technology; PA—Physician Assistant; PT—Physical Therapy.

Freshman Year

First Semester

101 Anatomy

4 s.h.

Foreign civilization and culture

3 s.h.

Physical education skills

2 s.h.

102 Introduction to Animal Biology

3 s.h.

Total

16 s.h.

Second Semester

103 Human Physiology

4 s.h.

Histological and morphological techniques

3 s.h.

Physical education skills

1 s.h.

104 Principles of Chemistry II

3 s.h.

37-3 Principles of Animal Biology

MT, all tracks

4 s.h.

47-4 Principles of Chemistry Lab I

5 s.h.

Total

16-18 s.h.

Sophomore Year

First Semester

Humanities

3 s.h.

Social sciences

3 s.h.

4312 Organic Chemistry I (MT, all tracks)

3 s.h.

57-1 College Physics (MT, all tracks)

5 s.h.

57-3 Principles of Animal Biology

MT, all tracks

5 s.h.

61-157 General Microbiology (MT, all tracks)

5 s.h.

Physical education skills

1 s.h.

Total

16-18 s.h.

Second Semester

Historical perspectives

3 s.h.

Social sciences

6 s.h.

38-122 Writing for the Sciences

5 s.h.

38-123 Writing for the Sciences

5 s.h.

57-12 College Physics (MT, all tracks)

5 s.h.

4312 Organic Chemistry II (PA, all tracks)

5 s.h.

57-13 General Psychology (MT, all tracks)

5 s.h.

47-150 Biochemistry (MT, all tracks)

5 s.h.

38-16 Introduction to Bioinformatics (MT-CC)

3 s.h.

Total

16-18 s.h.

Students who have satisfactorily completed the above prerequisites have satisfied the minimum academic requirements for early admission to the Medical College (all tracks), Nuclear Medicine Technology, and Physician Assistant programs. Others complete the additional requirements below.

Junior Year

First Semester

Foreign language

4 s.h.

38-122 Writing for the Sciences (PT)

4 s.h.

38-162 Human Genetics

3 s.h.

38-103 Comparative Vertebrate Anatomy

4 s.h.

38-112 Cell, Tissue, and Organ 

5 s.h.

Biology

Computer science (MT, all tracks)

5 s.h.

61-17 Introduction to Clinical Pharmacology (MT, all tracks)

3 s.h.

72-130 Human Physiology (MT, all tracks)

4 s.h.

Total

15-18 s.h.
37.115 Cell Physiology 4 s.h.
60.1 Principles of Human Anatomy (NMT) 3 s.h.
72.150 Intermediate Physiology (MT, FT) 4 s.h.
37.125 Fundamental Genetics (PT, MT-CC) 3 s.h.
225.101 Biostatistics (NMT, PT) 3 s.h.
or
225.102 Introduction to Statistical Methods (NMT, PT) 3 s.h.
Total 14-15 s.h.

Senior Year
General education, elective, or advanced courses in the departments of Biochemistry, Microbiology, Chemistry, Biology, or others specified for specific degree requirements.

MEDICAL TECHNOLOGY
Director: Horace Schwindt
Assistant director: Sarah Hylke
Medical director: James A. Svetlik
Associate professor: Janet A. Svetlik
Lecturers: Ruthanne Wycho, Merian Schwindt
Assistant: Larry Kinnebrew, James O'Connor
Assistants: Wanda Kelly, Lucy T. Scott

Adjunct instructor: John Atwood, Jean Lambert, Jay Halick
Adjunct associate: Thomas Fennie
Adjunct associate in teaching: Ray Holley, Mike Bruns, Delores Conlin, Jerry Hudson, Patricia Hall, M.A. Huskett, Merian Lunsford, Rose Maggio, Beverly Penner, Dallas Peterson, Lisa Porter, Kathy Rzenasky, Laura Schuster, Brenda Stewart, Jan Vaughr-Dray, offered by A.S. in Medical Technology.

Medical technology/clinical laboratory scientists perform the laboratory tests on which physicians rely for accurate diagnosis and proper treatment of disease. They are in demand in hospitals, private and government laboratories, clinics, pharmaceutical offices, and industrial, pharmaceutical, biological, and medical research laboratories.

Medical technology/clinical laboratory scientists are highly skilled health science members who use a battery of sophisticated procedures and instruments in their work and who possess specialized knowledge and skills acquired through completion of a formal program of academic and clinical study.

The Medical Technology Program is sponsored cooperatively by the College of Medicine, the College of Allied Health, the University of Iowa Hospitals and Clinics, and the Iowa City Veterans Affairs Medical Center. Satisfaction completion of the program qualifies students to take all medical technology/clinical laboratory certification examinations. The program is approved by the Council on Medical Education of the American Medical Association and by the National Accrediting Agency for Clinical Laboratory Sciences. Assuming that students have completed the required courses indicated above in the freshmen and sophomore years, the ensuing curriculum may be as follows.

Junior Year
First Semester
Foreign language 4 s.h.
37.125 Fundamental Genetics (MT-CC) 3 s.h.
Electives 8 s.h.
Total 15 s.h.

Second Semester
60.122 Design and Analysis of Experiments in Biomedical Sciences (MT-BT) 3 s.h.
Foreign language 4 s.h.
72.150 Intermediate Physiology (all tracks) 4 s.h.
60.119 Instrumentation in Clinical Laboratory Science (all tracks) 3 s.h.
60.136 Independent Study in Immunology 1 s.h.
Electives 6 s.h.
Total 17 s.h.

Highly recommended elective courses include paramedical, quantitative analysis, and statistics.

Senior Year
The clinical program consists of a minimum of 12 months of clinical and practical instruction. The first summer session and semester of all tracks are devoted to lectures, laboratory experience, demonstrations, and seminars covering theory and technique in clinical laboratory science. During the last semester, students rotate through the clinical laboratory facilities of The University of Iowa Hospitals and Clinics, the Iowa City Veterans Affairs Medical Center, and other hospitals. They attend additional lectures and may begin a specialized track if they wish.

The program is made up of the following courses:
60.119 Instrumentation in Clinical Laboratory Science 3 s.h.
60.120 Clinical Microbiology for Medical Technologists 1 s.h.
60.121 Immunology for Medical Technologists 1 s.h.
60.122 Clinical Chemistry for Medical Technologists 5 s.h.
60.123 Immunohematology for Medical Technologists 3 s.h.
60.124 Clinical Hematology for Medical Technologists 5 s.h.
60.125 Microbiology for Medical Technologists 6 s.h.
60.126 Clinical Chemistry for Medical Technologists 5 s.h.
60.127 Clinical Immunohematology for Medical Technologists 5 s.h.
60.128 Clinical Microbiology for Medical Technologists 5 s.h.
60.129 Clinical Hematology for Medical Technologists 3 s.h.
60.131 Clinical Laboratory Science Seminar 2 s.h.
60.132 Paramedical for Medical Technologists 1 s.h.

Alternate tracks include the following courses.

Biotechnology
60.135 Independent Study in Clinical Laboratory Science 3 s.h.
60.178 Selected Biotechnical Research Techniques 3 s.h.

Cytogenetics
60.156 Medical Cytogenetics 3 s.h.
60.157 Medical Cytogenetics Laboratory 2 s.h.
60.152 Medical Cytogenetics Seminar 1 s.h.
60.155 Clinical Medical Cytogenetics 3 s.h.

Highly recommended pre-entry courses include 37.112 and 37.118.

Perfusion
60.160 Respiratory and Renal Physiology 3 s.h.
60.161 Introduction to Medical Electronics and Biophysical Monitoring 3 s.h.

60.162 Cardiovascular Anatomy, Physiology, and Pathology 5 s.h.
60.163 Neurosurgery 1 s.h.
60.164 Perfusion Technology 5 s.h.
60.165 Clinical Perfusion 2 s.h.

Techniques and Methods 3 s.h.
60.166 Pharmacology for Perfusionists 2 s.h.
60.167 Perfusion Seminar 2 s.h.
60.158 Perfusion Research 4 s.h.

Highly recommended pre-entry courses include anatomy, statistics, and physics.

Cytotechnology and Histology
Additional tracks in cytotechnology and histology are being offered, for current status or information, consult the director of the Medical Technology Program.

For course descriptions, see "Pathology" in this section of the Catalog.

Admission
The medical technology/clinical laboratory science professional program is limited to 30 students, who begin the program in late May. Applications close October 31. Fifteen students continue during the fall and spring semesters and complete the program in May. The other fifteen have the opportunity to complete accelerated prerequisite course 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 (cytogenetics, perfusion, or biotechnology) must observe the same admission process and complete the first two semesters of the program year. The amount of additional time required varies from track to track.

To apply for admission to the professional program, students must be able to complete all of the following prerequisites and University graduation requirements by the end of the professional (clinical) year.
Fourteen semester hours of chemistry, including qualitative analysis, organic chemistry, and biochemistry; 
Three semester hours of mathematics; and
Fourteen semester hours of biology, including general zoology, microbiology, and physiology.

Admission in on a competitive basis. Minimum cumulative grade-point averages at 250 overall and 250 in science generally are required. Applicants who enter the program as undergraduate students must meet the general admission requirements of the University’s College of Liberal Arts and should consult with the director of the Medical Technology Program as early as possible to plan preclinical studies to meet all requirements.

**Expenses**

Medical technology students in the professional-curriculum are responsible for their textbooks, University tolls, and student fees. Laboratory costs and equipment such as microscopes are provided by the program.

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**NUCLEAR MEDICINE TECHNOLOGY**

Director: Dr. A. Holmes
Medical director: Peter J. Kuchar
Resident directors: John A. Stoller
Professors: Frank H. Chang, Steve M. Dullan, Peter J. Kuchar, Richard E. Praslow
Associate professor: Richard Holm, Karin Nieto, James E. Zablock
Assistant professor: Mark T. Mahon
Assistant professors: David Kant, G. Leonard Vattula
Clinical-scientific associate professor: Joan H. Fuss
Visiting associate: Karen Hu-Biem
Adjunct lecturers: Kenneth R. Wilms
Degree offered: B.S. in Nuclear Medicine Technology

Nuclear medicine technology is a medical specialty that uses the past two decades and is still expanding and growing in complexity. This continued expansion of the specialty has allowed an increasing demand for highly skilled and motivated nuclear medicine technologists.

Nuclear medicine technologists generally work at 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 compounds. In all these functions, the nuclear medicine technologist works hand-in-hand with nuclear medicine physicians, health physicists, radiopharmacists, and x-ray technicians as an integral part of a highly trained specialty team.

The Nuclear Medicine Technology Program at The University of Iowa is fully accredited by the Committee on Allied Health Education and Accreditation of the Association on Medical Education of the American Medical Association. Fulfillment of the requirements established by the AHA Accreditation Board involves three years of practical work in the College of Liberal Arts and Sciences of Medicine, and a certificate of 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 degree from the College of Medicine and a certificate of graduation. 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 year.

Applicants are strongly advised to pursue a course of study that is applicable to a baccalaureate degree, most commonly in biology, chemistry, biochemistry, or microbiology. In this way, students who are not admitted to the NTP program can complete a degree in their chosen area.

**Junior Year**

The following are recommended courses:

- 681 Principles of Human Anatomy
- 72, 120 Human Physiology
- 220C Introduction to Competing with FORTIBAN
- 220C Survey of Computing
- 220E Elementary Statistics and Inference
- 225, 180 Biostatistics
- 80, 160 Introduction to Biostatistics
- 71, 120 Drugs: Their Nature, Action, and Use

**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, radiobiology, radialiomnuclear laboratory procedures, radiation protection, patient care, medical terminology, anatomic and physiologic basis of nuclear medicine procedures, radioisotopes and instrumentation, administration and management,
- mathematics and statistics of nuclear medicine; and computer applications in nuclear medicine. Clinical rotations focus on nuclear imaging, clinical radiopharmacy, computer applications, and quantification of radioactivity in vivo and in vitro, including kinetic studies. Radiation also is established in radiopharmacy, diagnostic X-ray, computed tomography, magnetic resonance imaging, echocardiography, cardiac catheterization, and ultrasonography.

The clinical year consists of the following courses:

- 92, 143 Principles of Nuclear Medicine
- 92, 144 Introduction to Nuclear Medicine
- 92, 145 Principles of Nuclear Medicine
- 92, 146 Intermediate Clinical Nuclear Medicine
- 92, 147 Advanced Clinical Nuclear Medicine

For course descriptions, see "Radiology" in this section of the Catalog.

**Admission**

Prerequisites for early admission to the Nuclear Medicine Technology Program include the following:

- A minimum of 60 semester hours in all core course work with a minimum cumulative grade-point average of 2.50.
- Fulfillment of the College of Liberal Arts General Education Requirements in electric, physical, biological sciences, human behavior, history, foreign civilization and culture, and social sciences (psychology and sociology are recommended).
- A minimum of 20 semester hours in three sciences, including a complete introductory course in laboratory work in chemistry, physics, and zoology.
- A minimum of 3 semester hours in mathematics, including at least one semester hour in differential calculus.
- Fulfillment of these basic admission requirements does not ensure acceptance into the Nuclear Medicine Technology Program. Promotion from the third year to the final clinical year is conditional upon satisfactory completion of a minimum of 94 semester hours of study in the recommended areas.

A new class begins in late August each year. Application materials must be received by March 1. Persons interested are advised to submit the necessary application materials to the appropriate preprofessional program.
The two-year Master of Physical Therapy Program consists of the following courses.

First Semester
40:101 Human Anatomy
4.5 h.
40:253 Introduction to Human Pathology
3 h.
10:141 Principles of Physical Therapy
4 h.
10:210 Kinesiology and Biomechanics
4 h.

Second Semester
10:131 Therapeutic Physical Agents I
4 h.
10:185 Musculoskeletal Therapeutics
2 h.
10:191 Clinical Education I
1.5 h.
10:202 Orthopedics and Manual Physical Therapy
4.5 h.

Third Semester
10:122 Psychosocial Aspects of Patient Care
1.5 h.
10:176 Principles of Neurology
1 h.
10:102 Clinical Education II
1.5 h.
10:201 Applied Clinical Medicine
2 h.
10:206 Cardiopulmonary Therapeutics
4.5 h.
10:240 Research Practicum I
1.5 h.
Elective
3 h.

Fourth Semester
10:121 Physical Therapy Management and Administration
2 h.
10:170 Prosthetics and Orthotics
2.5 h.
10:133 Clinical Education III
1.5 h.
10:225 Neuromuscular Therapeutics
4.5 h.
10:250 Research Practicum II
3 h.
Elective
3 h.

Summer Session
10:194 Clinical Internship
6 h.
(May-August)

Fifth Semester
10:146 Internship (August-October)
3.5 h.

Admission
A 3-year program is admitted to the Master of Physical Therapy Program each fall. To qualify for admission to the MPT program, applicants must have completed or planned to complete their own academic requirements.

The following course prerequisites include in the baccalaureate degree from a regionally accredited institution in the United States. The following course prerequisites include in the baccalaureate degree program:
- A college-level microbiology course equivalent to 3 semester hours.
- A college-level statistics course equivalent to 3 semester hours.
- A college-level mathematics course equivalent to 3 semester hours.

All science courses must include the appropriate laboratory instruction. An overall grade-point average of 2.70 or above (on a 4.0 scale) is the minimum for consideration for admission. In addition, a grade-point average of 3.00 or above in all prerequisite course work, including elective basic science courses, is recommended.

Three letters of recommendation are required and should be sent directly to the Physical Therapy Program office. Applicants must take the Graduate Record Examination (GRE) General Test. Students should arrange to take the test early in order to ensure receipt of the results of the examination by the application deadline (February 1).

Personal interviews are required of candidates selected for consideration by the admissions committee. Because the number of students admitted to each class is limited, not all applicants will be invited for an interview. Selections for each class are made from the applicants interviewed. All interviews are conducted at The University of Iowa. The physical therapy admissions committee selects applicants who appear to be best qualified for the study and practice of the profession.

Applications are accepted beginning September 1 for the following year. All applications must be submitted by May 1.

Expenses
In addition to general University expenses, students in the Master of Physical Therapy Program are responsible for the purchase of professional liability insurance and course syllabi.

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 neurovascular. The program focuses on theoretical and clinical applications for assessment and treatment of patient disorders in these three specialty areas. Clinical practice experiences are offered to complement these specializations.

The Master of Arts degree requires a minimum of 30 semester hours of graduate coursework. The clinical practice experiences are a prerequisite. Clinical experience is required.
Physical therapy research laboratories are available. These laboratories are well-equipped with electronic/mechanical systems and computers for measurement and analysis of cardiovascular responses (heart rate, blood pressure, energy cost, and ventilation), muscular-skeletal function (muscle strength and endurance, gait, posture, and disequilibrium evaluation), and electrophysiological monitoring, electromyography, spinal reflexes, CNS control mechanisms. Use of these extramural laboratories also may be arranged.

Collaborative studies are encouraged with other departments, such as neurology, internal medicine, pediatrics, orthopedic surgery, physiology, and biophysics. anatomy, engineering, and pharmacology, and with personnel in the physical therapy clinics.

Students successfully completing the M.A. program in physical therapy will:

* Be able to engage in teaching at the undergraduate and postgraduate levels.
* Be able to engage in original scholarship and research directed toward the discovery of new knowledge and the development of prescriptive principles that will advance the understanding of physical therapy clinical practices.
* Have knowledge of the physical therapy theoretical and research literature related to a specialized area.
* Be skilled in the application of basic concepts related to molecular, chemical, physiological, psychological, and neuroanatomical basis.
* Be skilled in the application of basic concepts related to molecular, cellular, developmental, and neuroanatomical basis.

The following are required courses.

120.212 Biomechanics of Gross Body Movement 3 s.h.
310.301 Thesis: Physical Therapy 4 s.h.
320.305 Exercise Physiology 3 s.h.
320.306 Design and Analysis of Experiments in the Biomedical Sciences 3 s.h.

One of the following four specialty courses:

120.213 Biomechanics of Therapeutics 3 s.h.
120.290 Health Promotion and Cardiopulmonary Therapeutics 3 s.h.
120.276 Occupational Biomechanics 3 s.h.
120.310 Analysis of Seated-Motor Systems in Health and Disease 3 s.h.

The following are recommended courses.

