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 at Iowa High Schools, offices of the county superintendents 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 Classes, 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 affirmative or educational preferences. For additional information on nondiscrimination policies, contact the Coordinator of Title IX and Section 504 in the Office of Affirmative Action, telephone 319-335-1020, 202 Sample Hall, The University of Iowa, Iowa City, Iowa 52242.
University Calendar

Fall Semester
- Registration begins: August 20, 1990; August 25, 1991
- Classes begin: August 22, 1990; August 28, 1991
- University holiday: September 3, 1990; September 2, 1991
- Homecoming: October 19, 1990; October 24, 1991
- Thanksgiving recess begins: November 26, 1990; November 25, 1991
- University holidays: November 22-23, 1990; November 28-29, 1991
- Classes resume: December 7, 1990; December 2, 1991
- Classes end: December 10-14, 1990; December 16-20, 1991
- Commencement ceremonies: December 24-25, 1990

Spring Semester
- University holiday: January 1, 1991; January 1, 1992
- Registration begins: January 14, 1991; January 20, 1992
- Classes begin: January 15, 1991; January 21, 1992
- Foundation day: February 25, 1991; February 23, 1992
- Spring vacation begins: March 15, 1991; March 20, 1992
- Saturday classes only meet: March 16, 1991; March 21, 1992
- Classes resume: March 23, 1991; March 30, 1992
- Examinations week: May 3, 1991; May 8, 1992
- May 6-10, 1991; May 11-15, 1992
- Commencement ceremonies: May 10-11, 1991; May 15-16, 1992
- University holiday: May 27, 1991; May 25, 1992

Summer Session
- Registration: June 10, 1991; June 15, 1992
- Classes begin: June 11, 1991; June 16, 1992
- University holiday: June 4, 1991; July 3, 1992
- Classes end: August 2, 1991; August 7, 1992
- Commencement ceremonies for law, graduate students: August 5-23, 1991; August 3-21, 1992

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.
Contents

What Iowa Is All About ........................................ 6
Learning at Iowa ................................................. 8
Academic Programs .............................................. 9
Admissions .......................................................... 11
Tuition and Fees ..................................................... 14
Financial Aid ......................................................... 14
Student Life at iowa ............................................... 18
Academic Services ................................................ 19
General Services ................................................... 21
Housing ............................................................... 22
Codes, Policies, and Students' Rights ......................... 23
Special Resources at Iowa ........................................... 26
Research Activities ............................................... 27
Iowa Lakeside Laboratory ......................................... 34
Project on Rhetoric of Inquiry .................................... 34
University Libraries ............................................. 34
The University of Iowa Health Center ......................... 35
The Iowa Center for the Arts ..................................... 38
Museum of Natural History ....................................... 40
Old Capitol ............................................................ 40
Other Services ....................................................... 40
College of Liberal Arts ........................................... 42
College of Business Administration ............................ 262
College of Dentistry .............................................. 280
College of Education ............................................. 296
College of Engineering .......................................... 340
Graduate College .................................................. 378
College of Law ....................................................... 392
College of Medicine .............................................. 460
College of Nursing ............................................... 444
College of Pharmacy ............................................. 452
Continuing Education ........................................... 458
Administrative Officers ......................................... 460
Faculty ............................................................... 462
Iowa Administrative Code ...................................... 494
Campus Map ......................................................... 500
Index .................................................................. 502
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 undergraduate, graduate, and professional studying with distinguished teachers and scholars in a close-knit, intellectual community.

The University was the first U.S. public university to admit women and men on an equal basis and the first institution of higher education in the nation to accept creative work in theater, writing, music, and art as 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 aboard 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. Arts are enhanced by Iowa's many courses 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 center point 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 positions 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. These are Howard Hughes Medical Institute (HHMI) investigators—each in their own way, working to improve human health through the fields of biochemistry, internal medicine, and physiology and biophysics.

The University reaches out to all segments of society. It makes students who are high achieving, yet at the same time it serves a broad cross-section of students.

Approximately 20,000 students enroll at Iowa each fall and spring semester. Nearly 70 percent come from Iowa, 18 percent from adjoining states, and 4.5 percent from the remaining states. Foreign students from 60 foreign countries make up 5.5 percent of the University's enrollment.

Wealth and Diversity of Programs, Services

The University's Iowa Center for the Arts provides the stimuli and setting for professional-caliber theater, dance, and musical performances by students and faculty as well as by visiting artists around the world. The Museum of Art displays outstanding permanent collections, works by faculty and students, and traveling exhibits year around, and the world-renowned Writers' Workshop and International Writing Program help make the University and Iowa City one of the nation's most prominent arts communities.

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 professional and support staff. Teams of faculty, clinical support specialists, and students study and learn 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 football, 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 150 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 1850s, Old Main served as the last capital building for Iowa's territorial government from 1842 until 1846, and then housed the legislature and government offices for the state of Iowa until 1927, 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 1972.

A major attraction and educational facility at the University is Iowa Hall, a 6,000-square-foot gallery in the Museum of Natural History in MacArthur 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 Osage, in the MacArthur 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 known for its history, 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 110,000 people, Iowa City lies within 350 miles of Chicago, Minneapolis, and St. Louis. The city is accessible by air service serving Cedar Rapids-Iowa City airport, by major bus lines, and by I-80 major highways.
ACADEMIC PROGRAMS

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

The College of Liberal Arts is one 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 5,000 fulltime members, many of whom have established national and international reputations. Their effectiveness as teachers is enhanced by their involvement in scholarly and scientific research. Some faculty members from the University's professional colleges also teach undergraduate classes, including a number of interdisciplinary courses, in the College of Liberal Arts.

The University's undergraduate student enrollment is about evenly divided between men and women. Approximately 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 above in high school. Approximately 91 percent ranked in the upper half of their high school classes and about 25 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. Most UI scholarships are awarded on the basis of demonstrated need and academic excellence, with a small number of awards granted strictly for scholarly achievement.

Reflecting a growing trend toward lifelong learning, the University in recent years has expanded educational programs substantially, both on and off campus, for individuals who cannot enroll as regular full-time students. Many of these learning opportunities include noncredit courses, workshops, continuing education programs for professionals, summer and evening classes offered on campus, and credit courses offered off campus. In 1957 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 enroll in traditional on-campus study.

Degrees Offered

The University offers the following degrees.

The major fields are listed in each college section of this Catalog.

Bachelor of Arts, Bachelor of Science, Bachelor of Music, Bachelor of Fine Arts, Bachelor 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 Medicine, Master of Comparative Law, Doctor of Medicine, Master of Theology, Master of Science, Master of Business Administration, Master of Fine Arts, Master of Social Work, Master of Medical Sciences, 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 1910. The University is a member of the Association of American Universities and is associated with NorthWestern, Indiana, Purdue, Ohio State, and Michigan State universities and with the Universities of Illinois, Minnesota, Wisconsin, and Michigan in the Western (Big Ten) Conference. The University is also associated with the University of Michigan and the Committee for Institutional Cooperation (CIC).

As shown below, various college 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—Lincoln Committee on Medical Education, representing the American Medical Association (AMA) and the Association of American Medical Colleges (AAMC)

Nursing—National League for Nursing, Iowa Board of Nursing

Pharmacy—American Council on Pharmaceutical Education

Schools


Library and Information Science—American Library Association

Music—National Association of Schools of Music

Social Work—Council on Social Work Education

Departments and Programs

The undergraduate engineering programs of Biomedical Engineering, Civil, Electrical, Industrial, 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

Dentistry—American Dental Association

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

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

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

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

Physical Therapy—American Physical Therapy Association

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

Psychology—American Psychological Association

Speech Pathology and Audiology—Educational Standards 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 1975, an independent study unit of from one to three additional weeks for students in the Graduate College and the College of Law.
Academic Recognition

The University recognizes high scholastic achievement for all degree and certificate programs with distinction - "with high distinction," and "with highest distinction," based on the following criteria.

All Undergraduate Colleges (except Pharmacy)
Highest distinction - highest 2 percent
Highest 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 in 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 in the President's List.

Undergraduate Scholarships
For students who rank in the top one percent of the University's undergraduate students, up to the total number of students listed, a grant of $2,000 per academic year is available. The grants are based on academic achievement and are awarded by the College of Liberal Arts and Sciences.

Honorary and Professional Societies
Phi Beta Kappa, Sigma Xi, Mortar Board, and Omicron Delta Kappa are among the national honorary and professional societies that have active chapters on the University of Iowa campus.

University Marking System
Grade (Definition)  Grade Points
A+ 4.33
A  4.00
A- 3.67
B+ 3.33
B  3.00
B- (average)  2.67
C+ (average)  2.33
C  2.00
C- (average)  1.67
D+ 1.33
D  1.00
D- 0.67
F (failing)  0

* +honors
* = incomplete
* = no pass
* = no grade
* = pass
* = audit
S = satisfactory
U = unsatisfactory (Graduate college only)
W = withdrawn

Grade-point averages displayed at the bottom of students' grade reports are truncated so as not to exceed 4.0.

The College of Law uses a numeric grading system.

Numbering of Courses
Each course in the regular University curriculum has an identifying number, prescribed by the number of the college, department, or program that administers the course. For example, "L" is the code for a course numbered 1 in the Department of Botany (2), entitled "Introduction to Botany." Course numbers below 100 designate courses primarily for undergraduates; numbers 100 to 199 designate courses for undergraduates and graduates; and numbers 200 and above designate courses primarily for graduates.

College of Business Administration
5A Accounting
5B Business Administration
5E Economics
6F Finance
6C Management and Organization
6K Management Science
6M Marketing
6N M.B.A. Program

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

College of Education
7C Consultant 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 Education Internship

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
500 Interdepartmental courses
completed the following set of high school courses (units) or their equivalent. These high school unit requirements apply to entering freshman 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 1985, and transfers with 24 or more semester hours of transferable credit who graduated from high school after 1985. Certain requirements vary for students enrolling in the College of Engineering (noted in italics). 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—in geometry, 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 two years of science with a strong science orientation and one year of a third course can be from any area, including others such as biology, art, general science, physical science, geology, or astronomy. For students majoring in engineering, the three years of science must include one year of chemistry and one year of physics. Engineering also recommends, but does not require, computer programming.

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. Candidates for admission to the College of Liberal Arts and Sciences should complete and submit the completed application forms and supporting materials to the Office of Admissions. 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 who present fewer than 24 semester hours of transferable credit are required to complete the American College Test (ACT) or the Scholastic Aptitude Test (SAT) and have their scores reported to the University before they register for classes. The Office of Admissions recommends that students complete the ACT or SAT during the fall prior to their anticipated enrollment. The scores from these exams are used as a criterion for admission, for placement purposes, for scholarships, and for awarding University-administered scholarships and loans.

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 Colleges of Dentistry, Law, or Medicine are required to take admission exams 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 earned 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 to arrange for University housing and to apply for financial aid. Entering transfer students and graduate students are encouraged to apply well in advance of the session in which they plan to enroll. All application materials are due in the Office of Admissions by the deadlines listed below. Foreign students usually make earlier application deadlines (see "Foreign Students" section).

- College of Liberal Arts—May 15 for summer session, May 15 for fall session, November 15 for spring semester.
- College of Business Administration—May 1 for summer session, May 1 for fall session, December 1 for spring semester.
- College of Dentistry—November 15, full semester only; preliminary applications should be on file with the American Association of Dental Schools Application Service by this date. Notification of acceptance will begin December 1.
- College of Engineering—May 15 for summer session, May 15 for fall session, November 15 for spring semester; early application is advised since enrollment may reach capacity for any admission of the beginning of classes.
- Graduate College—General Graduate College deadlines: May 1 for summer session, July 15 for fall session, December 1 for spring semester. Individual departments and programs may have earlier deadlines, which are indicated in their materials. All departmental deadlines should be reviewed carefully for information about early deadlines. To be considered for graduate awards, students must apply by February 1 for the fall semester.
- College of Law—March 1 for summer session or fall semester.
- College of Medicine—December 1, fall semester only. Early Decision Plan, August 1 for the following year; preliminary applications must be submitted to the American Medical Colleges Application Service by these dates.
- College of Nursing—March 1 for summer session, May 1 for fall semester, December 1 for spring semester.
- College of Pharmacy—March 1, fall semester only.
- Dental Hygienic Program—March 1, fall semester only.
- Pharm.D. Program—February 1, summer semester.
- Ph.D. Dissertation Program—January 15, academic year.
- Teacher Education Program—May 1 preceding the academic year in which the student is applying to enter professional education courses.