782.100 Introduction to Instructional Design and Technology 3 s.h.
782.230 Intervention to Human Pathology 3 s.h.
110.325 Intensive Study 3 s.h.
120.295 Electromyography in Kinesiology and Biomechanics 3 s.h.
130.327 Research in Therapeutics 3 s.h.
130.355 Advanced Anatomy and Kinesiology 2 s.h.
271.141 Exercise Physiology 3 s.h.
762.352 Facilitating Learning in Health Science Education 3 s.h.
101.280, 282, or 284 Practicum (teaching, research, and/or clinical) 3 s.h.**

* Maximum of six semester hours.
** May be taken pass-fail.

Admission

To be considered for admission, applicants must be graduates of an approved professional program of physical therapy and must have earned a grade-point average of 2.75 or higher (on a 4.0 scale) on all undergraduate work. Two years of clinical experience also is highly desirable.

Admission to the master's degree program is based on the grade-point average for previous college academic work; scores on the Graduate Record Examination (GRE) General Test, recommendation from three sources; and a personal interview. Applicants also must meet the requirements established by the Graduate College.

Applicants must complete the Graduate College application. The application is reviewed after applicants have been accepted by the Graduate College and all aspects of the written application for the Physical Therapy Educational Programs are submitted. Deadlines for completed written applications are October 15 (notification by December 15), March 15 (notification by May 15), and May 15 (notification by July 15).

Doctor of Philosophy in Physical Education (Therapeutics)

Doctoral training related to physical therapy is received in a program in exercise science (Division of Physical Education), with specific emphasis on Therapeutics. The program is described in detail under "Exercise Science and Physical Education" in the "College of Arts and Sciences" section of the Catalog.

Students successfully completing the Ph.D. program in physical education with the specialty in therapeutics will:

* Be able to teach at the basic professional and master's degree levels of physical therapy education and show promise of teaching at the doctoral level.
* Be able to perform original scholarship and research directed toward the discovery of new knowledge and the development of prescriptive principles that will advance the understanding of physical therapy clinical practices.
* Have comprehensive knowledge of theoretical and research literature in areas of specialization; and
* Be skilled in the application of basic and advanced concepts in the areas of cardiopulmonary, muscular-skeletal, and neuroanatomical basis.

Admission

Students are admitted to the student program leading to the D.P.T. degree on the basis of their grade-point average on work completed for the master's degree. The GRE General Test must be considered for admission, students must have earned a grade-point average of 3.0 or higher on all graduate work undertaken in addition, their GRE scores must be no less than the University of Iowa.

Applicants must complete the Graduate College application. The application is submitted by the master's graduate students. Admissions evaluates application materials to ensure that the applicant meets the minimum requirements for graduate studies. The application, including test scores and copies of transcripts, is then sent to the graduate school for review.

Deadlines for the completed written 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

101.201 Physical Therapy Management and Administration 2 s.h.
101.202 Psychosocial Aspects of Patient Care 1 s.h.
120.310 Principles of Exercise Physiology 3 s.h.
130.315 Neuroanatomical Basis for Exercise 1 s.h.
130.316 Principles of Physical Therapy 4 s.h.
130.317 Pathological and Pharmacological Principles of Physical Therapy 4 s.h.
130.370 Musculoskeletal Therapeutics 4 s.h.
130.371 Pathology and Pharmacology of Muscle 1 s.h.
130.372 Principles of Exercise Physiology 3 s.h.
130.373 Principles of Exercise Physiology 3 s.h.
130.374 Principles of Exercise Physiology 3 s.h.
130.380 Principles of Exercise Physiology 3 s.h.
major disciplines of clinical medicine, students are also introduced to the science and art of obtaining a medical history and performing a thorough physical examination. This course is taken in the sophomore medical year.

The third clinical phase consists of a 34- to 35-week core primary-care curriculum, including six weeks each of family medicine, general internal medicine, cardiovascular medicine, pediatrics, psychiatry (four to six weeks), and surgery. Students select either a primary-care or specialty track, though four to ten weeks in length. The primary-care track includes an additional six weeks of family medicine, and electives might include obstetrics, emergency medicine, cardiology, dermatology, and orthopedics. The specialty track might include any of the elective mentioned or other rotations in more specialized areas such as transplant surgery, gastroenterology/ hepatology, and pulmonology.

These clinical rotations are designed to provide students with instruction and experience in the care of patients in a manner that facilitates effective integration of the knowledge, skills, and attitudes derived from the basic sciences and preclinical phases of the program. Clinical training is provided by The University of Iowa Hospitals and Clinics, the Veterans Affairs Medical Centers in Des Moines and Iowa City, Broadlawns Medical Center in Des Moines, and numerous community facilities throughout the state. Students gain additional exposure to patients through placement with selected preceptors involved in clinical work in office-based practices.

The didactic and clinical phases of the program are structured to meet 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
71.125 Pharmacology for Health Sciences: Physician Assistant Students 6 s.h.
56.105 Law and Medicine for Physician Assistant Students 4 s.h.
60.111 Gross Histology and Anatomy for Physician Assistant Students 4 s.h.
61.122 Health Sciences: Microbiology 4 s.h.
40.203 Introduction to Human Pathology 4 s.h.
69.120 Clinical Pathology for Physician Assistant Students 3 s.h.
72.104 Human Physiology for Physician Assistant Students 4 s.h.
99.104 Biochemistry for Physician Assistant Students 3 s.h.
117.102 Seminar for Physician Assistant Students 1 s.h.
117.102 Introduction to the Medical and Physical Examinations for Physician Assistant Students 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 30 s.h.

Second Year

Phase III
The following are required clinical rotations:
75.105 Pediatrics for Physician Assistant Students 6 s.h.
75.105 General Surgery for Physician Assistant Students 6 s.h.
78.105 Internal Medicine for Physician Assistant Students 6 s.h.
115.105 Family Practice I for Physician Assistant Students 6 s.h.
60.108 Obstetrics and Gynecology for Physician Assistant Students 6 s.h.
73.104 Psychiatry for Physician Assistant Students 4 s.h.

Elective clinical rotations are selected from the following:
70.102 Pediatrics Elective for Physician Assistant Students 6 s.h.
75.100 Emergency Room Elective for Physician Assistant Students 6 s.h.
75.102 Orthopaedics Elective for Physician Assistant Students 6 s.h.
115.105 Family Practice Elective for Physician Assistant Students 6 s.h.
115.105 Family Practice II for Physician Assistant Students 6 s.h.
78.110 Internal Medicine Elective for Physician Assistant Students 6 s.h.
60.108 Dermatology Elective for Physician Assistant Students 6 s.h.
61.106 Neurology Elective for Physician Assistant Students 6 s.h.
67.105 Ophthalmology Elective for Physician Assistant Students 6 s.h.
73.104 Radiology Elective for Physician Assistant Students 6 s.h.
75.110 Surgery Elective for Physician Assistant Students 6 s.h.
75.111 Surgery Elective (Transplant/Microsurgery) for Physician Assistant Students 6 s.h.
75.112 Surgery Elective (Burn Unit) for Physician Assistant Students 6 s.h.
76.110 Rehabilitation Elective for Physician Assistant Students 6 s.h.
78.110 Internal Medicine Elective (Cardiology) for Physician Assistant Students 6 s.h.
78.110 Internal Medicine Elective (Critical Care) for Physician Assistant Students 6 s.h.
78.110 Internal Medicine Elective (Gastroenterology) for Physician Assistant Students 6 s.h.
78.120 Internal Medicine Elective (Maternal Medicine) for Physician Assistant Students 6 s.h.
78.120 Internal Medicine Elective (Pediatrics) for Physician Assistant Students 6 s.h.
89.120 Internal Medicine Elective (Surgery) for Physician Assistant Students 6 s.h.
99.120 Internal Medicine Elective (Pulmonary) for Physician Assistant Students 6 s.h.
72.110 Urology Elective for Physician Assistant Students 6 s.h.

Admission

To be eligible for admission to the physician assistant professional program, applicants must have completed at least 60 semester hours of college level study, including:

College of Liberal Arts General Education Requirements in rhetoric, physical education skills, historical perspectives, humanities, quantitative or formal reasoning, foreign civilization and culture, social sciences, and foreign language.

Complete introductory courses in inorganic and organic chemistry; and

A complete laboratory course and at least one programmed course in zoology or animal behavior.

It is strongly recommended, although not required, that applicants' backgrounds include analytical geometry, beginning calculus, and college physics.

Applicants must have achieved at least a 2.50 grade-point average on the last 60 semester hours of college course work undertaken. The admissions committee gives special attention to applicants with experience in performance science courses. In the past, accepted applicants have had a cumulative and science grade-point average of 3.0 or higher, with 3.5 semester hours in the sciences, and approximately one year of full-time or part-time health-related patient care experience.

Satisfaction of the basic admission requirements does not ensure acceptance into the Physician Assistant Program. The admissions committee reviews the applicants it considers qualified. Applicants with previous health care experience will be considered on a case-by-case basis, and acceptance will be based on performance in the admissions process.

Each new class begins the last week in May. Applications are accepted beginning one year in advance, and close January 15. Each applicant must complete the Physician Assistant Program Application Form.
Assistant Program application and submit at least three letters of recommendation.

Expenses
In addition to general University student expenses, students in the Physician Assistant Program are responsible for the purchase of the required uniforms and diagnostic equipment, approximately $800. Microscopes are not required.

Graduate Program

Master of Science in Preventive Medicine and Environmental Health

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 physician assistant profession has broadened dramatically. Clinical opportunities have become available in specialty and subspecialty areas of medicine with an increasing utilization of physician assistants in clinical research, medical education, and health care administration.

With these trends in mind, a combined graduate level program was developed at The University of Iowa in cooperation with the Department of Preventive Medicine and Environmental Health. The combined program is designed to provide a broad foundation in preventive medicine. The integrated curriculum is three years in length and consists of 36 academic weeks dedicated to epidemiology, environmental health, biostatistics, and preventive medicine, and 56 semester hours of courses constituting the standard core curricular curriculum of the Physician Assistant Program. Electives may be selected from a wide range of course offerings in both the preventive medicine department and other departments in the college.

Follow-up completion of the program, students earn a B.S. degree in the Physician Assistant Program from the College of Medicine and a M.S. degree in preventive medicine and environmental health from the Graduate College.

Admission

To be considered for admission, applicants must have completed a baccalaureate degree with a minimum grade-point average of 3.70. Suggested prerequisite courses include biochemistry, biostatistics, immunology, and microbiology. Satisfactory completion of the Graduate Record Examination (GRE) General Test is required. The Office of Admissions evaluates applicant materials to ensure the minimum Graduate College standards are met. The application, including test scores and copies of the transcript, is then forwarded to the department for review.

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

117.120 Physician Assistant Clinical Second Year

117.205 Seminar for Physician Assistants

117.210 Introduction to the Medical History and Physical Examination for Physician Assistants

117.220 Seminar in Preventive Medicine

117.250 Preventive Medicine for Physician Assistants

117.300 Biostatistics

117.325 Research Methods

117.330 Epidemiology

117.340 Environmental Health

117.350 Biostatistics

117.360 Experimental Design

117.370 Research Methods

117.380 Epidemiology

117.390 Environmental Health

117.400 Biostatistics

117.410 Experimental Design

117.420 Research Methods

117.430 Epidemiology

117.440 Environmental Health

117.450 Biostatistics

117.460 Experimental Design

117.470 Research Methods

117.480 Epidemiology

117.490 Environmental Health

117.500 Biostatistics

117.510 Experimental Design

117.520 Research Methods

117.530 Epidemiology

117.540 Environmental Health

117.550 Biostatistics

117.560 Experimental Design

117.570 Research Methods

117.580 Epidemiology

117.590 Environmental Health

BIOCHEMISTRY

Head: Alan G. Goodridge
Professor Emeritus, School of Medicine
Assistant Professor Emeritus, School of Public Health

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 coordinated programs leading to the M.S.-M.D., or Ph.D.-M.D. (medical scientist training) degrees. The focus of the graduate program is on the individual student. In the first year, students' educational needs are met with formal course work and tutorial research experiences that serve as the basis for selecting a thesis topic.

First-year students spend half of their time taking biochemistry courses—usually 99:243, 99:245, 99:256, and the following introductory biotechnology courses (14:219 and 14:285) (see "Molecular Biology" in this section of the Catalog for course descriptions). Students spend the other half of their time working in three different faculty laboratories (99:26 Research Techniques), learning research techniques in the context of ongoing projects.

After the first year, students choose research laboratories for Ph.D. thesis research, begin their thesis projects, and take courses that supplement and complement their interests and preparation. In subsequent years, students must complete a minimum of 3 semester hours of credit consisting of three seminars and two short courses (1 semester hour each) in biochemistry and 5 semester hours of effective science courses offered in other departments.

After passing the comprehensive examinations toward the end of the second year, students are admitted formally to degree candidacy and concentrate on thesis work. The program culminates in the successful defense of the completed thesis work before a thesis committee.

In addition to meetings with the general core of the Graduate College, students are exposed to the teaching of biochemistry for two or three semesters, as part of their training. Throughout the program, students are associated with small seminar groups and receive close personal attention from the biochemistry faculty members who serve as research advisers.

Research Interests

The department's current research interests include the study of protein structure and function, polysaccharide structure and function, development of new methods for supramolecular and recombinant DNA, and mechanisms of protein biosynthesis and processing, membrane structure, molecular cell shape and mobility, and mechanisms of hormone action.

Facilities

Biochemistry occupies modern research quarters in the Bowen Science Building, as do the Departments of Anatomy, Microbiology, and the Departments of Physiology and Biophysics. Almost all the research and teaching facilities for the Department of Biochemistry are located on a single floor.

The University of Iowa central research support facilities and equipment facilitate interactions between research groups. These include the Protein Structure Facility, Electrospray Microscopy Facility, Perfusionists
Facility, Image Analysis Facility, Laser Facility, High Field NMR Facility, Mass Computing Center, and a High Resolution Mass Spectrometry Facility. Other facilities operated by the College of Medicine and available to biochemistry researchers include the Flow Cytometry Facility, DNA Synthesis Core Facility, Molecular Biology Core Facility, Radiation Facility, and Cytogenetics Facility.

Individual faculty research laboratories are well-equipped for modern research, and there are many common-use laboratories, including instrument rooms, a reading room, cold rooms, tissue culture areas, preparation rooms, and a stockroom. Research is supported by staff who work in areas such as glassblowing, instrument shops, animal quarters, and photography and illustration, and by secretaries, stockroom supervisors, and a purchasing agent.

Together, the department and the central support facilities have virtually all of the equipment used in modern biochemical research, including analytical and preparative ultracentrifuges, computerized fluorescence, optical rotatory dispersion, ultraviolet-visible and rapid kinetic instruments, infrared spectrometers, amino acid analyzers, protein sequencers, peptide synthesizers, gas chromatographs, preparative high performance liquid chromatographs, liquid scintillation counters, electron microscopes, autoradiography equipment, and an automatic DNA sequencer.

In addition to the department's reading room, excellent resources are provided by the Harvard Library for the Health Sciences and the various other departmental branch libraries of the University Libraries system and by computer access to the Biological 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 bachelors' degrees in any of the biological, biochemical, or physical sciences. Appropriate preparation includes one or more college courses in organic and physical chemistry, biology, and physics, and mathematics through calculus. Students are expected to have had one or more introductory course in biochemistry, but those with undergraduate majors in biology may make up deficiencies after they enroll. Missions that are insufficient for admission to the department include an undergraduate grade point average of 2.00 and an acceptable score 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, biochemistry, molecular and cellular biology, and general biology.

Courses

18.044 Cooperative Education Internship 0.5-1.5

18.11 Orientation and Introduction to the Field of Biochemistry 1.0

Description of the field of biochemistry and its applications in medicine, technology, agriculture, and the increase of biological studies, research, and careers.

18.111 Technical Writing in Biochemistry 1.0

Introduction to one of the tools of biochemistry is used in preparing a manuscript, technical report, and research proposal. This course is designed to give students experience in writing technical papers and to assist them in preparing and understanding technical papers. Prerequisites: senior standing, course in advanced writing, or consent of instructor.

18.112 Undergraduate Seminar 1.0

Students work with faculty in their areas of concentration. As preparation for their eventual careers, students are required to write and present papers on biochemical topics. Students must enroll in the seminar for both the fall and spring terms.

18.116 Biochemistry 1.0

Chemistry and biochemistry of living systems. Use of cellular system. Prerequisites: two semesters of general chemistry and one semester of advanced physics. Prerequisites: 18.03, 18.034, and 18.044.

18.117 Biochemistry and Molecular Biology I 1.0

Structure and function of major biological molecules, including proteins, nucleic acids, lipids, fatty acids, carbohydrates, and carbohydrates. Molecules and processes that make the nucleic acids, proteins, and lipids. Functions of lipids. (Prerequisites: 18.116, 18.132.)

18.123 Molecular and Cellular Biology 1.0

Molecular questions in biological sciences, growth, metabolism, regulation, and evolution. Prerequisites: 18.03, 18.044.

18.125 Physical Biochemistry 1.0

Quantitative and qualitative experiments on biological systems, neoplasia, complex systems, and molecules. Prerequisites: 18.116 and 18.044.

18.131 Laboratory Techniques in Molecular Biology 1.0

Basic laboratory techniques used in molecular biology. Prerequisites: 18.116 or equivalent.

18.132 Research, Independent Study 1.0

Undergraduate participation in biochemical research. The student selects work in accordance with faculty advice and permission of instructor. May be repeated for credit.

18.155 Biochemistry for Med Students 1.0

Introduction to basic biochemistry for students interested in medical careers. Course is elective in advanced writings. May be taken for honors.

18.160 Biochemistry Tutorial 1.0

Introduction to biochemistry for students who have been accepted at the health science colleges (different health science colleges). Course of biochemistry is taught.

18.171 Biochemistry for Diet Students 1.0

Introduction course for dietetic students. Offers additional with coursework and instruction.

18.172 Biochemistry for Pharmacy Students 1.0

Introduction course for pharmacy students. Offers additional with coursework and instruction.

18.175 Biochemistry for Medical Students 1.0

Introduction to biochemistry for medical students. Focuses on clinical biochemistry. Offers additional with coursework and instruction.
are seen at the nearby Veterans Affairs Medical Center. Veterans are available for fourth-year medical students, including students in Preventive Medicine, Obstetrics and Gynecology, Family Medicine, General surgery, and internal medicine.