Foreign Students

Foreign students should begin the process of applying by January 1. At least 12 months prior to enrollment. Applicants should submit their completed applications and submit their complete application fee to the Office of Admissions by the following dates:

Graduate College—Students applying to The University of Iowa for financial aid (assistantships, fellowships, and research assistantships) February 1 for summer session, April 1 for fall session, October 1 for spring semester.

Students applying to the Graduate College who will not receive University financial aid—March 1 for summer session, April 15 for fall session, October 1 for spring semester.

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

College of Business Administration—March 1 for summer session, March 1 for fall semester, September 1 for spring semester.

College of Engineering—March 1 for summer session, March 1 for fall semester, September 1 for spring semester.

College of Liberal Arts—March 1 for summer session, March 1 for fall semester, October 1 for spring semester.

College of Pharmacy—March 1 for fall semester, March 1 for spring semester.

Determining Residence

For admission, transfer, and for purposes, the University registrar classifies all students attending the University as residents or nonresidents of Iowa according to criteria established by the State Board of Regents and on the basis of information provided by the student and other relevant information. The criteria may be found under the "Iowa Administrative Code: Board of Regents" at the back of the Catalog.

English Proficiency

Non-Native Speakers

The University's English proficiency requirements ensure that non-native speakers know English well enough to study without having hindrance 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 obtain 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 requirement are available to those non-native speakers who have already received a baccalaureate or equivalent degree from a university in the United States, the United Kingdom, Canada (excluding French-speaking), Africa (English-speaking), Australia, or New Zealand.

U.S. Citizens and Permanent Residents

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

- Graduates of Iowa high schools whose ACT composite score is 24 or above (SAT combined score of 1050 or above) and whose ACT English subscore is 21 or above (SAT 630).
- Nonresidents of Iowa whose ACT composite score is 25 or above (SAT combined score of 1150 or above) and whose ACT English subscore is 24 or above (SAT 670).

Medical Information

The Student Health Service provides health care for registered students. After students are admitted, the University reserves the right to require any student to undergo a physical examination. No student will be enrolled unless the Student Health Service determines that the student has no conditions that will interfere with the execution of the course of study. Students are advised to notify the Student Health Service of any health problems that may affect their ability to participate in University courses and activities.

CAMPUS VISITS

The University invites all prospective students to visit the campus. The University encourages students to visit the campus before making a final decision. The University reserves the right to require any student to undergo a physical examination. No student will be enrolled unless the Student Health Service determines that the student has no conditions that will interfere with the execution of the course of study. Students are advised to notify the Student Health Service of any health problems that may affect their ability to participate in University courses and activities.

Orientation Services

The Student Health Service provides health care for registered students. After students are admitted, the University reserves the right to require any student to undergo a physical examination. No student will be enrolled unless the Student Health Service determines that the student has no conditions that will interfere with the execution of the course of study. Students are advised to notify the Student Health Service of any health problems that may affect their ability to participate in University courses and activities.

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Services for Transfer Students

The Office of Admissions provides a variety of services to help you to your new campus. Students in this program are encouraged to contact their advisor or counselor to discuss the transfer process. Admissions 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 coordinator program which sends an admissions coordinator to the student's college or university at least once a year. The coordinator visits each institution to discuss the school's programs and policies. 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 over take courses at any of the five Regent Universities, and are eligible for transfer to any other University. Students over the second year are considered for admission to the second semester. The credits earned must be approved by the Office of the Registrar.

All students must be enrolled in order to receive credit for courses taken at the Regent Universities. The credits earned must be approved by the Office of the Registrar.

Tuition and Fees

The University's schedule of tuition and fees for the Fall semester is as follows:

Undergraduate
Resident: $940
Nonresident: $3,110

Graduate
Resident: $1,113
Nonresident: $2,342

Dental
Resident: $1,132
Nonresident: $5,997

Law
Resident: $2,132
Nonresident: $5,949

Doctor of Pharmacy
Resident: $2,128
Nonresident: $5,849

Medicine
Resident: $2,162
Nonresident: $5,765

General fees in addition to University tuition and fees are an additional fee of $49 per quarter, plus a $50 per semester fee. These fees are subject to change by action of the State Board of Regents.

Refund Schedule

Students who withdraw registration during a regular semester or the first week of the summer session are eligible for a refund on a pro-rata basis during the second week of the summer session. The refund is based on the number of classes completed plus a reduction of fees for withdrawals after the first week of classes.

FINANCIAL AID

Application Procedures

Students are strongly urged to consider financial aid as a possible source of funds. University of Iowa students have a variety of options for funding their education. The Office of Student Financial Aid helps students through the many forms of aid available.

Application Procedures

Students should submit their application for aid to the Financial Aid Office in the Office of Student Financial Aid. All students are encouraged to apply for aid. Many factors are taken into consideration when determining eligibility.

To determine eligibility for need-based aid, students and parents must provide information about their financial situation. The results of the Student Financial Aid Form will be sent to the Office of Student Financial Aid. The Financial Aid Office will evaluate the information provided and determine eligibility for aid.

Filing the FAFSA or submitting all other required documents to the U.S. Department of Education will ensure that all financial aid applications will be processed in a timely manner. Students should check the deadlines associated with each application and submit all required documents before the deadlines.

How Aid is Determined

The University of Iowa's application for federal aid is processed by the Federal Student Aid Program. The Department of Education provides Federal Student Aid. The FAFSA is used to determine eligibility for financial aid.

The Department of Education processes the FAFSA and provides financial aid to eligible students. The FAFSA is processed by the appropriate agency and the funds are distributed to the student.

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Scholarships

Presidential, Alumni Association, and Dean’s Scholarships

The University annually awards Presidential Scholarships to its high-school students in recognition of their outstanding high-school achievements. The awards include full-time tuition, as well as room and board, and are renewable for a maximum of four years, provided that the student maintains a 3.0 grade-point average at the University. Alumni Association Scholarships are awarded to selected non-residents of 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 four-year, nonrenewable scholarships equivalent to the amount of resident tuition. For further information, students should contact their school guidance counselor or the UI Office of Admissions.

The Iowa Center for the Arts Scholarship

The Iowa Center for the Arts Scholarship is awarded on the basis of vocational talent in the fine arts. Each department (art, dance, theatre arts, and music) awards one scholarship to an entering freshman majoring in one of the areas. The scholarship, the highest award that these areas offer to entering freshmen, is a $2,500 freshman, nonrenewable stipend. Application deadlines for these awards fall between January and March. Application form is available from the UI Office of Admissions or from high school guidance counselors.

Opportunity at Iowa Scholarships

Opportunity at Iowa Academic Scholarships are awarded on the basis of national achievement in the academic year preceding entrance. The scholarships include full-time tuition, as well as room and board, and are renewable for a maximum of four years, provided that the student maintains a 3.0 grade-point average at the University. Opportunity at Iowa Academic Achievement Scholarships are awarded to selected top-ranking students in the Opportunity at Iowa Academic Achievement 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 the top students who have achieved finalist status in the National Merit Corporation. Students may receive it for up to four years. The minimum award is $750. Awards range from $750 to $4,000, based on need. The FAF or FWS determines need.

Freshman Honors Tuition Grants and Iowa Community College Transfer Grants

Entering freshmen in the College of Liberal Arts and Science students with associate of Arts degrees from Iowa community colleges whose eligibility for the College of Liberal Arts Honors Program does not require a letter of recommendation are eligible for a $250 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 academic scholarships based on the basis of financial need and academic achievement. Entering freshmen must have an ACT composite score of 28 or above or must rank in the upper 10 percent of their high school graduating class. Upperclassmen or transfer students must have at least a 3.0 cumulative grade-point average to qualify for the scholarship. The maximum amount of the scholarship is $2,000, 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 FWS determines financial need.

LaVerne Noyes Scholarships

LaVerne Noyes Scholarships are for U.S. students with majors in Military, Atomic Energy, or War World War Army or navy veterans. Awards are based on financial need and are available to undergraduates without a bachelor’s degree. Students must file the FAF or FWS and obtain the LaVerne Noyes applications from the Office of Student Financial Aid. Application deadline is July 1.

University of Iowa Farm Scholarships

Farm scholarships are for entering freshmen who are residents of Iowa. Applicants must rank in the upper 25 percent of their graduating class, be enrolled full-time at Iowa, and live on an
Grants

Pell Grants

Undergraduate students without the insecurity of financial need. Grants are awarded from $2070 to $2,500 per academic year, depending on financial need and federal funding. Students must be enrolled at least half-time in a degree program in order to be eligible. Students may use the FAF or FPL to apply for Pell Grants.

Supplemental Educational Opportunity Grants (SEOG)

The SEOG program provides federal aid to undergraduate students without the insecurity of financial need. The amount of the grant varies depending on financial need and federal funding. Recipients must be enrolled at least half-time. The FAF or FPL determines eligibility for this program.

Educational Opportunity Program (EOP) Grants

EOP Grants are awarded to minority students with exceptional financial need. Parental income and asset information must be reported. The FAF or FPL determines eligibility for this program.

Graduate Tuition Grants

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

Loans

Perkins Loans

Perkins Loans are long-term federal loans based on financial need. The annual limit varies depending on federal funding. Students must be enrolled at least half-time in a degree program. Repayment, a 5 percent interest rate, begins one month after recipients cease to be at least half-time students. The FAF or FPL determines eligibility for these loans.

Stafford Loans

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

PLUS Loans and Supplemental Loans for Students (SLS)

PLUS loans are for parent borrowers; the SLS is for students. Both loans provide additional funds for educational expenses. PLUS and SLS applications are available from banks, credit unions, and other loan associations. The loan has a variable interest rate that is adjusted each year. SLS borrowers must be enrolled at least half-time.

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. Amounts available depend on federal funding. The interest rate is 5 percent. The FAF or FPL determines eligibility for this program.

Nursing Student Loans

Nursing Student Loans are long-term federal loans for students enrolled at least half-time in the College of Nursing. Amounts available depend on federal funding. Repayment begins nine months after recipients cease to be at least half-time. The interest rate is 5 percent. The FAF or FPL determines eligibility for these loans.

Jobs

Part-Time Jobs

Student part-time employment can provide a meaningful work experience as well as assistance in meeting educational expenses. The University of Iowa employs over 11,000 students in a variety of positions. Ranging from account clerk to writer, the jobs offer students the opportunity to increase skills, gain experience, and earn money. Student part-time employment in the office of the Registrar is limited to 20 hours per week during the academic year and 40 hours per week during the summer session. The minimum wage paid by the University is $3.05 per hour. Students employed in the Registrar's office are paid by check once every two weeks. Jobs are advertised via computer terminals across campus.

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

Students contact employers directly to arrange interviews. The Office of Student Financial Aid does not operate a referral or placement service by student employees. However, students win are hired for jobs on campus must contact the student employment office of the Office of Student Financial Aid, to process payroll paperwork.

Other Sources of Aid

A guidance counselor or high school principal may have information on local scholarships. In fact, school or public libraries are excellent sources for publications about financial aid. Micro places of employment, professional associations, and labor unions have programs to help pay the cost of education for children of employees or members. Other sources include foundations, religious organizations, fraternal orders or associations, loans or city clubs, community organizations, and civic groups. A little searching on the student's part may unveil some unexpected source of financial aid.

Information about financial assistance for physically handicapped students is available from the University Office of Services for Persons with Disabilities.

Information about financial assistance for veterans of U.S. military services is available from the University Office of Veterans Services.

Information about Education Aid to War Orphans is available from the Iowa Board of Regent (State House, Des Moines, IA 50319).
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 Associateships, Graduate Opportunity Fellowships, Scholarships, traineeships, and part-time employment also are available. Further information is available from academic departments or programs.