Courses

621 Clinical Elective 3 s.h.

622 Clinical Elective 3 s.h.

623 Clinical Elective 3 s.h.

624 Clinical Elective 3 s.h.

625 Clinical Elective 3 s.h.

626 Clinical Elective 3 s.h.

627 Clinical Elective 3 s.h.

628 Clinical Elective 3 s.h.

629 Clinical Elective 3 s.h.

FAMILY PRACTICE

Helm, Charles E. Drs.

Procter, John C.

Reynolds, J. Smith

Sawhney, A. Wilkins

Associate professor, Shaker N. Walmsley

Assistant professor, Elizabeth A. Burns, Craig L. Greger, David M. Rosenblatt

Assistant professor, David Reaves, Ralph Knaebel, Lawrence Sokol, George M. Sokol, Clinical professor, Robert H. Howland

Clinical assistant professor, Gerald D. Lewis

Clinical assistant professor, Gerald J. McGowan, Jay Minard


Facilities

The Family Practice Center was initiated in response to the need for more primary care physicians in Iowa and throughout the nation.

Appropriate course work in the Department is included throughout the four-year M.D. program. The department's Bio- elective senior rotations gives students opportunities to expose to various Iowa communities through work in affiliated hospitals or connected facilities, in the department's mobile office on the University Campus, and in preceptorships with selected family physicians throughout the State. There is also ample opportunity for independent study during the senior year, and an international health care elective offers exposure to primary care health systems of other countries.

Residency

The department directs a three-year residency program whose graduates are eligible for certification by the American Board of Family Practice. This residency training program is designed to provide continuing and comprehensive care to the total family unit, using concepts that integrate the patient, allied health professionals, and the physician into an effective and efficient health care team.

The program is flexible, allowing residents freedom to tailor training to their personal needs and interests. It includes a broad spectrum of services in internal medicine, pediatrics, obstetrics and gynecology, psychiatry, medical and surgical specialties, and public health. The program currently offers 72 individual rotations.

The hospital-based clinical experience is a unique combination of exposure to practice in The University of Iowa Hospitals and Clinics, where the patients have been referred by physicians from all over the state, and in various community hospitals, where important care is of a nature more typical of family practice. During the first year, a large portion of the program is based at Mercy Hospital in Iowa City, where residents have the opportunity for total participation in the practice—both inpatient and outpatient—of the private physician staff. Rotations are specifically designed to provide breadth of experience. In the second and third years, residents are assigned increased time at the Family Practice Center, and at The University of Iowa Hospitals and Clinics.

The departments office, located in the building on the health center campus, is the center of departmental activities. It contains faculty offices and the Family Practice Model Office. Patient families are assigned to a resident with faculty supervision and are seen by appointment. Responsibility for the patient family remains with that resident or the period he or she is in the training program. The program principles of practice management, including administrative decision making, patient record and bookkeeping procedures, and chart auditing methodologies required to manage a private practice.

Facilities

The Family Practice Center was initiated in response to the need for more primary care physicians in Iowa and throughout the nation.

Appropriate course work in the Department is included throughout the four-year M.D. program. The department's Bio- elective senior rotations gives students opportunities to expose to various Iowa communities through work in affiliated hospitals or connected facilities, in the department's mobile office on the University Campus, and in preceptorships with selected family physicians throughout the State. There is also ample opportunity for independent study during the senior year, and an international health care elective offers exposure to primary care health systems of other countries.

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115-401 Emergency Room Outpatient Clinic, Broadview Hospital, Des Moines a.b.a. Minor orthopedic is to develop anatomy and understandability in an accurate primary area, knowledge of acute versus behavior in the pacemaking and education, effects on people's behavior, and improve the quality of care provided. Consent of department required.

115-403 International Health Care a.b.a. Primary care to primary health care delivery systems and other dimensions of international health care. Course work includes: Third World, Africa, and Latin America, and various health services of interest may be submitted for approval. Core text, or five credits are required. Consent of department required.

115-406 Perinatal Psychology in Family Practice a.b.a. This course is intended to prepare you to work in the community for further education in the comprehensive family medicine. Patients with normal incidence of usual problems and the content in the care of primary care physicians who are assigned to own patients, enroll as in the Family Medicine rotating till limited consultation, nursing home style, and will be life-time priority for women and children.

115-408 Family Practice, Ames City a.b.a. Students with the assigned family practice physicians on the faculty will be placed in a primary care setting. Students are responsible for management of all patients admitted to the physician's care, and must be responsible for all cases under the consent of the attending. In practice family practice allow active professional experience in primary care. Consent of department required.

115-410 Independent Studies a.b.a. Student work will consist of Department of Family Practice independent studies. The study should be of interest to all students, community, and meet the needs of the individual student, or personal interest.

115-411 Occupational and Agricultural Medicine a.b.a. See as M.D. 411.

115-412 Central Nervous System Management and Rehabilitation (Elective) a.b.a. Includes: Center, Waterloo, Iowa a.b.a. Students with equivalent experience will be considered for the course: Chiropractic, paralysis, brain injury, spinal injury, and multiple sclerosis. Consent of department required.

115-413 Family Practice Clerkship, Des Moines a.b.a. To allow students to become familiar with the principles of family practice, offered for the students who must complete the clerkship will be responsible for the patients with problems of the faculty in the family practice offices. Medical students must be able to write scripts for patients. Consent of department required.

115-414 Family Practice Clerkship, Cedar Rapids a.b.a. This course will be oriented toward family practice medicine, students will be responsible for patients in the family practice offices. Consent of department required.

115-415 Family Practice Clerkship, St. Cloud a.b.a. This course is to develop family practice-oriented clerkship in general practice. Students will be responsible for patients in the family practice offices. Consent of department required.

115-416 Family Practice Clerkship, Cedar Rapids a.b.a. This course is to develop family practice-oriented clerkship in general practice. Students will be responsible for patients in the family practice offices. Consent of department required.

115-417 Family Practice Clerkship, St. Cloud a.b.a. This course is to develop family practice-oriented clerkship in general practice. Students will be responsible for patients in the family practice offices. Consent of department required.

115-420 Medical Genetics a.b.a. Students with previous medical genetics or similar experience in genetics will be considered for this course. Students will be responsible for patients in the family practice offices. Consent of department required.

115-421 Medical Genetics a.b.a. Students with previous medical genetics or similar experience in genetics will be considered for this course. Students will be responsible for patients in the family practice offices. Consent of department required.

115-422 Medical Genetics a.b.a. Students with previous medical genetics or similar experience in genetics will be considered for this course. Students will be responsible for patients in the family practice offices. Consent of department required.

115-423 Medical Genetics a.b.a. Students with previous medical genetics or similar experience in genetics will be considered for this course. Students will be responsible for patients in the family practice offices. Consent of department required.

115-424 Sector Selective in Family Practice, Family Practice Program a.b.a. First-year students at the Blackhawk Area Family Practice Center. A summary of the course will be prepared for students to complete the course. Consent of department required.

115-425 Sector Selective in Family Practice, Family Practice Program a.b.a. First-year students at the Blackhawk Area Family Practice Center. A summary of the course will be prepared for students to complete the course. Consent of department required.

115-426 Sector Selective in Family Practice, Family Practice Program a.b.a. First-year students at the Blackhawk Area Family Practice Center. A summary of the course will be prepared for students to complete the course. Consent of department required.

115-427 Sector Selective in Family Practice, Family Practice Program a.b.a. First-year students at the Blackhawk Area Family Practice Center. A summary of the course will be prepared for students to complete the course. Consent of department required.

115-428 Sector Selective in Family Practice, Family Practice Program a.b.a. First-year students at the Blackhawk Area Family Practice Center. A summary of the course will be prepared for students to complete the course. Consent of department required.

115-429 Sector Selective in Family Practice, Family Practice Program a.b.a. First-year students at the Blackhawk Area Family Practice Center. A summary of the course will be prepared for students to complete the course. Consent of department required.
The 50-semester-hour curriculum includes the following required courses:

- 80:100 Executive Seminar Series
- 80:101 Introduction to Health Care Administration
- 80:201 Health Care Management
- 80:355 Issues in Health Management and Policy
- 80:212 Intermediate Micro-Economic Theory
- 80:213 Health Economics
- 80:216 Financial Management of Health Institutions
- 80:219 Managerial Decision Support Systems
- 80:225 Health Information Systems
- 80:227 Legal Aspects of Health and Medical Care
- 80:192 Financial Accounting—M.B.A.
- 80:194 Managerial Finance—M.B.A.
- 80:196 Marketing Management—M.B.A.
- 80:197 Quantitative Methods—M.B.A.
- 80:271 Statistical Methods—M.B.A.
- Electives

*At least 9 of those 18 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.

**A total of 720 contact hours are required by the state of Iowa for licensure as a nursing home administrator. Residential hours may be completed throughout the program of study. The residency requirement may be fulfilled during the intervening summer periods and at the conclusion of the thesis work.**

H.H.A.-M.B.A. Degree 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. An minimum of 72 semester hours must be earned for both degrees to be awarded. Of this number, 27 semester hours must be taken in the hospital and health administration program.

Five-Year Program

The University of Iowa was the first institution in the nation to offer the five-year program in hospital and health administration. The option, which was launched with a grant from the St. Vincenzo Foundation, enables qualified students to complete their bachelor's and master's degrees in five years rather than the usual six.

To be eligible for admission to this program, students must complete all general requirements for a baccalaureate degree at their undergraduate 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 health administration as undergraduates. After completing the first year of study, the bachelor's degree is conferred by the undergraduate institution. Students are then admitted formally to The University of Iowa Graduate College. The master's degree is conferred after completion of the second year of study.

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. Joint programs usually require three years of full-time study, and students must satisfy the requirements of each program to earn both degrees. In addition to the M.A. M.B.A. dual degree program, joint programs currently are offered with the College of Law (J.D.) and the Program in Urban and Regional Planning (M.A.). 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.

Fellowships and Residencies

Many students choose to complement their academic training with an administrative fellowship or residency. Such experiences afford a valuable career of observing, developing, and demonstrating practical management techniques and skills. The program takes an active role in assisting students to identify and secure fellowship and residency positions.

Doctor of Philosophy

The Ph.D. program, the nation's first doctoral program in hospital and health administration, prepares students to assume positions in teaching and research as well as senior policy and executive assignments. Graduates of the program demonstrate advanced capabilities in research and management that enable them to work effectively in a wide variety of health-related organizations.

The Ph.D. requires completion of a minimum of 96 graduate semester hours, comprehensive examinations, and a dissertation. Doctoral candidates prepare dissertations based on original research that tests, extends, or applies concepts or principles to problems in health care. The program requires all doctoral students to develop expertise in three areas of study. These areas and the required courses are as follows:

Health Services Management and Policy

- 80:236 The Politics of Health Policy
- 80:253 Planning for Health Policy
- 80:255 Seminar in Contemporary Health Issues

Research Methodology and Statistics

- 80:261 Health Services Research I
- 80:262 Health Services Research II
- 80:283 Independent Research Project

Advanced Statistical Techniques

Doctoral students also are required to complete at least four courses in statistics (a minimum of 12 semester hours) from:

- General Measurement/Statistics Sequence
- 70:103 Intermediate Statistical Methods
- 70:214 Correlation and Regression
- 80:505 Application of Multivariate Statistical Methods

Electives

- Economometrics Sequence
- 60:221 Econometrics
- 70:205 Application of Multivariate Statistical Methods

Electives

Sociology Sequence

- 34:214 Elementary Statistics and Data Analysis
- 34:216 Intermediate Statistics and Data Analysis
- 80:105 Application of Multivariate Statistical Methods

Electives

Minor

Students must complete at least 12 semester hours in a discipline such as sociology, political science, social psychology, management science, or economics.
Alumni Association
An active alumni association supports the program in a number of ways, including 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 residences and fellowships.

Each fall the program sponsors the Executive Symposium, a two-day conference for several hundred 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 critical issues in health care.

Recent symposiums have addressed the changing role of the physician, new developments in health care, the balance between business ethics and the healing mission, prospects for a new era in American health care, and leadership in health care.

Admission
Applicants to the master's program are required to hold a baccalaureate degree (except for early admission program applicants). 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 3.0 grade-point average (on a 4.00 scale) is required. Combined Graduate Record Examination (GRE) General Test verbal and quantitative scores above 1100 or Graduate Management Admission Test (GMAT) scores above 530 are preferred. Courses in finance, marketing, economics, and statistics are strongly recommended. All applicants are required to submit three letters of recommendation, GRE or GMAT scores, three letters of recommendation, and a written statement of interest in the program. Generally, admissions are made for the fall semester only. Campus visits are encouraged and personal interviews are required prior to admission.

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 scholarship, grant, and loan programs administered by the University, the program provides qualified students with research assistantships that afford valuable experience in health services research and related projects. Research assistants work 10 to 20 hours per week and must apply for appointment 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, there exists opportunities 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 (CHSRE), the research division of the Graduate Program in Hospital and Health Administration since 1981, is the University's wide local focus for a broad-based program of health services research.

With the coordination and support of the CHSRE, faculty and staff work in colleges and departments throughout the University to investigate the organization, delivery, efficiency, and financing of health care services. CHSRE researchers study a broad spectrum of topics and disciplines, including management science, health care organization, economics, geography, organizational behavior, psychology, operations research, sociology, preventive medicine, and environmental health, nursing, and clinical medicine.

Through its research activities, the center promotes links among health organizations throughout the Midwest. CHSRE also assists frequent exchanges with professional and provider associations, policy and planning agencies, insurance companies, health delivery institutions, and other members of the health services research community. As the driving force behind the formation of the Health Services Research Consortium, the center has developed affiliations with the Veterans Affairs Health Services Research and Development Field Program, the Mercy Consortium for Health Services Research, and the National Institute for Rural Health Policy.

Master's and doctoral students from the program are encouraged to become involved in the center's projects and activities.

Courses
80:100 Executive Seminar Series 2 s.h.
Admissions and recruitment strategies for academic health services, the role of the health services management executive, governance agencies, health maintenance organizations, community-based organizations, and the health industry. The program is designed to provide current trends and issues affecting the health care industry.

80:211 Introduction to Health Care Management 3 s.h.
Basic organizational arrangements of health services in the United States; impact of societal, political, psychological, and economic forces on the health services delivery system; levels and types of health services providers, methods of financing, and governmental regulation of service systems. Corequisite: 80:212.

80:212 Health Care Management 3 s.h.
Principles of health services management, the role of leadership, goal setting, decision making, and financial management. Corequisites: 80:211 and 80:212.

80:202 Hospital Organization and Management 3 s.h.
Introduction to hospital organization and management, emphasizing organizational structure, strategy, and personnel management. Corequisites: 80:211 and 80:212.

80:203 Strategic Management of Health Care Organizations 3 s.h.

80:204 Issues in Health Management and Policy 3 s.h.
Understanding of theories, methods and techniques applied to health services and delivery systems. Corequisites: 80:211 and 80:212.

80:205 Management of Alternative Delivery Systems 3 s.h.
Organization and management of HMOs and PPOs. The advantages and disadvantages of managed care and alternative delivery system management techniques. Prerequisite: 80:212 or consent of instructor.

80:207 Group Practice and Ambulatory Care Administration 3 s.h.
Focus on the delivery of ambulatory health care services, including network and fee-for-service public policy implications. Corequisites: 80:211 and 80:212.

80:208 Bookings on Ownership of Health Care Institutions 3 s.h.

80:212 Intermediate Micro-Economic Theory 3 s.h.

80:213 Health Economics 3 s.h.
Health services in a capitalist society, the health care sector, Medicare for medical and hospital care, health insurance, and the structure of health care delivery systems. Prerequisites: 80:211 and 80:212.

80:218 Financial Management of Health Institutions 3 s.h.
Leverage in working capital management, capital financing, current and capital budgeting, reimbursement, capital control mechanisms, and financial management information systems. Prerequisite: 80:211.

80:219 Health Information Systems 3 s.h.
Current issues in computerized patient care, analysis of current hospital-based computer systems, and introduction to health information systems and the organizational, technological, and technical issues associated with the development of a health care information system. Corequisites: 80:211 and 80:212.

80:221 Health Information Management 3 s.h.
Introduction to management of health information systems in health care institutions. Corequisite: 80:211.

80:223 Managerial Decision Support Systems 3 s.h.
Introduction to support systems for decision-making in health care organizations, with emphasis on computer support systems for decision-making. Corequisites: 80:211 and 80:212.

80:225 Health Information Systems 3 s.h.
Introduction to computer-integrated management information systems in health care organizations. Corequisites: 80:211 and 80:212.

80:227 Legal Aspects of Health and Medical Care 3 s.h.

80:282 Hospital Management 3 s.h.
Hospital organization and service delivery systems, management of the hospital environment. Corequisites: 80:211 and 80:212.
MEDICAL SCIENTIST TRAINING PROGRAM

Directors: Robert E. Fischler (Physiology and Pharmacology)
           William Johnson (Biochemistry and Molecular Biology)

Associate Director: William Johnson

Associate Director for Clinical Studies: Robert S. Schriever (Biochemistry)

The Iowa Medical Scientist Training Program is a combined Ph.D./M.D. degree program that prepares students for careers in academic medicine, with emphasis on preclinical and clinical research. To accomplish this, the program provides a distinct premedical and graduate education, doctoral research training, and all clinical studies necessary for the medical degree. With few exceptions, requirements for both the M.D. and Ph.D. degrees can be completed in six to 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 their curriculum. The basic science core of the first two semesters consists of formal courses in biochemistry, histology, anatomy, embryology, histotechnology, physiology, microbiology, neurosciences, general and systems pathology, pharmacology, and preventive medicine. These courses provide the language and organizing concepts of the preclinical sciences that will be foundation for subsequent training in both research and clinical medicine.

During the summers between the first and second years, trainees engage in research under the supervision of a member of the program faculty. Entering trainees also may choose to do research during the summer before their first year.

In the second semester of the second year, trainees take the MCATs and, if they are not already enrolled, begin their medicine sequence that provides instruction and practice in the history-taking, physical diagnosis, and laboratory diagnosis, as well as insight into major health problems. In the summer of the second year, they engage in 12 weeks of clinical clerkships involving primary patient care. This early clinical component integrates scientific and clinical aspects of the program and provides an overview of relationship between the basic and clinical care system. Trainees maintain contact with clinical medicine during the graduate phase of the program through participation in weekly clinical conferences and voluntary clinical activities.

Trainees then choose from the basic science or clinical options and are supervised by departmental faculties. The preclinical options are designed to prepare trainees for careers as independent investigators. Graduate training is supervised by departmental faculties and is pursued with the rigor and standards applied to all doctoral students at The University of Iowa.

Trainee activities are fully integrated with the departments and programs that they will enter once all preclinical training is complete, and they are encouraged to participate in research with the faculty of the departments and programs that they enter. Trainees are expected to have completed requirements for their bachelor's degree at an accredited academic institution. In addition to outstanding academic credentials, including strength in biological, physical, and mathematical sciences, applicants should demonstrate aptitude for and commitment to scientific research, usually evidenced by productive research experience as undergraduates. Applications are accepted from students who request admission to the first year of the program. Considerations also is given to applicants for admission to advanced standing from individuals currently enrolled in the College of Medicine or Graduate College at The University of Iowa.

Courses
59311 MSPT Summer Research 4
59312 MSPT Clinical Conference 1-3

Microbiology

Mammals, Bacteria, Viruses, etc.

Admission

Applicants must meet requirements for admission to the College of Medicine and the Graduate College at the University of Iowa. Trainees are expected to have completed requirements for a bachelor's degree at an accredited academic institution. In addition to outstanding academic credentials, including strength in biological, physical, and mathematical sciences, applicants should demonstrate aptitude for and commitment to scientific research, usually evidenced by productive research experience as undergraduates. Applications are accepted from students who request admission to the first year of the program. Considerations also is given to applicants for admission to advanced standing from individuals currently enrolled in the College of Medicine or Graduate College at The University of Iowa.

Application Procedures

The University of Iowa College of Medicine participates in the Association of American Medical Colleges Application Service for Aid (AMCAS). Program applicants should again apply to the Association of American Medical Colleges Application Service for Aid (AMCAS) to forward their credentials to the College of Medicine (S42) as soon as possible after June 15. At the same time, applicants should request a separate Medical Scientific Training Program application from the program office, 5772 Rowden Science Building, The University of Iowa, Iowa City, Iowa 52242. Applications to the Medical Scientific Training Programs are reviewed by the program selection committee after all AMCAS applications are received.

Eligibility requirements for receipt of applications is December 1. Applications should be submitted early as possible to have adequate time by both the College of Medicine and the Medical Scientific Training Programs selection committee for final evaluation. Applications are given to all applicants regardless of their state of residence.

Microbiology

Mammals, Bacteria, Viruses, etc.

Undergraduate Program

See "Microbiology" in the College of Liberal Arts section of the Catalog.

Graduate Programs

The objectives of the graduate programs in microbiology are to help students become highly qualified in research and in teaching of microbiology.

Medical Technology

See "Diagnosis of Associated Medical Sciences."
Graduate Program
The Molecular Biology Ph.D. Program provides experimental training in the concepts and methodologies fundamental to the investigation of biological mechanisms at the molecular level. More than 30 faculty members are involved in a variety of research projects related to gene expression and regulation. The principal didactic component of the program is a sequence of core courses in prokaryotic and eukaryotic molecular biology. Students engage in laboratory research immediately upon enrollment and progress rapidly to original thesis projects that lead to the Ph.D. degree in molecular biology.

Requirements
The graduate program is sufficiently flexible to accommodate students with a wide range of backgrounds in the biological and physical sciences. Entering students are expected to have a solid background in science, including introductory biology and chemistry, organic chemistry, physical chemistry, calculus, genetics, and biochemistry. Students may remedy deficiencies in particular areas by taking appropriate courses during the first year of graduate study.

Curriculum
The curriculum consists of a sequence of required and elective courses that provide didactic training in molecular biology and ensure a comprehensive exposure to the concepts and experimental methodologies of this field. Because of the diversity of biological research problems that can be pursued by employing molecular biological strategies, the curriculum provides a variety of options for specialization in particular areas of interest.

Four courses are required of all students:

19.241 Biophysical Chemistry I 3 h.
14.210 Molecular Biology I 3 h.
14.212 Molecular Biology II 3 h.

In addition to these core courses, students are required to complete at least 8 semester hours in electives or more approved elective courses.

After successful completion of the comprehensive examination, usually at the end of the second year of graduate study, students advance to candidacy for the Ph.D. degree, where they devote full-time effort to completing thesis research and writing the Ph.D. dissertation. Upon successful completion of all requirements, including the dissertation and oral defense in accordance with rules and regulations of the Graduate College, students are awarded the Ph.D. degree in molecular biology.

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 funds from 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 Physiology and Biophysics—which offer graduate degrees, and the Department of Medical Microbiology, Pathology, and Pediatrics, whose focus is clinical. Faculty laboratories and central research facilities available to students provide access to the latest state-of-the-art research equipment, including an organonucleotide synthesizer and an automated DNA sequence analysis apparatus.

Admission
Individuals seeking applications material and information about pre-graduate and postdoctoral training in molecular biology should contact Molecular Biology Ph.D. Program, 5517 Boas Science Building, The University of Iowa, Iowa City, Iowa 52242.

Courses
16.252 Receptor Biology I 3 h.
16.254 Regulation of RNA and protein synthesis and membrane transport, for biologists, geneticists, and biochemists (DNA analysis of yeast processes). Prerequisite: 16.252 or equivalent.
16.255 Molecular Biology II 3 h.
Mechanisms and regulation of RNA, DNA, and protein synthesis in eukaryotes; emphasis on techniques used to study eukaryotic systems and experimental methods for analysis of these processes. Prerequisite: 16.252.
16.263 Cell Biology I 3 h.
16.264 Cell Biology II 3 h.
16.265 Cell Biology II 3 h.
16.266 Cell Biology II 3 h.
16.267 Cell Biology III 3 h.
16.268 Cell Biology IV 3 h.
16.269 Cell Biology V 3 h.
16.270 Cell Biology VI 3 h.

16.271 Cell Biology VII 3 h.
16.272 Cell Biology VIII 3 h.
16.273 Cell Biology IX 3 h.
16.274 Cell Biology X 3 h.
16.275 Cell Biology XI 3 h.
16.276 Cell Biology XII 3 h.
16.277 Cell Biology XIII 3 h.
16.278 Cell Biology XIV 3 h.
16.279 Cell Biology XV 3 h.
16.280 Cell Biology XVI 3 h.
16.281 Cell Biology XVII 3 h.
16.282 Cell Biology XVIII 3 h.
16.283 Cell Biology XIX 3 h.
16.284 Cell Biology XX 3 h.
16.285 Cell Biology XXI 3 h.
16.286 Cell Biology XXII 3 h.
16.287 Cell Biology XXIII 3 h.
16.288 Cell Biology XXIV 3 h.
16.289 Cell Biology XXV 3 h.
16.290 Cell Biology XXVI 3 h.
16.291 Cell Biology XXVII 3 h.
16.292 Cell Biology XXVIII 3 h.
16.293 Cell Biology XXIX 3 h.
16.294 Cell Biology XXX 3 h.
ORTHOPAEDIC SURGERY

Head: Ronald D. Cooper
Professor: James A. Allen
Associate Professor: William B. Ayers
Adjunct Professor: Richard A. Brand
Professor: Samuel M. E. Sheehan
Assistant Professor: Charles F. Van, Ronald D. Cooper
George V. O'Malley, Jr.
A. Raymond, Stuart L. Waterhouse
Professor Emeritus: Michael S. B. Ingalls
Associate Professor: Frederic F. Casey
Nurse: Mary B. Norris
Chief: Howard Stevens
Assistant Professor: Ernest F. L. Lawrence
Nurse: Susan R. Jones
Clinical Professor: Richard C. Johnson, Jr.

The Department offers two types of postgraduate training. The first is a five-year integrated clinical program in which internal and residents participate simultaneously in inpatient and outpatient care, surgery, and related sciences. The second is a six-year program for those interested in full-time academic orthopaedic careers.

Programs

Clinical Program

Trainees enter this program directly from medical school through the National Internship Matching Plan. The program consists of a one-year categorical diversified orthopaedic internship and four years in orthopaedic residency. During the internship year, trainees gain experience not only in clinical orthopaedics but also in medicine, pediatrics, neurology, surgical specialties, medical, plastic, and anesthesiology, and other services. During the following years, residents gain experience in trauma, children's orthopaedics, adult orthopaedics, neurovascular disorders, rehabilitation, prosthodontics and orthotics, rheumatology, and basic science as related to orthopaedics. They take specialized courses in anatomy, bone histology, biochemistry, physiology, and pathology.

A weekly seminar covers biomechanics, kinematics, and selected clinical subjects.

Academic Orthopaedics Program

This program includes the training described above under the clinical program and as an additional one or two years of research. This research may be in any field in which the resident is interested, provided it is related to the musculoskeletal system. It may be done in one of the orthopaedic laboratories at the University of Miami Medical Center or in a basic science department.

Laboratories

The orthopaedic laboratories deal with problems in the major subject areas.

Biochemistry—The biochemistry of acidic, basic, neutral, and hydroxyapatite.
Otolaryngology—Head and Neck Surgery

Residency Program

The residency program in otolaryngology is in accord with the requirements of the American Board of Otolaryngology. It consists of a four-year course of basic and clinical science. The basic science lectures and laboratory studies are conducted during the first two one-half and one-month months of residence.

After passing an oral and written examination, students enter the clinical phase of their training, which includes supervised clinical and operative work, clinical conferences, and seminars pertinent to the practice of otolaryngology and its related fields.

Courses

6010 Clinical Otologymphogy
6015 Head and Neck Oncology
6016 Basic Pathology of Facial Plastic and Reconmmatre Surgery
6018 Pediatr Surgery
6019 Basic Otolaryngology Science

Programs

Clinical Education in Medical Technology

Master of Science

The M.S. program in otolaryngology is open to students with various educational backgrounds. The department particularly encourages applications from students with backgrounds in biology, chemistry, physics, mathematics, and medical technology, and with students with medical and dental degrees.

The M.S. program is flexible, but the department emphasizes practical training to prepare a research background for academically oriented resident physicians and for medical and dental students, the latter for medical technologists who want to enhance their career opportunities by specialization in an area of laboratory medicine.

M.S. students participate in teaching, patients care, and research through the departmental programs of the department, the affiliated laboratories of the department and The University of Iowa Hospitals and Clinics, and faculty members' research laboratories.

Admission to the M.S. program requires a 3.00 grade-point average in science courses, a Graduate Record Examination (GRE) aptitude test, and personal interviews. A brochure describing departmental course requirements and giving examples of the major academic tracks is available on request.
Residency Program

The department is approved for 21 residency positions in pathology, covering a training span of up to 5 years. The programs are designed to initiate the patient population of the University of Iowa Hospitals and Clinics and the Iowa City Veterans Affairs Medical Center.

There is systematic rotation through the various laboratory services, including surgical pathology, autopsy pathology, cytopathology, clinical chemistry, clinical microbiology, hematology, immunopathology, and transfusion center. There is also opportunity 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 premedical and medical students. This program is approved by the American Board of Clinical Chemistry.

In addition, the department provides five 12-month internships and a variable number of clerkships for predoctoral students in any of the areas of anatomic and clinical pathology.

Postdoctoral Training

The Department of Pathology offers postdoctoral positions in hematopathology, neuropathology, and surgical pathology for physicians who have completed at least two years of residency training in pathology in accredited training programs of not less than three years in one of five year of diagnostic work and one year of laboratory research in basic hematology.

The department also provides postdoctoral traineeships in immunology, experimental pathology, and clinical bacteriology, as well as in other areas of cellular and molecular pathology. These programs are open to individuals with either Ph.D. or M.D. degrees.

Facilities

The Department of Pathology administers the clinical laboratories of The University of Iowa Hospitals and Clinics. Most of these laboratories are located in 431 Main, a square-foot area, of new construction laboratories. The Department of Pathology has individual research laboratories and core facility laboratories located in the Medical Research Center, Medical Laboratories, and at the Veterans Affairs Medical Center. The department is well-equipped to carry out the sophisticated technology of molecular and cellular pathology. It also has the University of Iowa College of Medicine Pathology Laboratories for research, education, and laboratory animal care.

Courses

[Course information not provided in the image]
Program, the Neuroscience Program, the Cell and Molecular Biology Program, the Core Center: Diabetes and Endocrinology, the Cancer Center, and the Cardiovascular Research Center.

The department pioceedd the offfering of pharmaceutical courses with little or no science background. The total of the second year is 72.240 Drugs, Their Nature, Action, and Use emphasize the mechanisms of drug action and give students a background for miniaturized devices concerning the personal use of drugs.

The department offers research training in all areas of pharmacology and toxicology at the predoctoral and postdoctoral levels to prepare students for career opportunities in teaching, government, and industry.

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.

Graduate Programs

Master of Science

In cooperation with clinical departments in the College of Medicine, the Department of Pharmacology offers a Master of Science degree program in clinical pharmacology for applicants who already hold the Doctor of Medicine degree. The goal of the program is to provide advanced training in the science of clinical pharmacology for residents in the various clinical specialties. Coordination of the M.S. program requires a minimum of two years. Satisfactory performance for graduation is mandatory unless specifically waived by the Department of Pharmacology faculty. Any of these course requirements may be waived at the request of the instructor if he or she determines that the student is adequately prepared.
PHYSICAL THERAPY

See "Division of Associated Medical Sciences."

PHYSICIAN ASSISTANT PROGRAM

See "Division of Associated Medical Sciences."

PHYSIOLOGY AND BIOPHYSICS

President: Robert L. Fallone


American professors: Mary B. Boyle, Nelda C. Oker, Maryloujaudz, Roberto Maloney, Scott M. Proudman, James Sadelius, Ronald Segliot, Gwen T. Hulse.

Graduate degrees available: M.S., Ph.D. in Physiology and Biophysics.

The Department of Physiology and Biophysics offers graduate-study leading to the Doctor of Philosophy degree. Graduate work is open to medical, dental, pharmacy, nursing, and other health professional students; in addition, it is part of the Medical Scientist Training Program. A combined M.D.-Ph.D. program conducted under the auspices of the Graduate College and the College of Medicine, and offers a Master of Science degree.

Research Interests

The major research interests of the department are in hormone receptors and signal transduction, molecular endocrinology, and regulation of gene expression, synaptic transmission and neuronal differentiation, membrane ion channels and regulation of excitability, and cardiovascuular electrophysiology and regulation.

Graduate Program

The graduate program in physiology and biophysics is designed to provide broad general knowledge of fundamental disease processes at molecular, cellular and molecular levels, as well as an opportunity for intensive study in major areas of physiology and biophysics with emphasis on endocrinology, neuroscience, and molecular biology. The program focuses on the development of modern research skills and their application in the context of current research interest. Starting students are advised by the director of graduate studies, who provides guidance in the planning of a program of formal coursework and an introduction to research activities of the department. The core curriculum includes two semesters of cell biology, two semesters of molecular biology or molecular biology, and one semester of medical physiology. The department also offers advanced specialized courses in mammalian physiology, endocrinology, environmental and exercise physiology, and molecular biology. Students elect to take courses in other departments appropriate to their individual research or dissertation research.

After completing course work and performing satisfactorily on a comprehensive examination based on an original research proposal, students devote full time to original research that culminates in the preparation of a doctoral dissertation and its defense in a final oral examination. All graduate students should have supervised research experience as classroom instructors and teaching assistants as part of their graduate programs.

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 awarded annually based on satisfactory academic progress.

Facilities

The Department of Physiology and Biophysics occupies the entire floors devoted to research and teaching in the Bowes Science Building and was additional laboratory facilities in the Kehrer Medical Research Building and at the nearby Gillardus laboratory. It is in the College's extensive microcomputer facilities with direct access to University computer and minicomputer and in a computerized imaging facility. The department also provides fluorescence microscopy, thin-sectioning equipment, and expertise in cell culture and molecular biology. Graduate students are provided with study space and with the services of the Department of Health, which supplies resources and equipment for research into the laboratory for the Health Sciences.

Admission

Applicants for graduate admission must complete undergraduate studies in an accredited institution prior to matriculation with an overall science grade-point average of at least 3.00, coupled with a combined verbal and quantitative score higher than 750 on the Graduate Record Examination (GRE). General Test. The appropriate scores for graduate study in cellular and molecular physiology and biophysics are in an undergraduate major in one of the biological, chemical, physical, mathematical, or engineering sciences with appropriate college work in biology, physics, chemistry and calculus.

Courses

1. 1010 Histology (3 units)

2. 1100 Physiological Psychology (4 units)

3. 1210 Neuroanatomy (3 units)

4. 1230 Comparative Endocrinology (3 units)

5. 1240 General Neurology (3 units)

6. 1260 Medical Genetics (3 units)

7. 1270 Medical Pharmacology (3 units)

8. 1280 Endocrine Physiology (3 units)

9. 1290 Developmental Biology (3 units)

10. 1300 Histology (3 units)

11. 1310 Human Anatomy (3 units)

12. 1330 Human Physiology (3 units)

13. 1340 Human Genetics (3 units)

14. 1350 Medical Genetics (3 units)

15. 1360 Medical Pharmacology (3 units)

16. 1370 Developmental Biology (3 units)

17. 1380 Medical Pharmacology (3 units)

18. 1390 Developmental Biology (3 units)

19. 1400 Medical Genetics (3 units)

20. 1410 Medical Genetics (3 units)

21. 1420 Medical Pharmacology (3 units)

22. 1430 Developmental Biology (3 units)

23. 1440 Medical Pharmacology (3 units)

24. 1450 Developmental Biology (3 units)
PREVENTIVE MEDICINE AND ENVIRONMENTAL HEALTH

Head: Robert W. Wallace

Professor emeriti: Barry Blichman, L. W. King, Jr., Keith Long, Donald Morgan

Adjunct professors: Michael Reusch, Jane Squires, John V. Winer, John D. Smith

Adjunct instructors: Jane Squires, Michael Reusch, John D. Smith

Adjunct associates: John D. Smith, Michael Reusch, John V. Winer

Adjunct professor emeriti: Robert C. Morgan

Assistant professor emeriti: Charles M erce l, Michael Davis, Bums- Krent, Charles L. Lynch, Ronald M oore, Marshall S lager, Paul Thelen

Assistant professor: Charles S lager, Marshall S lager

Associate professor emeriti: Lawrence C. Merce l, Marshall S lager, Paul Thelen

Professor emeriti: Lawrence C. Merce l, Marshall S lager

Graduate degrees offered: M.S., Ph.D. in Preventive Medicine and Environmental Health

Preventive medicine relates to the individual patient: other knowledge and techniques from biological, medical, social, and behavioral science are applied to prevent disease or its progression. It relates to the health of the entire community when the knowledge and skills of medical and allied sciences are applied in an organized community effort to maintain and improve the health of populations.