The resource room of the University's Division of Sponsored Programs has 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 course 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 programs (Nursing, 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 clientele 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 refer students to appropriate support services, such as academic, personal, and career counseling; academic advising services, and financial aid. The Advising Center’s offices are located in 1115 Student Union on the Clinton Street student residence halls.

Collegiate Academic Offices
Each of the University’s undergraduate colleges maintains an academic advisor office. These offices are responsible to all students in the respective colleges to help them resolve academic problems, course requirements, grading options, career and degree plans, and other matters. They assist students who wish to change advisors and 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 exchange program and the International Program Abroad. The program has developed responsibilities for international fellowships, international internships, 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 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, encouraging 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 Student Partner Program, and various cultural activities. They also arrange for foreign students and scholars from other countries and their domestic counterparts to tour, visit, and work with the University. These activities and programs are supported by the University’s Office of International Students and Scholars, in cooperation with OIES, the College of Business, and the Department of Sociology.

Placement Services
Professional staff of the Business and Liberal Arts Placement Office (BLAP) help students and graduates find employment in business, industry, government, and nonprofit agencies. Students and alumni can attend on-campus interviews by taking part in the fall and spring on-campus interview programs. Information on the interview program may be found in the career planning section of the University's Undergraduate Catalog. Placement Office staff can provide information about the programs and services offered by BLAP. Students interested in obtaining information about these programs and services should contact the Placement Office. Placement Office staff can provide information about the programs and services offered by BLAP. Students interested in obtaining information about these programs and services should contact the Placement Office.
to a weekly Life Bulletin (résumé referral) and a Reliable Life service.

In cooperation with the Alumni Association, the Career Information Network provides Alumni, students, and career professionals with: career exploration services; and other services that help with the search for employment.

The office also provides programs on resume preparation, job hunting, and interviewing skills. In Employer Information Room utilizes information on employers, salaries, and employment opportunities. Offices are located in 24 Phillips Hall and a Federal Job Information Center located in 260 Iowa Memorial Union.

In addition to placement services for liberal arts and humanities students, the office also coordinates placement information among the other colleges participating centers on campus.

Career Day, a cooperative event, is held each fall and offers students the opportunity to meet with hundreds of employers. A separate graduate and professional school fair is held each fall. A Summer Jobs Fair in the spring semester is also an annual event.

Career Information Services

The Career Information Network services office is located in Room 206 of the Iowa Memorial Union. It provides comprehensive advising and career exploration programs to help students from all colleges define their interests, abilities, values, and work and life goals. The office uses an integrated career decision-making program, which is designed to help students match their personal preferences with various career opportunities.

Career Information Center

This self-help reading room houses books, periodicals, and career-related literature on labor market trends, career options, academic requirements for specific careers, work environment, places of employment, salary ranges, advancement opportunities, and geographical regions of the country. The center also maintains information on developing strategies for finding jobs, researching organizations and companies, writing resumes and cover letters, and improving interviewing skills. The center is open daily to help students use the materials. No appointments are necessary.

The Career Information Center is located at 260 Iowa Memorial Union.

Cooperative Education

The UI Office of Cooperative Education, located in 335 Stover 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 in six areas, including full-time, part-time, or summer, are available, with opportunities existing throughout Iowa, across the United States, and overseas.

Cooperative education experiences give students opportunity to assume responsibility, apply their skills in a supervised work situation, and receive compensation. Students also benefit from an inside look at different kinds of organizations, a chance to work in their field of study, and experience with start-up and maintenance equipment and practices.

The placement and supervision of a cooperative education student is assigned to the Office of Cooperative Education. Students are also required to use their cooperative education assignments as field experiences for academic credit.

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

Ideally, students interested in this educational opportunity should visit the Office of Cooperative Education during their first year at the University.

Tutoring Labs

Mathematics Tutorial Lab

The Mathematics Tutorial Laboratory is integral to the Calculus and Algebra programs and to other courses. The lab is designed to provide students with a variety of resources to help them succeed in their courses. The lab is open to all students who need help understanding course material. The lab is open daily to help students use the materials. No appointments are necessary.

The Mathematics Tutorial Laboratory is located at 260 Iowa Memorial Union.

Services for Persons with Disabilities

The University of Iowa is committed to making its facilities, services, and programs accessible to people with disabilities. The Office of Services for Persons with Disabilities, located at 300 Tanimura Hall, provides assistance to students with a wide range of disabilities, including learning

Transcripts

Students who have completed work at The University of Iowa can obtain an official transcript of their work upon request from the Office of the Registrar. Fees are $5 for the first copy and $2 for each additional copy on the same order. For an additional $1 charge, students with proper identification can obtain an immediate transcript service. These official transcripts cannot be issued if a student has a past due University account.

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Writing Lab

The Writing Lab provides individualized writing experiences for University students who want intensive writing help. The Writing Lab staff offers consultation to help students with their writing, including developing their ideas clearly and concisely.

Students can enroll in a summer or winter term course, or they can take a one-term class. The Writing Lab provides instruction in both American and British English, as well as in the use of resources and in the writing of final drafts.

The Writing Lab is located in 300 Tanimura Hall. For more information, please call the Writing Lab at 319-335-4392.
and speech impairments, learning disabilities, mobility impairments, visual impairments, and obesity. 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 adhesions, orientation, academic and career planning, academic support services, financial aid, housing, transportation, and parking, and student health care, and employment services. The clerks work with students individually to locate the type of assistance appropriate to their needs, from tutors or personal assistants to tape recorders in emergency-stack libraries.

**Special Support Services**
The Office of Special Support Services, located in Calhoun Hall, enforces the University's commitment to increase social diversity in the student body and provides eligible students with academic, social, and financial support.

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

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**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. It refills coupons to appropriate campus and community activities and programs and provides master-calender information. It also coordinates the houseman mailing service and maintains the housing Clearinghouse, which provides up-to-date listings of available rental units. City and campus maps, lists of rental facilities, motels, and apartment complexes are available seven days a week.