Departmental research and teaching activities are conducted within three primary disciplines: biostatistics, epidemiology, and environmental and occupational health. Faculty of the Department of Biostatistics work closely with both clinical and basic science investigators throughout the Health Sciences in the joint design and achievement of research projects. They also work independently in studying problems in statistical theory and developing new analytic methods. Concerns of the epidemiology faculty include health care organization and delivery, risk factors for disease in the general population. Behavioral factors in disease, and the establishment and performance of disease control measures in the community.

Occupational and environmental health faculty are concerned with ecosystem factors and their relationship to disease. Of particular interest are the health problems of agricultural and industrial workers. Equipped with ongoing departmental activities and resources include the State Health Registry of Iowa, which records in central data files on all cases of cancer and birth defects that occur in residents of Iowa; the Aging Project, which examines health problems and needs of a representative segment of low to elderly; the development, evaluation, and field testing of vaccine against echinococcus (Hydatid fever), the University Occupational Health Service; the Community Periodic Project, the Biostatistics Consulting Service, and the Center for the Health Effects of Environmental Contamination.

Within the Division of Biostatistics, the Clinical Trials Management Center serves the statistical needs of clinical data management, and analysis needs of a variety of multicenter clinical trials, including studies of new treatments for Alzheimer's disease and acute ischemic stroke.

The department supports the development of the Institute of Agricultural Medicine and Occupational Health, the first agency in the Western Hemisphere dedicated to the study of the occupational health problems of the agricultural worker.

All occupational programs are enhanced through interactions with the University's Hygienic Laboratory, the Environmental Health Service, the Graduate Program in Hospital and Health Administration, the Program in Health and Development in Agrarian Societies (HADAS), the Health Services Research Center, and the Department of Internal Medicine's division of clinical epidemiology.

Graduate Programs

The master's program offers a degree with emphasis in occupational and environmental health, biometry, or community health. Admission 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, biometry, or occupational and environmental health.

While pursuing a degree, students are expected to maintain a 3.0 grade point average. In addition, students who receive 7 semester hours or more of grades of C or lower in departmental coursework are dismissed from the program.

Joint master's options exist within the Program in Urban and Regional Planning in the Department of Preventive Medicine and Environmental Health in the College of Medicine. This option results in an M.A. or an M.S. in planning and an M.S. in preventive medicine and environmental health. Graduates of both academic units are required.

The combined graduate-level course of study between the Preventive Medicine Program and the Department of Preventive Medicine Program and the Department of Preventive Medicine and Epidemiology, provides a broad foundation in preventive medicine. The three-year integrated curriculum consists of 26 semester hours of graduate courses in epidemiology, environmental health, biostatistics, and preventive medicine, and 26 semester hours of courses made up of the standard core biostatistics curriculum of the Physician Assistant Program.

Electives may be selected from a wide range of courses offered in the Department of preventive medicine and in other departments in the College of Medicine. Upon completion of the program, students receive a B.S. degree in Physician Assistant Program from the College of Medicine and an M.D. degree in preventive medicine from the Graduate College. Separate admission to both academic units is required. The program is described in detail under "Physician Assistant Program" in the Division of Associated Medical Sciences section of the Catalog.
Graduate Programs

The M.S. program in radiation biology emphasizes technical aspects and serves well as a minor field for students whose one main interest is in a related field. The Ph.D. program is open to graduate students with a background in physics, chemistry, mathematics, biology, health sciences, veterinary medicine, or engineering. Ordinarily, the M.S. in this or a related field is required for admission to the Ph.D. program, but consideration is given to other methods of qualifying.

After reviewing the introductory course, students may choose a particular aspect of the field. The details of the program are built around previous training, interests, abilities, and career objectives. Students elect to emphasize training in physical aspects, such as radiobiological physics or health physics, others major in biological aspects. In either case a broad base, rather than complete specialization, is the goal.

In addition to normal lectures, radiation biology programs include small-group conferences and discussions. Laboratory exercises are emphasized, and students have the opportunity to become familiar with many types of instrumentation and techniques. It is recommended that candidates for the Ph.D. have reached knowledge of scientific French or German and competence in biological statistics or computer programming before taking the final examination. Students must have at least one year of experience as teaching assistants or other research assistants. No registration is required and no academic credit is given for the assistantship.

Special Programs

Postdoctoral training is available by arrangement with the program chair and individual faculty members.

Facilities

The Radiation Research Laboratory has a computer-controlled, multi-purpose, high-energy electron linear accelerator, a 1,200 Curie Co-60 Isotope irradiator, dual and triple-gamma analyzers, a high speed charge coupled device camera for x-ray and gamma imaging, and an array of analytical instruments, including a scanning electron microscope, a transmission electron microscope, an image analysis system, and a computerized data analysis system. The laboratory is also equipped with a photomultiplier spectrum analyzer, a variety of equipment for chemical and spectroscopic analysis, and an electronic pulse counter and particle counter research, tissue culture facilities, and facilities for preparing histological sections of tissues—fixed or frozen—and autoradiographs.

Financial Aid

Graduate students are supported as research assistants from funds available through research grants and contracts, or as teaching assistants from departmental funds. Individual postdoctoral awards also may be available and are applied for jointly by the candidate and his or her faculty sponsor.

Courses

17.109 Introduction to Radiobiology and Radioprotection 4 ch.
17.110 Nuclear Radiation Physics 4 ch.
17.111 Nuclear Radiation Physics 4 ch.
17.112 Nuclear Radiation Physics 4 ch.
17.113 Nuclear Radiation Physics 4 ch.
17.114 Nuclear Radiation Physics 4 ch.
17.115 Nuclear Radiation Physics 4 ch.
17.116 Nuclear Radiation Physics 4 ch.
17.117 Nuclear Radiation Physics 4 ch.
17.118 Nuclear Radiation Physics 4 ch.
Practicing resuscitation on a mannequin in the nursing technology lab

Dean: Geraldine Felton
Assistant dean: Myrlie Aym ambiti
Assistant dean, undergraduate studies and community affairs: Glenna McClelland
Assistant dean, clinical practice: Sally Nathia
Director, continuing nursing education: Kathleen Kelly
Director, nursing research development and utilization: Toni Tripp-Reiner
Director, student services: Carol Gruber
Professor: Kathleen Burkholder, Geraldene Felton, Joanna Timchak, Toni Tripp-Reiner, Barbara Thomas
Professor emeritus: Myrlie Aym ambiti, Ema Erickson, Rosemary McGaghie, Hope Solomon
Associate professor: Trecia Clow, Martha Craft, M. Patricia Driskill, Jason Eshleman, Nick Frerichs, Natalie Frerichs, Rose Marie Friedlich, Laura Hall, James Herreid, Rebecca J. Hoss, Patricia L. Marshall, Dennis McCallan, Sandra Powell, Jean Bruce, Elizabeth Swanson
Associate professor emeritus: Glyady Berg, Carolee Freeze, Myrlie Aym ambiti, Maryann Gould, Nancy Jordan, Marjorie Lyford, Anna E. O'Donnell, Elin H. Rakowicz
Assistant professor: Mary Ebneth, Glol Schwen, Martha Casperson, Carolyn Crowell, Connie Delancy, Jackie Decesare, Michelle Eldstrom, Diane Gecht, Caryn Glick, Mary Heng, Santa Herr, Marx Johnson, Kathleen Kelly, Louisa Kruse, Selma Linder, Marcia Miller, Foeke Wohly, Joyce Robertson, Laverne Ruther, Beverly Sabol, Joanne Schell, Mary Stewart-Dietermann, Kay Welte
Assistant professor emeritus: Joelle Jerza, Mary Huta, Mary Rock
Lecturers: Lucy Jucek MS, Rebecca Ayers, Sandra Bellinger, Sandra Benegal, Teresa Besorke, Jodi Buss, Patricia Chiesa, Peter Bouch Cowers, Kevin Culp, Linda Eastman, Karen Griffin, Vicki Harr, Jean Rose, Germaine James, Lisa Stumpf, Kelly, Ann Kriger, Norma Mars, Ann, Jane McDonald, Sheryl Miller, Judy Pope, Carla Rappel, Margaret Rasim, Julia Smith, Joanne Tijges, Elizabeth Walton, Pamela Williams, Janet Williams, Susan Wilson, Mary Wilke, June Yang, Earth Zulehle
Undergraduate degree offered: B.S.N.
Graduate degrees offered: M.A., Ph.D. in Nursing
The College of Nursing is an integral part of The University of Iowa Health Center, providing both educational and clinical research, and patient care resources that have earned international recognition. The University health center provides an unusually fine setting for nursing preparation, because the educational and clinical resources that are needed to educate nurses are available on or near the campus. Faculty and students participate fully in University life and contribute their time, interest, and abilities to the many general and special activities of a major research university.

Both the baccalaureate and master's degree programs of the college are accredited by the Department of Baccalaureate and Higher Degree Programs of the National League for Nursing, the professional accrediting agency for colleges and university programs of nursing education. The baccalaureate program is approved by the Iowa Board of Nursing, and graduates of the program qualify to take the licensure examination required for practice as registered nurses.

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, and in the promotion of health. It also serves as the base for graduate study in nursing.

In addition to the advantages of combining general education with specialized career preparation, the program offers the advantages of full participation in a broad range of educational and recreational activities of a highly diverse college environment. It provides opportunities for specializations in other professions, a college or university background enables people not only to be prepared for a career, but to be effective citizens of thought and action informed by knowledge, introspection, and contemplation.

The program prepares professional nurses to be primary health care providers who are able to develop a broad range of health promotion and teaching activities and to coordinate care in any sector of the health care system.

The nursing major provides a basis for nurses' roles in wellness, promotion, and in acute care, and in long-term care for chronic illness. The professional nurse provides care to individuals, families, groups, and communities along a continuum of health, illness, and disability.

In addition to providing care, the nurse serves as a collaborator of health care by organizing and facilitating the delivery of care from appropriate health service to individuals, families, groups, and communities. The nurse demonstrates ability to conceptualize the total continuing health needs of the patient, including legal and ethical aspects of care. The University of Iowa program's goal is to produce graduates who are committed, competent, creative, and compassionate.

The 128-semester-hour course of study consists of 75 semester hours of liberal arts General Education Requirement courses and supportive prenursing courses, and 53 semester hours of course work in the nursing major. Students can expect to complete the program in four years and one-half academic years. An R.N.-B.S.N. progression option is available for diploma and ADN registered nurses who wish to complete the B.S.N. For those students, a one-year plan of study is available for the completion of required nursing courses upon satisfaction of all required prerequisite courses, challenge examinations, and admission to the College of Nursing.

Nursing courses are based on the concepts of health, disease, nursing, and personal and social environments and are presented at progressive levels of complexity from the sophomore through the senior year. The curriculum reflects the current trend in health care delivery toward emphasis on nursing as a service provided both inside and outside hospitals. Students have clinical experiences that are selected from more than sixty agencies in the state. Basic baccalaureate graduates are eligible to take the licensure examination required for practice as a registered nurse.

Approaches to the College of Nursing

Students may complete their entire program at Iowa, enrolling during their first year in the College of Liberal Arts. Or they may transfer from an institution that offers a two-year sequence of specific course offerings approved by the U.S. College of Nursing. Cooperative state institutions and independent colleges that participate in the transfer plan include Iowa State University and the University of Northern Iowa. Students transfer from upper Iowa University, Northern Iowa, Luther, Clarke, Simpson, and Wartburg colleges. Participating community colleges are located in Ottumwa, Mason City, Marshalltown, Maquoketa, Clinton, Iowa Falls, Ankeny, Boone, and Fort Dodge.

Completion of the transfer sequence at a cooperating institution does not guarantee admission to the College of Nursing. Minimum standards for transfers are the same as for all other College of Nursing applicants. Prospective transfer students who wish for more information about this plan should contact the cooperating institution of their choice.

Cooperative Education Summer Clinical Internship

High-achieving undergraduates have the opportunity to develop critical 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 opportunity to work closely with a preceptor while being employed, and with a faculty member in pre- and post-internship seminars. Internships are available to qualified undergraduate students who have completed three semesters of clinical nursing courses and have completed a nursing grade-point average of 3.00 or higher. Interested students must contact the College of Nursing coordinator of the Cooperative Education Program, Nursing Internship Program, or the Office of Career Services for specific information about the program.

Aging Studies

Students in the College of Nursing may participate in the Aging Studies Program, which is designed to provide undergraduate students a multidisciplinary approach to gerontology. Students plan their course of study with their academic advisor in close cooperation with the Aging Studies Program coordinator. Nursing students who successfully complete 18 semester hours of acceptable coursework in aging studies are awarded a certificate of completion by the University registrar. Nursing students also have the option of completing a minor in aging studies by taking 15 semester hours outside of the major in courses approved by the Counseling Center. For additional information, see "Aging Studies Program" in the "College of Liberal Arts" section of the Catalog.

Honor Program

The University of Iowa College of Nursing Baccalaureate Honor Program provides seminars and independent study experience for nursing majors and students. Students must complete the first clinical nursing course and must maintain a cumulative grade-point average of at least 3.50 and a professional grade-point average of 3.50. The baccalaureate nursing honors program enables students to explore subject matter based on individual interests, needs, and goals. It provides opportunities for self-initiative and intellectual and personal development, and challenges students to grow and succeed. Students who fulfill the requirements of the program are eligible to graduate with honors in nursing.

Pregraduation Assessment Test

All students are encouraged to take a pregraduation assessment test during the final semester of their senior year. The test is designed to determine students' essential nursing knowledge and application in various areas and to identify students' specific strengths and weaknesses, providing a sense of direction for further study and a means for setting
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.

Students may transfer previous course work completed at a 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 challenge examinations.

Once prerequisite courses are met, students may complete the R.N.-B.S.N. nursing major sequence over two years or three semesters in a sequence that includes three clinical and two nonclinical nursing courses. Any student may study on campus and in designated satellite sites. Registered nurses planning to complete the baccalaureate program should obtain special information and advice from the College of Nursing.

Faculty Advisers

Advisers from the Undergraduate Academic Advising Center advise prenursing students. After admission to the College of Nursing, each student is assigned a College of Nursing faculty adviser.

Student Organizations

The College of Nursing students have their own Association of Nursing Students (ANS) and are eligible for membership in the state and national associations of nursing students. ANS provides opportunities for professional growth and development in nursing. Students are members of the Collegiate Activities Council at The University of Iowa and serve as an ANS representative on the Academic Council of the College of Nursing.

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. Hospital 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.

Financial Aid

In addition to general assistance available to University students, there are assistance programs specifically for nursing students. Information about financial assistance is available from the University Office of Student Financial Aid.

Admission

High School Background

The College of Nursing strongly recommends four years of English, three years of social science, three years of mathematics, two years of one foreign language, and one year each of biology, 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 36 semester hours completed in an accredited college. Successful completion of 18 hours of the following courses is recommended: English composition, American government, psychology, and human development and behavior.
- A minimum grade-point average of 2.20 on a 4.00 scale.

Preclinical Background

Students must satisfy the following requirements, in addition to the biological sciences courses required for admission to the college, before beginning clinical nursing course work.

- Rhetoric—8 semester hours (may be satisfied by testing for advanced standing), a student who has earned 6 semester hours of credit in English composition may complete the speech component after admission.
- Mathematics—three years of high school math or a score greater than or equal to 26 on the mathematics battery of the ACT, or completion of a college course in mathematics comparable to or more advanced than intermediate algebra (22M:2).
- Physics—one-half year of high school physics or equivalent; if physics is completed at the college level, it may be included in the 28 semester hours required for admission.
- The following course work:
  - BIOL 121-122, 2 hours
  - CHEM 111-112, 4 hours
  - ENG 122, 3 hours
  - MATH 150, 4 hours
  - PSYCHO 214, 3 hours
  - STAT 111, 3 hours
  - PSYCHO 215, 3 hours
  - MA 150, 4 hours
  - HUMAN 111, 3 hours
  - SOC 101, 3 hours
  - PSYCHO 213, 3 hours
  - SOC 102, 3 hours
  - HUMAN development and behavior 3 hours

Standards

To be considered for admission to the College of Nursing, the applicant must have satisfactorily completed all college course work and achieved minimum grades in the following courses:

- American College Tests
  - All applicants for admission to The University of Iowa must complete the American College Tests. For information on the test, see the American College Testing Program, Box 451, Iowa City, Iowa 52241.

Selection Factors

Eligibility of minimum admission requirements does not guarantee admission to the College of Nursing. Applications are processed as they are received. From applicants who meet minimum requirements, the college's admission committee selects those who appear to be best qualified. The committee may request personal interviews. A physical examination report and specific health screening requirements must be on file at Student Health Service 20 days prior to the opening of classes for the first clinical nursing course.

Application Deadlines

Applications must be received 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 (NLN). The curriculum is designed to build on general and professional baccalaureate study in which nursing is an upper-division offering. For this reason, graduation from an NLN-approved baccalaureate degree program is one of the admission requirements.

The curriculum consists of a core component and areas of specialization and role preparation enhanced by supporting course work in a related discipline. Forty-two semester hours are required for graduation.

Core courses are taken by all students in the program. Students select an area of nursing specialization in child health nursing, adult health nursing, family/community health nursing, or gerontological nursing and a role preparation area in clinical specialization, administration, or teaching. Students may choose a pediatric, gerontological, or psychiatric area in the child health-specialization area or a nurse manager option in the nursing administration role preparation area. An M.B.A./M.A. in nursing is available.

Three supporting courses related to either the nursing specialization or role preparation areas are taken in the social, behavioral, or biological sciences or in business administration, law, or hospital and health administration.

The following courses are required for the same management option:

- 96:201 Conceptual and Theoretical Foundations for Nursing 5 s.h.
- 96:204 Leadership in Nursing 4 s.h.
- 96:210-211 Methods of Research in Nursing 6 s.h.
- 96:238 Nursing Administration Seminar 2 s.h.
- 96:232 Computer Applications for Advanced Practice Administration Roles in Nursing 3 s.h.
- 96:150-151 Electives in business or hospital and health administration (96:150 is optional). 5-12 s.h.

Thesis or Master’s Project 2 s.h.

Degree Requirements

The curriculum ordinarily requires four semesters of full-time study for completion. Part-time and evening study options are available. The M.B.A.-M.A. in nursing program requires a minimum of six semesters of full-time study. Students must maintain a 2.50 grade-point average and must successfully complete a master’s thesis or master’s project.

The master’s degree curriculum consists of five components:

Advanced Nursing Core

The core consists of 17 semester hours of course work in conceptual and theoretical foundations for nursing (5 semester hours), leadership in nursing (4 semester hours), methods of nursing research (5 semester hours), and a professional issues seminar (2 semester hours).

Nursing Specialization

The specialization requires 8 semester hours of course work; 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, psychiatric-mental nursing, 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 at their area of specialization may choose experiences with patients in a long-term care facility, a mental health clinic, or a cardiac care unit. Students with unique career goals have the option of further modifying their plans of study under the direction of their academic advisor.

Role Development

Students may select administration, advanced clinical practice, or education as a role preparation area. A total of 6 semester hours must be earned in two courses, each with a practicum, are offered in these role areas through the College of Nursing. Students who wish to develop skills for careers in clinical practice, for example, enroll for 6 semester hours of advanced clinical practice in addition to courses required for the nursing specialization component. Students may select particular settings and/or preceptors compatible with their own career goals in fulfilling the practicum requirements of these courses.

Supporting Courses

Requires 6-semester hours; students may choose their supporting course work in areas related to their nursing specialization or role preparation interests.

Thesis/Master’s Project

All master’s degrees students at the University must take a final examination. Students in the College of Nursing satisfy this requirement by completing either a thesis or a master’s project. Each student, with his or her advisor, selects the option that best maximizes the student’s identified career objectives.

The thesis is a systematic inquiry into a nursing problem. Methodologies may include historical research, case studies, analytical literature reviews, surveys, or experimental studies that test the requirements of the Graduate College. Students earn a total of 5 semester hours of credit for the thesis.

The master’s project should not replicate a previous course assignment but should be an indepth synthesis and analysis of a chosen topic. Students earn a total of 2 semester hours of credit for the master’s project.

Plan of Study

The plan of study described below is designed for full-time students. Those who wish to study on a part-time basis progress through courses in approximately the same way, but over a longer period of time. Taking one or two courses per semester, for example, extends the time of study to three to five years. Any course work taken ten years or more prior to the final examination must be updated, according to University policy.

First Year

Fall Semester

- 96:201 Conceptual and Theoretical Foundations for Nursing 5 s.h.
- 96:204 Leadership in Nursing: Theory and Application 5 s.h.
- Supporting course 5 s.h.

Total 10 s.h.

Spring Semester

- 96:201 Conceptual and Theoretical Foundations for Nursing II 5 s.h.
- 96:223 Nursing of Children: Health Promotion 4 s.h.
- 96:225 Nursing of Adults: Health Promotion 4 s.h.
- 96:231 Gerontological Nursing I 4 s.h.
- 96:235 Community/Family Health Nursing: Health Promotion 4 s.h.
- 96:219 Methods of Research in Nursing I 3 s.h.
- Supporting course 3 s.h.

Total 12 s.h.

Second Year

Fall Semester

- 96:211 Methods of Research in Nursing II 3 s.h.
- 96:223 Nursing of Children: Responses to Illness 4 s.h.
- 96:227 Nursing of Adults: Responses to Illness 4 s.h.
- 96:230 Gerontological Nursing II 4 s.h.
- 96:235 Community/Family Health Nursing: Client Responses to Illness 4 s.h.
- 96:246 Curriculum Development in Nursing Education 3 s.h.
- 96:260 Nursing Administration: Process, Roles, and Strategies 3 s.h.
Joint 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 60 semester hours. For more information contact the Office of Student Services.

Admission

Students should apply to 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 are a completed application; official transcripts from other institutions attended; Graduate Record Examination (GRE) General Test scores; a minimum score of 550 on the Test of English as a Foreign Language (TOEFL), when appropriate; and a 2.50 minimum grade-point average for regular admission or 2.00 for conditional admission.

In addition to the general requirements for admission to the Graduate College, the College of Nursing requires that the applicant:
1. Possess a bachelor's degree with a major in nursing from a program accredited by the National League for Nursing.
2. Fulfill the legal requirements for the practice of nursing in Iowa.
3. Have an undergraduate grade-point average of at least 2.70 or a demonstrated ability to do graduate work by regular admission, or have at least a 2.50 undergraduate grade-point average for conditional admission.
4. Have current written recommendations from three persons familiar with the applicant's competence in the practice of nursing and potential for leadership and scholarship.
5. 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 situations of the Graduate College pertaining to academic standing, probation, and disciplinary and 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 scientists to conduct research in nursing, enrolls 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 comprehension in research that relates to the practice of nursing and the delivery of health care.

The curriculum has two local areas from which students choose: nursing in aging and nursing service administration. Graduates of the program aspire to careers as researchers, college and university faculty members, consultants, and as leaders in the nursing professions, in health policy-making agencies, and in health care delivery systems.

Degree Requirements

Ph.D. students must take the following nursing course work, for a total of 30 semester hours:

- 94:390 Classics in the Social Evolution of Modern American Nursing 3 s.h.
- 94:390 Nursing Theory: Construction I and II 6 s.h.
- 94:390 Nursing Information Systems 3 s.h.
- 94:320 Economics of Health Care and Nursing 3 s.h.
- 94:220 Nursing's Role in Health Care Policy 3 s.h.
- Students who choose the aging focus take these advanced nursing seminars and practicums:
  - 94:410 Nursing Research of Biological Phenomena and Interventions for the Elderly 3 s.h.
  - 94:420 Genomic Mental Health Research 3 s.h.
  - 94:430 Nursing Research in Sociocultural Phenomena and Interventions for the Elderly 3 s.h.
  - 94:480 Research Utilization: Residency in Care of the Elderly 3 s.h.
  - Students who choose the nursing administration focus take these advanced nursing seminars and practicums:

Admission Requirements

Students applying to the Ph.D. program must fulfill the following requirements:

- Completion of an NUN-accredited basic nursing program.
- Completion of a master's degree program.
- Current R.N. licensure to practice nursing.
- General Test, preferably within the past five years.
- For students whose 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 inferential statistics.
- A two- to three-page statement describing educational objectives and identifying a local area for doctoral study.
- Three recommendations from professionals in the field; and
- A current curriculum vitae.

One year of nursing experience is preferred.

Professional Improvement

Some registered nurses may wish to take courses offered at the University to fulfill the objectives of professional or personal improvement. Such individuals may request admission in the professional improvement category. This admission status allows students to take some graduate courses at the University without commitment to a degree objective. Administration as a nursing professional improvement student requires a formal application, including transcripts and a current written recommendation and all academic transcripts. GRE General Test scores must be submitted to fulfill the University requirement before the end of...
Courses

Primarily for Undergraduates

9800 Cooperative Clinical Internship 9 a.m.
Seminar for students selected for clinical nursing responsibilities.

9803 Focus: Development and Behavior 3 a.m.
Preparation for professional environment in nutrition through observation in classrooms, laboratory, and clinical areas. Prerequisites: 9115 or 9116.

9805 Professional Nursing: An Overview 3 a.m.
The practice of professional nursing in the critical care setting, with emphasis on the perceptions of the nurse as a professional. Prerequisites: completion of all required courses prior to 9805.

9811 Foundations of Nursing Practice 3 a.m.
An understanding of the factors that influence the practice of nursing and the ways in which these factors impact the nursing process. Prerequisites: completion of all required courses prior to 9811.

9817 Concepts in Medical-Surgical Nursing 3 a.m.
A study of principles and procedures of clinical nursing practice, with emphasis on the relationship between the patient and the nurse. Prerequisites: 9811.

9819 Nursing in Public Health Practice 3 a.m.
An understanding of the principles and methods of public health practice, with emphasis on the role of the nurse in the community. Prerequisites: 9817 and 9819.

9820 Concepts in Psychiatric-Mental Health Nursing 3 a.m.
The role of concepts in psychiatric-mental health nursing, with emphasis on the relationship between the nurse and the patient. Prerequisites: 9817 and 9820.

9821 Concepts in Maternal-Newborn Nursing 3 a.m.
The role of concepts in maternal-newborn nursing, with emphasis on the relationship between the nurse and the patient. Prerequisites: 9817 and 9821.

9822 Concepts in Community Health Nursing 3 a.m.
The role of concepts in community health nursing, with emphasis on the relationship between the nurse and the community. Prerequisites: 9817 and 9822.

9823 Concepts of Primary Health Care 3 a.m.
Through interpersonal relationships, we gain perspectives and multicultural insights into the patient's overall health and its relationship to the community. Prerequisites: 9817 and 9823.

9824 Leadership in Nursing Theory and Practice 3 a.m.
The role of concepts in leadership and practice, with emphasis on the relationship between the nurse and the community. Prerequisites: 9817 and 9824.

9830 Conceptual and Theoretical Frameworks for Nursing 3 a.m.
Theoretical frameworks presented in 9824 apply to the practice of nursing. Prerequisites: 9824.

9831 Conceptual and Theoretical Frameworks for Nursing II 3 a.m.
Continuation of 9830, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9832 Conceptual and Theoretical Frameworks for Nursing III 3 a.m.
Continuation of 9831, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9833 Conceptual and Theoretical Frameworks for Nursing IV 3 a.m.
Continuation of 9832, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9834 Conceptual and Theoretical Frameworks for Nursing V 3 a.m.
Continuation of 9833, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9835 Conceptual and Theoretical Frameworks for Nursing VI 3 a.m.
Continuation of 9834, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9836 Conceptual and Theoretical Frameworks for Nursing VII 3 a.m.
Continuation of 9835, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9837 Conceptual and Theoretical Frameworks for Nursing VIII 3 a.m.
Continuation of 9836, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9838 Conceptual and Theoretical Frameworks for Nursing IX 3 a.m.
Continuation of 9837, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9839 Conceptual and Theoretical Frameworks for Nursing X 3 a.m.
Continuation of 9838, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9840 Conceptual and Theoretical Frameworks for Nursing XI 3 a.m.
Continuation of 9839, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9841 Conceptual and Theoretical Frameworks for Nursing XII 3 a.m.
Continuation of 9840, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9842 Conceptual and Theoretical Frameworks for Nursing XIII 3 a.m.
Continuation of 9841, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9843 Conceptual and Theoretical Frameworks for Nursing XIV 3 a.m.
Continuation of 9842, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9844 Conceptual and Theoretical Frameworks for Nursing XV 3 a.m.
Continuation of 9843, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9845 Conceptual and Theoretical Frameworks for Nursing XVI 3 a.m.
Continuation of 9844, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9846 Conceptual and Theoretical Frameworks for Nursing XVII 3 a.m.
Continuation of 9845, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9847 Conceptual and Theoretical Frameworks for Nursing XVIII 3 a.m.
Continuation of 9846, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9848 Conceptual and Theoretical Frameworks for Nursing XIX 3 a.m.
Continuation of 9847, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9849 Conceptual and Theoretical Frameworks for Nursing XX 3 a.m.
Continuation of 9848, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9850 Conceptual and Theoretical Frameworks for Nursing XXI 3 a.m.
Continuation of 9849, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9851 Conceptual and Theoretical Frameworks for Nursing XXII 3 a.m.
Continuation of 9850, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9852 Conceptual and Theoretical Frameworks for Nursing XXIII 3 a.m.
Continuation of 9851, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9853 Conceptual and Theoretical Frameworks for Nursing XXIV 3 a.m.
Continuation of 9852, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9854 Conceptual and Theoretical Frameworks for Nursing XXV 3 a.m.
Continuation of 9853, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9855 Conceptual and Theoretical Frameworks for Nursing XXVI 3 a.m.
Continuation of 9854, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9856 Conceptual and Theoretical Frameworks for Nursing XXVII 3 a.m.
Continuation of 9855, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9857 Conceptual and Theoretical Frameworks for Nursing XXVIII 3 a.m.
Continuation of 9856, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9858 Conceptual and Theoretical Frameworks for Nursing XXIX 3 a.m.
Continuation of 9857, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.

9859 Conceptual and Theoretical Frameworks for Nursing XXX 3 a.m.
Continuation of 9858, with emphasis on the application of concepts to the practice of nursing. Prerequisites: 9824.
Nursing

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98:152 Human Sexuality
A wide range of topics relevant to nursing from the biological and sociocultural aspects, as well as contemporary issues that affect the practice of nursing. May be repeated twice. Open only to students in nursing undergraduate bachelor program.

98:154 Human Structure and Function - A Cellular Approach
Prepares students to identify tissue, cell types, and functional organization in specific body functions, and to explain the interdependence of the body systems and function of the human being. Includes introduction of the atomic and subatomic components of the nucleotides; normal life cycle, and subcellular mechanisms by which the human organism derives life. Offered fall semester of odd numbers and fall - spring semester of even numbers. Prerequisite: 98:131 or consent of instructor.

98:162 Human Structure and Function - A Systemic Approach
Prepares students to describe structural, functional, and organizational characteristics of systemic and subcellular systems and mechanisms to human organisms, identify relationships between functions and structures and distinguish between normal and abnormal function, and develop skills necessary for regulation of organ functions. Offered fall semester of even years. Prerequisite: 98:122 or consent of instructor.

98:165 Applied Genetics for Health Care Professionals
Genetics in health and disease, human genetic principles, genetic counseling, and their application to health care policy. Prerequisite: Consent of instructor.

98:172 Health and Cultural Diversity
Overview of the dynamics of health and illness in cross-cultural perspectives. Offered spring semester of even years. Prerequisites: 113:115 or 113:125 or 98:154 or consent of instructor. Same as 113:135.

98:174 Transactional Mental Health
Survey of cross-cultural perspectives on mental health and mental illness, categorization of expected behavioral patterns for different developmental ages in various cultures, as well as acculturation and illness patterns. Offered spring semester of even years. Prerequisite: 98:154 or consent of instructor.

98:175 Financial Management for the Nurse Manager
Basic principles of financial management as they relate to professional health service organizations and the preparation of professional budgets. Prerequisite: 98:154 or consent of instructor.

98:176 Community Health Nursing as a Field of Practice
The field of practice in community health. A review of research findings and theories of community organization, group dynamics, and community health. Prerequisite: Consent of instructor.

98:180 Management and Supervision in Community Health Nursing
Management concepts of organization, power, change, conflict, authority, and accountability, organization of data, and computer applications. Prerequisites: 98:154, 98:175, 98:176.

98:181 Group Leadership in Human Sexuality
Overview of group process, with emphasis on the risk of the group leader: methods of interacting, how to interpret group experience and practice applications. Same as 154:125, 154:126.
Dean: Robert A. Wilby
Associate dean: Dale L. Woyner

Acting director of pharmaceutical services:
Douglas R. Fairen

Pharmaceutical services:
Lloyd S. Methuen, Jr.
Head, pharmaceutical services:
Lloyd S. Methuen, Jr.

Continuing education:
Bernard Needham

Clinical pharmacy:
Donald P. Alexander

Professor:
Charles F. Barfknecht, Joseph G. Castelli, David P. Cote, John R. Lane, Ronald D. Scrifni, Robert A. Wilby

Associate professors:
Donald P. Cote, John R. Lane

Assistant professors:
Mary J. Berg, Robert Chinitz, Michael W. Dalley, Donald R. Fairen, Lloyd S. Methuen, Jr., Chinery B. Needham, Bernard Needham, Peter Varga-Peters, Dale J. Woyner

Clinical associate professors:
Bruce Alexander, James A. Ponte

Adjunct associate professor:
Robert W. Dick

Ashcroft professor:
Korn Baker, Robert J. Mark, Dee Ann Castelli, Maurita E. Donovan, Douglas W. Cote, Robert W. Dick, Gary Ihle

Clinical assistant professors:
C. David Butler, Ruth Ann Calaway, Bill D. Curtis, Paul J. Hamlin, Ashley Wagoner, Sandra Johnson, James A. Kohls, Gary E. Mayfield, Jean M. P. Waterman

Clinical instructor professors:
David Castelli, Peter M. Consolo, William Fisher, Dorothy M. Maben, David Meek, Donna G. Moore, Lauren M. Shaver, Jan C. Wagoner, Douglas J. Zawacki

Clinical instructor professors:
Bernard J. Cooper, Donna A. Elliott, Mark Fishkin, Randall P. McInnaugh

Adjunct instructors:
David H. Bowerfield, Carl Bowerfield, Warren Krueger, Kent L. Martin, Gary Phillips, John W. Sau

Degrees offered:
D.S.P.H., Pharm.D., M.S., Ph.D.
in Pharmacy
The pharmacist sciences are concerned with preparing and dispensing medicinal products and monitoring their activity. Pharmacists, through education and training can identify, analyze, select, deliver, and standardize these medicines; determine proper dosage regimens, and serve the community as a prime source of information on health and disease.

Pharmacists are basically specialists in the science of drugs. They must understand drug composition, chemical and physical properties, manufacture and use, and activity in research and as well as in ill patients, and must be familiar with tests for strength, purity, and efficiency of drug products. Pharmacists compose and dispense prescriptions written by health practitioners, who rely on pharmacists for information about the availability, activity, vasoconstriction, and contraindications of various drugs. Pharmacists also communicate knowledge of drugs to patients and to other health professionals.

Nearly everyone is in contact with the community pharmacist and the pharmacy in which he or she practices. The size and type of practice may vary—community pharmacies may be large or small, operated by individuals or corporations. The pharmacist who staff these pharmacies makes up the majority of practitioners. More than 125,000 men and women practice in community pharmacies.

Approximately 45,000 pharmacists are employed in hospital pharmacy practice. In this writing we are concerned primarily with the members of this profession that care for the health care professionals. Students interested in hospital pharmacy practice should contact the U.S. Public Health Service, Veterans Administration, Food and Drug Administration, and the armed forces. Pharmacists serve as commissioned officers in the military services as well as the U.S. Public Health Service.

Most are engaged in administrative positions in industry, including manufacturing, research and development, control, marketing, and advertising. Many are employed as clinical pharmacists, clinical service representatives. Pharmacy training is especially valuable to these men and women, who are responsible for acquiring physicians, dentists, veterinarians, and pharmacists with drug products. The educational background of pharmacists and their work create an opportunity for employment in many fields and community areas.

In the United States, many people receive total health care that value. This expansion of health care will continue. Young pharmacists will face new challenges, expanded responsibilities, and an ever-increasing growth in opportunities.