**Campus Programs and Student Activities**

The Office of Campus Programs and Student Activities (OCPSA), located in the Iowa Memorial Union, provides diverse and balanced social, cultural, recreational, and educational programs and activities in the Iowa Memorial Union and on The University of Iowa campus. It works with students and student organization staff to build and maintain on-campus environments that enhance their growth.

Students are welcome to seek guidance from professional advisors in the OCPSA about how they can find and become involved in organizations suited to their interests. Those with special needs who want to form new groups or organizations can request guidance from the OCPSA staff.

The office presents workshops on enhancing leadership abilities to student organizations and individuals upon request. It also sponsors the Student Volunteer Clearinghouse, a program designed to incorporate local volunteer agencies with University students interested in Volunteer service.

Cultural programming and special event planning are ongoing tasks for UCPSA. The office plans traditional events such as Homecoming and Reunion Weekend. Cultural and international events and festivals and new campus programs. It promotes major concerts and is responsible for the Arts, Comedy, and Recreation areas, the Student Activities Center, the University Box Office, Campus Program Business Service, SCOPES, First Arts Council, Utility Award, the Afro-American Cultural Center, and the Chicano-American Cultural Center.

**Cultural Centers**

**Afro-American Cultural Center and Chicano/Indian-American Cultural Center**

The University operates the Afro-American Cultural Center and the Chicano/Indian-American Cultural Center under the auspices of the Office of Campus Programs and Student Activities. Students meet at the center to share experiences, find mutual academic and recreational interests, and develop social programs, all in an atmosphere that emphasizes their cultural heritage.

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

The Chicano/Indian American Cultural Center sponsors conferences, lectures, and workshops on cultural themes. The center also houses a library of special interest books and periodicals and displays all mema pered by students and guest artists.

**International Center**

The International Center serves members of the University community who have international interests. Its facilities and programs are designed to encourage interaction among people of all cultures.

The International Center Lounge is open to University and Iowa City residents. Several events are sponsored by the International Center unit.

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**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 six athletic programs: football, basketball, track and field, baseball, swimming, golf, wrestling, 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 alumni, one representative from the University Staff Council, and two students.

**Intercollegiate Athletics for Women**

The University has several 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. It competes as a member of the Big Ten Conference and the National Collegiate Athletic Association (NCAA). Athletic scholarships are available in all ten programs for qualified student-athletes. Women's intercollegiate Athletics is governed by the University Board and Control of Athletics.

**Recreational Services**

The Division of Recreational Services, located in the Student Union, administers one of the nation's finest recreation programs in the country. There are seven major programming areas in which students, faculty, and staff may participate.

**The Intramural Program**

More than 20 different intramural sports are offered on campus. The Intramural Sports Office administers intramural sports such as basketball, volleyball, coed football, and coed tennis with college-wide teams. All sports have regular seasons and tournaments. The Intramural Sports Office also sponsors a number of special events such as the annual Fall Classic and the Spring Classic.

**Sports Clubs**

Recreational Services advises and funds more than 20 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 ultimate frisbee.

**Lesson Programs**

Recreational Services offers a variety of noncredit instructional classes for all age 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

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include gymnastics, golf, tennis, bowling, racquetball, and various martial arts classes.

The division also offers intramural sports that attract an average of 15 people to an average of 250 people for all ages and fitness levels.

Informal Recreation
An informal drop-in recreation program is available for winter sports, such as basketball, swimming, racquetball, bowling, tennis, weight training, and yoga.

Outdoor Recreation
The division operates the Macleod Square Recreation Area, one of the finest university-managed outdoor programs in the country. The 4,340-acre park area, located 15 miles north of Iowa City, includes the University of Iowa Center for the Environment, offers a variety of outdoor activities, such as white water rafting and canoeing, backpacking, bicycling, kayaking, rock climbing, mountain biking, cross-country skiing, and downhill skiing, and provides an outdoor checkout service. Located at the North Street Clinton Street, the park offers all types of outdoor recreation, including cross-country skiing, picnicking, equipment, canoes, backpacks, skis, and snowshoes.

Persons with Disabilities
Recreational and exercise programs with equipment specified for persons with disabilities. In addition, reserve 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 strictly for persons with disabilities.

Summer Sports Camps
The University of Iowa has one of the largest summer sports programs in the Midwest. All popular contact sports are offered, such as basketball, gridiron football, soccer, softball, tennis, track and field, golf, tennis, volleyball, wrestling, cross-country, and field hockey.

Iowa Memorial Union
The Iowa Memorial Union is the hub of student life. Its facilities include aCopying center, the Campus Information Center, the

Women's Resource and Action Center
The Women's Resource and Action Center (WRAC) provides services to meet educational, cultural, spiritual, and personal needs of University and community women. WRAC advocates the removal of all barriers to equal access and self-determination for women. It provides a nurturing environment, educational programs and services, the WRAC, which is committed to empowering Iowa women through providing information, skills, and support.

HOUSING
Fair Housing Policy
The University is a Fair Housing Ordinance and provides equal opportunity without discrimination in the areas of race, color, creed, national origin, or sex.

University Residence Halls
The University's residence halls provide housing and dining accommodations and academic and recreational support for 5,250 single students. The residence halls are designed to

University Counseling Services
The University Counseling Service (UCS) is committed to fostering a multicultural environment. Its staff of professional psychologists, social workers, and advanced doctoral students offers learning disability assessment and career and personal counseling and therapy to all students. The University Counseling Service offers group sessions, seminars, workshops, and consultation services. Some 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 Registrar. It serves veterans, dependents of veterans, and civilians in matters relating to veterans affairs educational benefits, University registration, and study at the University.
provide a pleasant atmosphere conducive to effective study.

Single, double, triple, and quadruple rooms with full or partial board are available in the Great House Residence Halls (east campus), which include Diefenbaker, Drummond, Martin, and Walker halls, and in the Clinton Street Residence Halls (east campus), which include Burr, Custer, Drum, Mayflower and Staley halls. There are lounges, study areas, recreation rooms, counseling facilities, and small stores in or available to each residence hall. Computer terminals, reference materials, newsstands, and pre-paid movie group study items 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 who select the meal plan programs and activities provide 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 Burr 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 room only. Students who do not live in residence halls may purchase full or part-time contracts.