Undergraduate Program

Undergraduate students in pharmacy enroll in the Bachelor of Science program. They receive professional training and education in a number of areas, including pharmacy technology, pharmaceuticals, medical and natural products, pharmaceutical and medicinal, and clinical and hospital pharmacy. Depending on the student's and the college's interest, these areas may be a common part of pharmacy education.

The College 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 program in pharmacy consists of at least 12 years of pre-pharmacy study. Students must complete the College of Liberal Arts at the University of Iowa or at any accredited university or liberal arts college, and four years of pharmacy studies.

It is possible to transfer into the College of Pharmacy with advanced standing after two years of college-level work at an approved institution. Students entering the college after two years of preprofessional study can complete the professional program in three years if the preprofessional study includes, in addition to the basic preprofessional requirements, at least 5 semester hours of organic chemistry, 5 1/2 semester hours of inorganic chemistry and 3 1/2 semester hours of quantitative analysis, and at least 15 semester hours of general education electives. Only a limited number of students will be admitted with advanced standing.

In the College of Pharmacy, the University of Iowa College of Pharmacy is accredited by the University Council of Pharmaceutical Education. Graduate courses of the College are qualified to take the license examination administered by the Iowa Board of Pharmacy Examiners.

Graduation from the bachelor's degree program in pharmacy requires satisfactory completion of the following 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, pass/no pass, credit by examination, minimum schedule, second-semester drug, waiver of entrance examinations, fulfillment of registration, and correspondence study, are provided in the "College of Pharmacy" section in the current Schedule of Courses and the Handbook for Undergraduate Pharmacy Students.

Iowa-Queensland Exchange Program

In 1966 the college inaugurated what is believed to be the first formal international exchange of undergraduate pharmacy students. Under the program, Iowa students are selected by a faculty committee to spend one year studying at the department of pharmacy of the University of Queensland, Brisbane, Australia. In turn, Queensland students spend one year at Iowa.

Iowa students travel to Brisbane beginning in the spring semester of the P2 year. In order to qualify, students must rank in the upper half of their class and must show how their participation would benefit from their participation in the program. The students and the college share the cost of the program.

Honors Program

The honors program gives students an opportunity to interest as part of a small group with leading professors and scientists from all areas of the University. In their P3 year, students in the upper 20 percent of their class may elect to the Honors Seminar, a series of weekly discussions on topics from the humanities, the sciences, law, and the social sciences. The Honors seminar may elect to complete the College of Pharmacy honors program, a fact that is noted on the permanent record.

Admission Requirements

The college-level course work outlined below is the minimum academic requirement for admission to the College of Pharmacy. Fulfillment of these requirements does not assure admission to the college.

Advisors are appointed for the best qualified applicants. Questions concerning satisfaction of degree requirements should be directed to the chair of the graduate curriculum committee.

Preprofessional Course Work

Pharmacists require 9 semester hours of transfer credit in English composition and rhetoric, and 2 semester hours in psychology.

General chemistry: 8 semester hours.

Mathematics: 3 or 4 semester hours of differential and integral calculus.

Physics: for matriculation with one year of high school physics; students are encouraged to complete 298 Basic Physics. General education electives: 6 semester hours. In addition to the required courses in the curriculum, each student must complete 2 semester hours in general education courses to meet graduation requirements. These elective courses should be in the behavioral, social, and humanities areas of knowledge. Some courses in the College of Business Administration may also satisfy general education requirements.

Transfer Students

Students who transfer into the college after two years in a community or liberal arts
Transfer with Advanced Standing

Students transferring from other colleges of pharmacy accredited by the American Council on Pharmaceutical Education may receive credit toward the Bachelor of Science degree in pharmacy for satisfactory completion of course work required in this curriculum. However, at least one academic year (30 quarter hours) of residence at The University of Iowa College of Pharmacy must be completed for the degree.

Students transferring from nonpharmacy colleges may receive credit for work required in the Bachelor of Science curriculum in pharmacy, but still must expect to be enrolled for at least three years in the College of Pharmacy.

In accordance with University policy, students who have earned more than one-half the total semester hours required for the B.S. degree in pharmacy, but who have not received further credit for courses taken at two-year institutions, who wish to transfer to The University of Iowa College of Pharmacy, must enroll for the degree.

A minimum grade of C is required for work applied toward the pharmacy degree.

Graduation

Graduation from the College of Pharmacy with the B.S. degree in pharmacy requires completion of all required courses plus 24 semester hours of course work in professional pharmacy electives. In order to graduate, students must earn a pharmacy and a total cumulative grade-point average of at least 2.00. Pharmacy grade-point average is computed from the grades advanced in all of the specifically required courses that students take 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 Philosophy programs are available in pharmacology, medicinal and natural products chemistry, and pharmaceutical economics—A Master of Science degree is also 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 deadlines, grade-point average for admission, Graduate Record Examination (GRE) Aptitude Test scores, and necessary letters of recommendation are the same as those for the Graduate College. Academic requirements for maintaining graduate registration are
DOCTOR OF PHARMACY (Pharm.D.)

Pharm.D. training and consent of instructor are required for all courses except 46175.

46173 Clinical Pharmacokinetics 3 s.h.
Application of pharmacokinetics in the clinical setting by studying pharmacokinetic principles and clinical trial design. Consent of instructor is required. Prerequisite: 46021.

46177 Advanced Therapeutics I 3 s.h.
Clinical application of selected major therapeutic classes and their drug changes. Consent of instructor is required. Prerequisite: 46173.

46178 Advanced Therapeutics II 3 s.h.
Clinical application of selected major therapeutic classes and their drug changes. Consent of instructor is required. Prerequisite: 46173.

46181 Drug Information Seminar 2 s.h.
Seminar in selected topics in current drug therapy. Consent of instructor is required. Prerequisite: 46175.

46182 Advanced Clinical Pharmacology 3 s.h.
Advanced clinical pharmacology with emphasis on current drug therapy. Consent of instructor is required. Prerequisite: 46175.

46184 Clinical Pharmacology of Drug Literature 2 s.h.
Advanced clinical pharmacology with emphasis on current drug therapy. Consent of instructor is required. Prerequisite: 46175.

46189 Clinical Pharmacology Review and Evaluation 2 s.h.
Survey of current literature in clinical pharmacology. Consent of instructor is required. Prerequisite: 46184.

46190 Advanced Therapeutics III 3 s.h.
Clinical application of selected major therapeutic classes and their drug changes. Consent of instructor is required. Prerequisites: 46173 and 46177.

46192 Therapeutics II 2 s.h.
Advanced study of therapeutic principles and clinical application of drug therapy. Consent of instructor is required. Prerequisite: 46175.

46195 Therapeutics III 2 s.h.
Advanced study of therapeutic principles and clinical application of drug therapy. Consent of instructor is required. Prerequisite: 46175.

46196 Therapeutics IV 2 s.h.
Advanced study of therapeutic principles and clinical application of drug therapy. Consent of instructor is required. Prerequisite: 46175.

46197 Therapeutics V 2 s.h.
Advanced study of therapeutic principles and clinical application of drug therapy. Consent of instructor is required. Prerequisite: 46175.

46198 Therapeutics VI 2 s.h.
Advanced study of therapeutic principles and clinical application of drug therapy. Consent of instructor is required. Prerequisite: 46175.

46199 Therapeutics VII 2 s.h.
Advanced study of therapeutic principles and clinical application of drug therapy. Consent of instructor is required. Prerequisite: 46175.
Continuing Education

Dean Emeritus J. Vogler

The Division of Continuing Education was established by special legislation of the Governing Board in 1948 to "provide a larger service to the Commonwealth and to the people of Iowa for carrying out to every part of the State the knowledge, the through the, the skills, and the spirit of advanced preparation in a changing society." The Division's educational programs and services include the following:

Audiovisual Center
Director: William Oglesby

The Audiovisual Center assists faculty and students improve the teaching/learning process through consultation, planning, design, production, and marketing of instructional audiovisual materials.

The center’s audiovisual production units are the University’s major manufacturers of a broad range of graphic, photographic, and audio materials. The units and their products are:

- Graphic Unit: graphics, charts, maps, films, layout, posters, illustrations, models, cathedrals, and overprinted transparencies
- Photographic Service: black-and-white and color photography, negatives, two-inch slides, filmstrips, portraits, microphotography, many types of specialized photography, and still photographic laboratory services
- Audio Unit: original audiotape recording (studio and location), tape duplication (open reel and cassette), sound editing, equalizing, mixing, and transfer
- Multi-image Unit: design and production of single- and multiple-screen slides, poster films, and video to be projected, manual and programed controls, open reel and cassette soundtracks. The Audiovisual Center also markets and distributes audiovisual products originated at the University. Nominal royalties are paid to sponsoring University departments and authors.

The center charges most University departments for audiovisual only. For requests to be granted, charges are made for instructional aid.

Media Services

The University Media Library provides a master collection of some 16,000 instructional films and videos with charge for on-campus instruction and curriculum-related activities, and for off-campus rental, sliding collections of audiotapes, filmstrips, and slides, plus facilities for student or faculty utilization, also are available. Catalogs of these collections are available on request. The library also maintains a reference collection of materials from other sources.

Equipment Services provides the following at no charge for the following projects: films, slides, filmstrips, and video -to- and overhead projectors, portable projection screens, audiotape recorders, record players, videocassette recorders/players, portable public-address systems, and display devices (exhibit, sound, visual, boards). Repair service is available for audiovisual equipment.

Center for Conferences and Institutes
Acting Director: George J. Logan

The Center for Conferences and Institutes serves as the principal agency of the University for developing, coordinating, and conducting credit and noncredit continuing education programs for nonresident adults and for administering the University’s Continuing Education Unit (CEU) program. The center’s primary goal is to enhance the usefulness of the University as a center of learning and to provide educational opportunities for people who are not full-time students but who seek new knowledge related to their jobs, professions, or special interests.

Each year more than 30,000 adults participate in the center’s varied programs, which represent a cooperative endeavor between the center and the colleges, departments, and service units of the University. The marshaling of appropriate resources, coupled with professional planning and execution of conferences and other short-term programs, help to ensure the achievement of the educational objectives specified for each program.

The director of conferences oversees and staffs the center to conduct or coordinate all conferences, institutes, short courses, and other noncredit continuing education programs held in the Iowa Memorial Union for groups other than on-campus students. The University Relations Service helps the center determine the best location for the conference.

Bachelor of Liberal Studies Degree

The Bachelor of Liberal Studies degree is offered by each of the three Iowa Regents universities (The University of Iowa, Iowa

Center for Credit Programs

Director: Donald V. Fitton

The Center for Credit Programs is responsible for the delivery of University credit courses to noncredit students in Iowa City and throughout the state. In cooperation with the University’s colleges and academic departments, the center offers courses through several formats and delivery systems.

Correspondence Courses

More than 185 Correspondence Study courses are available in the Colleges of Liberal Arts, Business Administration, Education, Engineering, Medicine, and Nursing. These courses represent a total of 42 University departments. Students may enroll at any time, and they have more than a year in which to complete work. A catalog of course listings, procedures, and enrollment forms is available both Correspondence Study, 110 International Center.

Off-Campus Classes

The Center for Credit Programs offers University courses off-campus. Classes are scheduled where they may best serve off-campus students, at the request of public school officials, and/or where other qualified groups indicate a specific need for instruction. The center also offers courses through audioconferencing and interactive television. In addition, it provides a variety of telecourses in cooperation with Iowa Public Television. These courses must be sufficient to meet the cost of offering the course. A catalog of the Saturday and Evening Class Program is available in the Center for Credit Programs, 116 International Center.

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, although each course must be sufficient to meet the cost of offering the course. The Bulletin of the Saturday and Evening Class Program is available in the Center for Credit Programs, 116 International Center.

Bachelor of Liberal Studies Degree

The Bachelor of Liberal Studies degree is offered by each of the three Iowa Regents universities (The University of Iowa, Iowa
Radio Broadcasting Services

Radio Broadcasting Services
Acting director: Alan McKendrick

WSLI and KSL-FM support the resources and activities of the University in the people of eastern Iowa with 18 hours of daily broadcasting. The Broadcasting schedule consists of educational, cultural, and informational programming not generally available elsewhere. As an affiliate of National Public Radio (NPR), WSLI contributes program materials to a national network of more than 500 noncommercial radio stations. The main studios and offices are located in 3300 Engineering Building, and a free copy of the WSLI-SKI Program Guide is available from that address.

Video Center

Director: Daniel W. Lind

The University Video Center provides high-quality video services and facilities, including those necessary to maintain and promote research programs. It also coordinates video equipment purchase and inventory and purchases efficient University support of campus video. T}

Labor Center

Director: Robert Tilley

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: Tom J. Sebold

The mission of the institute is to help strengthen state, city, and county governments in Iowa by serving as the primary research and continuing education link to the University. Institute services are available to state and local government agencies and to citizens interested in civic affairs.

The institute facilitates research and training staff apply University resources to problems faced by Iowa public officials. The institute also works in close cooperation with organizations of public officials, such as the League of Iowa Municipalities and the Iowa State Association of Counties.

The institute provides the following:

- In-service training and continuing education services to public officials, primarily policymakers and key administrators, with a wide variety of information sources and educational programs suited to serving organizations and leadership development needs;
- Research services, informational resources, and publications ranging from Iowa public policy studies to handbooks for elected officials in Iowa governments; and
- Organizational assistance ranging from advising on city council goal setting, management systems, and quality circles to serving on statewide government committees that deal with major concerns of staff and local governments.
Administrative Officers

State Board of Regents
The State Board of Regents governs The University of Iowa, the State University of Science and Technology, the University of Northern Iowa, the Iowa State University of Science and Technology, and the Iowa School for the Deaf. The Board consists of nine members, as follows:

President: Marian J. Fischer, West Des Moines
Vice President: Marvin R. Pomerantz, West Des Moines
Vice President: Marcia M. Bennion, Sioux City
Vice President: Betty Jean Fregin, Waterloo
Vice President: John R. Fuglsang, West Des Moines
Vice President: John M. Geng, Dubuque
Vice President: Elizabeth S. Halish, Cedar Rapids
Vice President: James R. Tyler, Atlantic
Vice President: W. Kent Westfall, Urbandale
Vice President: Mary C. Williams, Davenport
Executive secretary: R. Wayne Hickey

Central Administration
President: H. Wayne Farrow III
Vice president for academic affairs and dean of libraries: Peter L. Noll
Vice president for finance and university services: Susan M. Phillips
Vice president and deans of libraries: Philip C. Hubbard

Academic Affairs
Vice president and dean of faculties: Peter L. Noll

College of Business Administration
Dean: George Daly

Iowa Business Institute of Accounting Research director: Bruce Johnson
Economic Research Institute director: Charles Wiseman

Entrepreneurial Management Institute director: Henry Mead

College of Dentistry
Dean: James H. McLean

Iowa Institute for Dental Research director: Christopher A. Spiess

College of Education
Interim Dean: Lowell D. Sherr
Iowa Institute for SchoolExcellence director: Larry Barritt

College of Engineering
Dean: Robert C. Hove

Institute of Hydraulics Research director: John K. T. Chao
Iowa Institute for Bioscience Research director: John F. Flow

Graduate College
Acting dean: Rudolph W. Schuab

College of Law
Dean: R. William Hise

College of Liberal Arts
Dean: Gerhard Loewenberg

College of Medicine
Dean: John W. Eckmann

College of Nursing
Dean: Gertrude Peterson

College of Pharmacy
Dean: Robert A. Wiley

Division of Continuing Education
Dean: Emmett E. Poppe

Audiovisual Center director: William Ogleby

Center for Continuing Education director: George J. Lusk

Center for Continuing Education director: Von V. Parele

Institute of Public Affairs director: Tom J. Shales

Labor Center director: Robert T. Reith

Business Institute director: John Novick

Libraries
University Librarian: Sheila Crouch

Budget and Planning
Acting associate vice president: Linda Davis

Iowa Lakeside Laboratories
Acting director: Robert W. Craven

Summer Session
Director: Christine Quinn

Student Academic Affairs
Acting associate vice president: J. Anne Cleary

Admissions
Director: Michael Barnum

Registrar
Jerald W. Dall

University Evaluation and Examination Service
Acting director: Joelt E. Moore

Undergraduate Academic Advising Center
Director: Joelt Kaufmann

Student Administrative Services
Associate vice president: Philip E. Jones

Residence Services
Director: George L. Drury

Iowa Memorial Union
Director: Joan Kendall

University Counseling Service
Director: Gerald L. Steen

Special Support Services
Director: Rosalyn Green

Student Financial Aid
Director: Mark S. Warner

Campus Programs and Student Activities
Director: Kevin Taylor

Office of Services for Persons with Disabilities
Director: Patricia Chandler

Women's Resource and Action Center
Director: Patricia Mella

International and Cultural Affairs
Associate vice president: Fredrick Womack

Office of International Education and Services
Director: Stephen M. Arum

Iowa Center for the Arts
Director: Frederick Womack

Hancher Auditorium
Director: Wallace Crapper

Museum of Art
Director: Mary Kuwski

Research
Vice president: James Morris

Division of Sponsored Programs
Director: Margo E. Hogas

Institute for Child Behavior and Development
Acting director: Derek Willard

Center for Health Services Research
Acting director: Robert L. Lusak
Office of Information Technology
Director: Fred H. Harris

Wieg Center for Computing
Director: P. Lee Shope

University Occupational Health Service
Director: Launton Pierce

Health Protection Office
Director: William E. Trueter

State Archaeologist
William Green

Technology Innovation Center
Director: W. Bruce Wheaton

University House
Director: Jay Semel

University of Iowa Press
Director: Paul Zimmer

Animal Care Unit
Director: Paul A. Cooper

Finance and University Services
Vice president: Susan M. Phillips

Business Office
Business manager: Michael J. Finnegan
Treasurer: Doug K. H. Tove
Controller and secretary: Douglas M. Young

University Personnel Services
Director: Marvin Lynch

Planning and Administrative Services
Director: Richard E. Gibson

Intercollegiate Athletics for Men
Director: Charles W. Elliott

Intercollegiate Athletics for Women
Director: Christine Gray

Recreational Services
Director: Harry R. Ostrander

University Health Services
Assistant to the president for statewide health services: John W. Colton

University Hospitals and Clinics
Director: John W. Colton

Psychiatric Hospital
Director: George Woolfolk

State Hygienic Laboratory
Director: William J. Hester

University Hospital School
Director: Midl Hany

Student Health Service
Director: Mary L. Knowles

Regional Child Health Specialty Clinics
Director: Richard P. Nelson

General University
Affirmative Action Office
Acting director: Susan L. Mass

Alumni Association
Executive director: D. Richard Emerson

University of Iowa Foundation
President: Ronald J. Wyckoff

University Relations
Acting director and assistant to the president: Ann M. Rhodes
Admission Rules Common to the Three State Universities

681—1,1262) Admission of undergraduate students directly from high school

Applicants desiring admission must meet the requirements in this section and also any special requirements for the curricular school, or college of their choice. Applicants must submit a formal application for admission, together with a SAT or ACT, and an essay. The Test of English as a Foreign Language (TOEFL), if required, and foreign students whose first language is not English. Applicants may be required to submit additional information or data to support their applications.