Applications and Assignments
Prospective undergraduate students should receive housing application forms to apply for residence hall accommodations. Students applying for residence hall accommodations should read the terms and conditions of the application. All information requested on the application form, sign the contract portion, and return the completed application/contract with a check for $50 to the University Housing Assignment Office, Burr Hall.

Applicants who want to room together should enter each other's name and 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.

Applications 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 $50 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 accommodations.

Upon written request, the $50 advance payment is refunded to applicants who are not admitted to the University. This refund will only occur if the student cancels their residence hall contract in accordance with the terms and conditions set forth in the contract.

Rates
Basic rates for University residence hall accommodations for the 1981-82 academic year are $250 for a double room and $390 for a triple, with all board (3 meals a day per week). Rates for room and board options vary according to accommodations. Rates are subject to change annually.

Family Housing
There are 74 University-operated apartment complexes for married students or legally defined family units in the Haywood Drive, Haywood Court, and Parkview complexes.

Monthly rents for 1980-81 academic year range from $235 for efficiencies, $245 to $275 per person for one-bedroom units, and $327 to $348 for two-bedroom units. Rents include utilities, with the exception of on-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 only after residence halls are complete, but they are not accepted more than one year in advance.

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

Fraternities and Sororities
Thirty undergraduate social fraternities and ten undergraduate social sororities exist on the Iowa campus. Twenty-two fraternities and 15 sororities operate chapter houses, which accommodate 25 to 400 people each.

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

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

Code of Student Life
As members of the academic community, students are encouraged to develop a capacity for critical judgment and to engage in a sustained and independent search for truth. Freedom to teach and freedom to learn are inseparable aspects of academic freedom, and each is necessary to the proper functioning of the University. Institutions of higher education have an obligation to maintain appropriate opportunities and conditions in the classroom, on the campus, and in the larger community. To provide and maintain such opportunities for every individual student to exercise these freedoms to learn without undue interference by others, the University has developed a Code of Student Life. The code covers conduct that adversely affects a University process or function or some distinct and clear interest of the University in its academic community. In order to foster an environment where academic freedom is exercised in a responsible manner, all students are expected to acquaint themselves with the code and to conduct themselves in accordance with the standards it sets forth.

University Policy on Human Rights
The University of Iowa brings together in common pursuit of its educational goals persons of many nations, races, and creeds. The University is guided by the precept that in no aspect of its programs shall there be discrimination of the treatment of persons because of race, creed, color, national origin, age, sex, disability, and other characteristics that deprive the person of consideration as an individual, and that are protected by law. Facilities and services shall be available to all. Among the criteria that will be used in determining the person of consideration as an individual are those based on affiliations or outstanding preference. 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 to the 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. (for)
- 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.

Sexual Harassment (Discipline, Education, Engineering, Law, Medicine, Nursing, and the Graduate College) also have established an ombudsperson system as an alternative mechanism for reaching 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 complaint 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 20.4(b) of the University Operations Manual. A description of these formal procedures, found in section 20.20 of the University Operations Manual, can be obtained from each college's office of academic programs, the Undergraduate Academic Advising Center, and the office of the College of Associates Council.

University Ombudsperson

The Office of the University Ombudsman responds to probes and disputes brought forward by all members of the University community—students, staff, and faculty—that appear unrecoverable through existing channels. The ombudsman investigates claims of unfair treatment of erroneous procedures or actions as an analytical and detached listener, information resource, advisor, intermediary, and mediator. The ombudsman considers all sides of a question in an impartial and objective way.

The ombudsman's office is an independent entity. It is not part of and does not report to the University administration. It treats all requests and consultative in strict confidence. It never discloses a client's name or the nature of his or her complaint without the client's consent.

Before considering the ombudsman, 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 their problems with department chair's and/or supervisors; students should follow procedures in the handbook Policies and Regulations Affecting Students. Students, staff, and faculty usually should consult the appropriate academic advisor, department head, supervisor, chair, dean, or other administrator before contacting the ombudsman.

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

The ombudsman has the power to order changes in rules, regulations, policies, procedures, or the behavior of others. Solutions reached through the Office of the University of Iowa Student Ombudsman and beyond, it is 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 Consensual Relationships," which is printed in full in the booklet Policies and Regulations Affecting Students.

The University recognizes the seriousness and will not tolerate the University. It explicitly prohists sexual harassment discrimination or other behaviors or actions that are sexual in nature; this includes providing an educational environment and learning experience for 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 the academic, academic, faculty, and staff, and the academic community as a whole. When, through fear or personal, and faculty member subsides or is presumed 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 situations, sexual harassment incurs unlawful the University's mission to provide an educational environment for students, a student's status, or a faculty member's status at the University and beyond.

(c) While sexual harassment most often takes place in situations of power imbalances between the persons involved, the University 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 unacceptable working or educational environment.

Section 2. Prohibited Acts

No member of the University community shall engage in sexual harassment. For the purposes of this policy, sexual harassment is defined as unwelcome advances, requests for sexual favors, and verbal or physical conduct of a sexual nature when:

(a) Submission to such conduct is made explicitly or impliedly or any condition or term of an individual's work or status in an academic environment.

(b) Submission to or rejection of such conduct is used as a basis for an individual's work or educational decision affecting an individual or.

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

Section 7. Consensual Relationships in the Institutional 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 is being supervised by the faculty member.
Special Resources at Iowa

Research Activities ............... 27
Iowa Lakeside Laboratory ........ 34
Project on Rhetoric of Inquiry ... 34
University Libraries .............. 34
The University of Iowa Health Center .................. 35
The Iowa Center for the Arts ...... 38
Museum of Natural History ........ 40
Old Capitol ...................... 40
Other Services ..................... 40
RESEARCH ACTIVITIES

The University recognizes that its creative activity is indispensable if it is to have the resources, facilities, and professional excellence expected of a distinguished institution of higher learning.