1.1(1) Graduates of approved Iowa high schools who have the subject matter background as recommended by each university and who rank in the upper one-half of their graduating class will be admitted. Applicants who are not in the upper one-half of their graduating class may, after review of their academic and test records, and at the discretion of the admissions officers.

1.1(2) Graduates of accredited high schools in other states may be held to higher academic standards, but must meet at least the same requirements as graduates of Iowa high schools. The options for conditional admittance or summer tryout enrollment may not necessarily be offered to these students.

1.1(3) Applicants who are graduates of nonaccredited high schools shall be considered for admission in a manner similar to applicants from approved high schools, but additional emphasis will be given to scores obtained on standardized examinations.

1.1(4) Applicants who are not high school graduates, but whose classes have graduated, may be considered for admission. They will be required to submit all academic data to the extent that it exists and achieve scores on standardized examinations which will demonstrate that they are adequately prepared for academic study.

Students with superior academic records may be admitted, on an individual basis, for part-time university study while enrolled in high school or during the summers prior to high school graduation.

In rare situations, exceptional students may be admitted as full-time students to a regent university before completing high school. Early admission to a regent university is provided to senior students whose academic achievement and personal and intellectual maturity clearly suggest readiness for collegiate level study. Each university will specify requirements and conditions for early admission.

681—1,1262) 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 curricular school, or college of their choice.

1.2(1) Applicants must submit a formal application for admission, together with a $10 application fee, and request that each college they have attended send an official transcript of record to the admissions office. High school academic records and standardized test results may also be required. The Test of English as a Foreign Language (TOEFL) is required of foreign students whose first language is not English.

1.2(2) Transfer applicants with a minimum of 24 semester hours of graded credit from regionally accredited colleges or universities, who have achieved a grade point average of 2.0, will be granted admission. Higher academic standards may be required of students who are not residents of Iowa.

1.2(3) Applicants who have not maintained the grade point required by each university for specific programs or who are under academic suspension from the last college attended may, after a review of their academic and test records, be admitted at the discretion of the admissions officers.

1.2(4) Be admitted conditionally.

1.2(5) Be required to enroll for a trial period during a preceding summer session, or

1.2(6) To be denied admission.

1.2(7) Admissions of students with fewer than 24 semester hours of college credit will be based on high school academic and standardized test records to admission to the college record.

1.2(8) Transfer applicants under disciplinary suspension will not be considered for admission until information concerning the reason for the suspension has been received from the college suspending the suspension. Applicants granted admission under these circumstances will be admitted on probation.

1.2(9) Transfer applicants from colleges and universities not regionally accredited will be considered for admission on an individual basis, upon receiving all available academic information.

681—1,1262) Transfer credit practices

The regent universitas endorses the Joint Statement on Transfer and Award of Academic Credit approved in 1978 by the American Council on Education (ACE), the American Association of Collegiate Registrars and Admissions Officers (AACRAO), and the Council on Postsecondary Accreditation (COPA). The current issue of Transfer Credit Practices of Selected Educational Institutions, published by the American Association of Collegiate Registrars and Admissions Officers (AACRAO), are publications of the Council on Postsecondary Accreditation (COPA) are examined to determine transfer credit. The acceptance and use of transfer credit is subject to limitations in accordance with the university's policies operating at each institution.

1.3(1) Students from regionally accredited colleges and universities Credit earned in a regionally accredited college or university is acceptable for transfer except that credit in courses determined by the university to be remedial, vocational, or technical credits, or credit in courses or programs in which the institution granting the credit is not directly involved, may not be accepted, or may be accepted to a limited extent. 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 total number of credit hours accumulated by the student at all 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 candidate status for accreditation by a regional association is acceptable for transfer in a manner similar to that from regionally accredited colleges and universities if the credit is applicable to the bachelor's degree at the receiving university.

Credit earned at the junior and senior classification level at an accredited two-year college which has received approval by a regional accrediting association for change to a four-year college may be accepted by a regionally accredited university.

1.3(3) Students from colleges and universities not regionally accredited
When students are admitted from colleges and universities not regionally accredited, they may validate programs or all of their transfer credit by satisfactory academic study in residence, or by examination. Each university will specify the amount of the transfer credit that the student will be credited with for this purpose. Further details of the validation process will be present at the time of admission.

In determining the acceptability of transfer credit from private colleges in Iowa which do not have regional accreditation, the higher education admissions committee on educational relations, upon request from the institution, will evaluate the nature and standards of the academic program, faculty, student records, library, and laboratories.

In determining the acceptability of transfer credit from other than Iowa which are not regionally accredited, acceptance policies are indicated in the current issue of Transfer Credit, Practicum of Selected Transfer Credit, which is available on a request for the publication. Guidance is requested from the designated reporting institution of the appropriate state.

1.3(4) Students from foreign colleges and universities
Transfer credit from foreign educational institutions may be granted after a determination of the type of institution issued by and after an evaluation of the curriculum, level, and comparability of the study to that offered at the receiving university. Credit may be granted in specific courses but not in general programs of the respective institutions.

Residence
681-1.42(262) Classification of resident students
681-1.42(262) Classification of resident students
681-1.42(262) Classification of resident students
681-1.42(262) Classification of resident students

1.4(2) Guidelines
The following guidelines are used in determining the resident classification of a student for admission, tuition, and fee purposes.

1. A financially dependent student whose parents move from Iowa when the student is enrolled remains a resident without a change if the student maintains continuous enrollment. A financially dependent student whose parents move from Iowa during the fifth year of high school will be considered a resident provided the student has not established domicile in another state.

2. In deciding whether a person is a resident of Iowa, the student's domicile will be considered. A person who comes to Iowa from another state and enrolls in any institution of post-secondary education shall be considered a full-time student for purposes of domicile. The student shall not claim domicile for purposes of education or residence to enable the student to avoid the laws of another state.

3. A student who was a former resident of Iowa and later to be considered a resident provided the student remains in Iowa for at least one year of continuous residence in Iowa shall be considered a resident of Iowa.

4. A person or the dependent of a person whose domicile is maintained in Iowa may be considered a resident of Iowa as long as domicile is maintained, even though circumstances may indicate absence from the state. It is required that a person who claims Iowa domicile while living in another state or country shall be considered a resident of Iowa if the state maintains domicile as evidence that the person is a resident.

5. Has not acquired a domicile in another state.

6. Has not maintained a continuous voting record in Iowa for two years.

7. Has filed timely Iowa resident income tax returns for at least one year.

8. A student who moves to Iowa may be considered a resident classification and pay resident tuition.

9. A student who is classified as a resident is entitled to receive a full-time academic year of credits in a residence term for any academic year.

10. A student who is classified as a resident is entitled to receive a full-time academic year of credits in a residence term for any academic year.
in all cases until the beginning of the next term to which the student is admitted. Legislation, effective July 1, 1977, requires that military personnel who claim residency in Iowa (home of record) will be required to file Iowa resident income tax returns. 8. A person who has been certified as a refugee or granted asylum by the appropriate agency of the United States who remains as a student at a university provided by the Iowa State Board of Regents may be accepted immediately resident status for admission, tuition, and fees purposes where the person: (1) Comes directly to the state of Iowa from a refugee camp or area of persecution; or (2) Comes to the state of Iowa within a maximum time and has not inhabited 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 fees purposes and thus subject to the usual method of proof of establishment of Iowa residence. 9. An alien who has insufficient status establishes Iowa residency in the same manner as a United States citizen. 1.4) Facts a. The following circumstances, although not necessarily conclusive, have prudential value in support of a claim for resident classification: (1) Reside in Iowa for 12 consecutive months, except those periods of study or residence in other states of those other than a full-time student, immediately prior to the beginning of the term for which resident classification is required; (2) Relocate upon Iowa requirements for full-time educational status; (3) Domicile in Iowa of persons legally responsible for the student; (4) Permanent residence in the state and maintenance of significant connections therein while absent; (5) Active employment of an individual residing in Iowa; (6) Other facts indicating the student's domicile will be considered by the universities in classifying the student. 2. The following circumstances, standing alone, do not constitute sufficient evidence of domicile to effect classification of a student as a resident under these regulations: (1) Voting or registration for voting; (2) Employment in any position normally filled by a student; (3) The lease of living quarters; (4) Admission to a licensed practicing profession in Iowa; (5) Automobile registration; (6) Public records, for example, birth and marriage records, Iowa driver's license; (7) Continuous presence in Iowa during periods not enrolled in school; (8) Ownership of property in Iowa, or the payment of Iowa taxes. 681—1.5(262) Registration and transcripts—general A person may not be permitted to register for a course or courses at a state board of regents institution until any delinquent accounts owed by the person to an institution or any affiliated organization for which such institution acts as fiscal agent have been paid. A state board of regents institution may "thrift official transcripts of the academic record of a person until any delinquent accounts owed by the person to an institution or any affiliated organization for which such institution acts as fiscal agent have been paid. 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 dentistry are encouraged to complete a program leading to a baccalaureate degree before entering dentistry. Applicants should consider a combined program of liberal arts and dentistry which would qualify them for a baccalaureate degree upon the completion of the freshman year in dentistry. Preference will be given to students who have the baccalaureate degree or who have completed the requirements for the degree in a combined program. Fulfillment of the minimum requirements established above is the only criterion for admission to the college of dentistry. All applications for admission to the college of dentistry must include a completed application form and two letters of recommendation from college faculty. 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 upon completion of 120 semester hours and including specific required science courses prescribed by the faculty of the college. Electives should be chosen so as to give the applicant a well-rounded educational background. In order to meet minimum scholarship requirements, the applicant should attain a cumulative grade-point average of 2.50. Since the quality of course work in predental science is basic to success in dentistry, special consideration to the 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 C is required for graduation. Other grading systems will be evaluated by the office of admissions and the committee on admissions of the college of dentistry.
Each applicant must have attained satisfactory scores on the university's required admission examinations, maintained a satisfactory cumulative grade-point average, achieved satisfactory performance in graduation class, and successfully completed all prerequisites courses. The university with the approval of the state board of regents shall establish and periodically review specific minimum requirements for admission to the college of engineering. Among the items to be determined are fee scores, grade-point average, class rank and prerequisite courses. These specific admissions requirements will be published in the university catalog.

From applicants who do not meet minimum admission requirements, the director of admissions may after a review of the applicant's record (a) Admit unconditionally, if (b) on probation, (c) receive enrollment for a trial period during a preceding summer semester, or (d) deny admission.

2.62 Admission of undergraduate students by transfer

The applicant must submit a formal application and official transcript of college work. Each applicant should have:
  a. Maintained satisfactory progress in mathematics.
  b. Attained satisfactory scores on the university's required admission examinations.
  c. Maintained a satisfactory cumulative grade-point average at all college work undertaken.

From applicants who do not meet required requirements, the director of admission will review individual records and make individual probationary admission.

Graduates of any college or university accredited by regional accrediting agencies may be admitted to the graduate college. Admission to the graduate college is not the equivalent of acceptance as a graduate for an advanced degree. Such acceptance is given usually after the completion in residence of work at the university and upon recommendation of the major department and approval by the dean of the graduate college. The acceptance of a graduate as a degree candidate is determined upon the merits of each individual case.

A student who within the last term of the university after attending a baccalaureate degree program, may be admitted to the graduate college.
Applicants are urged to apply as early as possible. The admissions committee reserves the right to request 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.

Fullfillment of the specific requirements for admission listed below does not assure admission to the college of medicine. From the applicants meeting the specific requirements, the admissions committee of the college of medicine will select those applicants whose judgment appear to be best qualified for the study and practice of medicine.

Prior to entering an applicant must:

a. Have received the baccalaureate degree; or
b. Have completed three years of a combined baccalaureate-medicine curriculum which qualifies the applicant to receive the baccalaureate degree upon completion of the first year of medicine; or
c. Have completed three years of a baccalaureate program which includes the general graduation requirements of the college of liberal arts of the University of Iowa for the combined baccalaureate degree.

Each applicant must place on file in the office of the director of admissions the completed application form and an official transcript from each college attended.

The college curriculum must include sufficient courses to meet the minimal academic requirements for admission to the college of medicine.

Applicants who have completed the baccalaureate degree and required courses five or more years prior to applying for admission to this college of medicine will be treated as applicants for the first time only under exceptional circumstances.

The college curriculum must include at least three years (equivalent to 96 semester hours) including specific basic science courses as specified by the college of the faculty of the college.

Students planning to study medicine should bear in mind that other college work is required in addition to prerequisite sciences because it offers an opportunity to secure a well-rounded education, which is of special importance to those entering the medical profession. In the selection of applicants, preference will be given to those who give evidence of having obtained such a broad education.

To be considered for admission, an applicant must have obtained a grade-point average of at least 3.5 for all college work undertaken. As the quality of work in premedical science is very basic to success in medicine, special attention will be given by the admissions committee to grades in science. This grade-point average is based on the University of Iowa's marking system in which a grade of A is equivalent to four points. Other marking systems will be evaluated by the office of admissions and the committee on admissions of the college of medicine.

Preference will be given to applicants with high scholastic standing who are residents of Iowa, and consideration will also be given to outstanding nonresidents.

Applicants for admission are required to take the medical college admissions test which is administered for the Association of American Medical Colleges. Applicants are requested to complete this test in May or October of the year preceding that for which they are applying for admission. Students may make arrangements to apply for this examination through the university examination service, the University of Iowa personal interviews will be required.

Applicants will be notified concerning the appointment for the appointment for required interviews.

Applicants accepted for admission are required to admit a satisfactory physical examination report to the university student health service within two weeks following notification of acceptance.

All applicants must also complete, through student health service, an 8 x 8 x 8.5-inch line of the client and successful vaccination against smallpox prior to registration.

2.02) Admission to advanced standing

If their work preparatory to entering a college of medicine would have met entrance requirements of this college, students from other accredited colleges may be accepted to advanced standing according to the following conditions:

- Only applicants of high scholastic standing will be considered.
- They must present certificates showing that they have satisfactorily completed courses equivalent to those already pursued by the student, together with the appropriate transcripts.

The committee on admission to advanced standing will decide in each case whether the transcripts in the various subjects will be required.

- Applications will be considered only upon receipt of a statement from the dean of the college from which the applicant completed, showing the actual amount of time the student has spent in the study of medicine, the course taken, and the grade received, together with a statement of the work preparatory to entering upon the course in medicine.
- No advanced standing will be given to students from other than approved medical schools. Students may be granted subject credit upon recommendation of the head of the department concerned, for work taken in other than medical schools.

2.03) Unclassified students

Applicants for admission to the college of medicine who are not candidates for a degree but who desire to register for special subjects, will be admitted to any lecture or laboratory course upon compliance with all the regular requirements for admission to such course or by action of the faculty upon recommendation of the professor in charge of the course.

601-2.9(262) College of Nursing

Applications for admission to the college of nursing should be submitted to the Director of Admissions, The University of Iowa, Iowa City, Iowa. Applicants for admission to the undergraduate program in nursing must present a minimum of 30 semester hours completed in an accredited college. Admission to the college of nursing as an applicant must have:

1. Completed specific course work as prescribed by the faculty of the college. The details of admission will provide a list of the course work required.
2. Completed the Axiom College Tests.
3. Performed satisfactorily on all courses undertaken.

Applications from students who have minor deficiencies in basic 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 admission.

Fulfillment of the minimum requirements listed above, however, does not ensure admission to the college of nursing. From those applicants who meet the minimum requirements, the admissions committee will select the applicant who, in their judgment, appear to be best qualified.

601-2.10(262) College of Pharmacy

1.01) General basis for admission

Fullfillment of the specific requirements for admission does not guarantee admission to the college of pharmacy. From the applicants meeting the specific requirements, the admissions committee will select those applicants who in their judgment appear to be the best qualified. Applicants for admission to pharmacy should have graduated from an approved high school with an equivalent amount of training.

1.02) College work

The college work outlined below will meet the minimum academic requirements for admission to the college of pharmacy. The minimum should include 32 semester hours of college level work exclusive of credit in military and air science and physical education. The 32 semester hours must include:

Communication skills. Applicants must have demonstrated satisfactory achievement in communication skills according to the requirements of the college of liberal arts at the University of Iowa. Applicants from other institutions may meet this requirement through satisfactory completion of 8 semester hours of credit in English composition and rhetoric and two semester hours of credit
in speech or an eight-semester-hour year course in communication skills.

Inorganic chemistry and qualitative analysis, eight-semester hours.

College mathematics, eight semester hours.

Physics or zoology, eight semester hours.

Students from other institutions may substitute a comparable eight-semester-hour course in biology in lieu of zoology.

Military or air science (if available), two to two semester hours.

Students who present minor deficiencies in meeting the above requirements may be admitted to the college of pharmacy upon the recommendation of the dean of admissions and the college of pharmacy.

2.10(3) Scholarship and application deadline

To be considered for admission to the college of pharmacy, students must have earned a 3.00 or C average on all collegiate work undertaken. The minimum grade-point average of 3.00 is based on the student University of Iowa's marking system in which the grade of A is equal to a four points. Applications for admission and the required official transcripts should be filed before March 1 for the class to enter pharmacy in September.

2.10(4) Required tests

Applicants for admission are required to take the American College Testing Program test.

2.10(5) Current requirements

Applicants who have completed work in a college of pharmacy accredited by the American Council on Pharmaceutical Education must have a college academic average of at least a 3.00 and a grade of B or above in the degree of bachelor of science in pharmacy.

681–2.11(262) 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 1.1(282), 1.3(282) and 1.9(282).

681–2.12(262) College of Education

Students at the university desiring professional work in education are registered in the college of liberal arts or the graduate college. Requirements for permission to take teacher-training courses are listed in the university catalog.
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