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

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

- Sees the development of new knowledge;
- Develops and maintains the infrastructure for proper conduct of research;
- Helps individuals, groups, and organizational units seek 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 internships for projects judged worthy of pursuit;
- Seeks interdisciplinary and collaborative research and service efforts within and beyond the University to take advantage of funding opportunities;
- Identifies high-priority national and state research needs related to the University’s mission; disseminates information pertaining to those needs and assists in development of a University agenda to meet these needs;
- Affects federal legislation and regulations enhancing the University’s position as a major research and educational institution;
- Promotes the development of the Oakdale Research Campus in support of the University’s research mission;
- Stimulates and manages technology transfer of intellectual property to the private sector;
- Provides the Oakdale Research Park as a vehicle for Industry/University interaction.

The Office of the Vice President for Research also maintains a close working 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 distinguished accomplishments in basic research or creative activity, one representative of the University staff, and two student members. Faculty members include two each from the social, biological, 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 administering 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 professors or investigators involved in interdisciplinary research programs not authorized to award graduate degree; 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-funded program of research.

Incidental Grants

Limited funds are also available through the Office of the Vice President for Research for small grants to faculty members to cover the costs of materials, supplies, equipment, proposal writing, travel, and related incidental assistance 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 manages the solicitation of University-wide services required by faculty members engaged in research and creative activities. They include the following:

Central Research Facilities

To maintain state-of-the-art resources for key research activities within the University, selected facilities are identified for centrally supported development. Such facilities are available to all interested graduate students and faculty and on a time-available, fee-for-service basis to those outside the University community. Some financial support is provided 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 Eckerman Medical Research Building, provides instrumentation and technical assistance for research programs involving digital image processing and analysis, three-dimensional data modeling, molecular modeling, video processing, and computer animation.

The facility has two silicon graphics frame workstations and two Gould P5000 image processing systems that handle most graphics and imaging applications. Other hardware includes two Tektronix 4054 video monitors, a Macintosh network, a Nikon Optiphot optical microscope, a digital camera, and various image storage peripherals.

The frame workstations provide a powerful means to display graphic data. There is accessories software for creation of real-time, three-dimensional animations and Visual View software for display of, image display and three-dimensional data sets such as CT and MRI scans. The facility has the capacity to digitize images from microscopic slides, automated electron microscopy, video signals, and video tapes. Mass storage peripherals allow for the transfer of images that have been digitized elsewhere. Once digitized, images may be processed in a number of ways, including pseudo-color 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, service as analysis consultants, train novice or experienced users in the operation of facility systems, and develop new and
customized existing imaging and graphics hardware.

The facility is well equipped for molecular modeling by computer and has several packages available for use, including Sybyl, Fasta, Quanta and Charm, and Gaussian 03. The facility also offers 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 fields of materials science, biology, and environmental sciences. The facility includes a transmission electron microscope equipped with an E-Tech, a cryo-electron microscope, a negative staining electron microscope, and a high-resolution transmission electron microscope. The facility also offers access to the Cambridge and Brookhaven molecular databases.

The facility is intended to serve both experienced and novice investigators and to provide training for those seeking microscopy-related careers. Alternatively, all or parts of a project can be handled by the facility staff. The facility is available seven days a week, 24 hours a day, on a first-come, first-served basis. It is located in the Eckstein Medical Research Building.

High Field Nuclear Magnetic Resonance (NMR) Facility

Two superconducting spectrometers form the basis for the High Field NMR Facility. The Bruker 9.4T NMR spectrometer operates at 360 MHz, and the Bruker 4.7T NMR spectrometer at 80 MHz for high-sensitivity observation. Very high spatial resolution and sensitivity are achieved for structural determination of complex molecules. Both instruments are fully multidimensional and have variable temperature capabilities. Typically, multivariate two-dimensional and three-dimensional experiments can be performed on the spectrometers. Both solid and liquid samples are available for high-resolution powder and liquid-state NMR experiments. The Bruker 9.4T spectrometer is scheduled for early 1999.

The facility is equipped with a Bruker 9.4T spectrometer that is capable of performing high-resolution spectra. The facility is located in the Cambridge-Max Planck Institute for Chemical Biology Facility.

High Resolution Mass Spectrometry Facility

The High Resolution Mass Spectrometry Facility is located in the Cambridge-Max Planck Institute for Chemical Biology Facility. It is equipped with a Bruker 9.4T spectrometer that is capable of performing high-resolution spectra. The facility is located in the Cambridge-Max Planck Institute for Chemical Biology Facility.

Gas chromatography/mass spectrometry (GC/MS) permits the separation of all components of a complex mixture that can be separated by gas chromatography. This technique is especially useful in research projects that require the analysis of complex samples, such as environmental studies.

Fast atom bombardment mass spectrometry (FABMS) permits the analysis of very large, polar, and/or involatile compounds that cannot usually be studied by other mass spectrometric methods. FABMS is particularly useful for biologically important compounds such as lipids, steroids, and nucleic acids.

High resolution mass spectrometry (HRMS) provides extremely accurate mass measurements that allow the assignment of accurate molecular ion for any compound. The instrument is equipped with a high-performance liquid chromatography (HPLC) system, a high-resolution mass spectrometer, and a data acquisition system. The facility is located in the Cambridge-Max Planck Institute for Chemical Biology Facility.

Large Scale Fermentation Facility

The Large Scale Fermentation Facility, located in the Brown Science Building, provides the necessary support for the large-scale growth and recovery of microbial cultures as well as the production of a wide range of products. The facility is equipped with a 500-L fermentor that is capable of growing large-scale fermentations in the United States that are able to grow large-scale fermentations. The facility is equipped with a 500-L fermentor that is capable of growing large-scale fermentations. The facility is equipped with a 500-L fermentor that is capable of growing large-scale fermentations.

With its new, sophisticated growth, monitoring, control, and harvesting systems, the facility is equipped with a 500-L fermentor that is capable of growing large-scale fermentations. The facility is equipped with a 500-L fermentor that is capable of growing large-scale fermentations.

The facility director is available for consultation on medium composition, inoculum preparation, and fermentation strategies. Further services are provided in the form of medium preparation, sterilization, and fermentation monitoring. The facility is equipped with a 500-L fermentor that is capable of growing large-scale fermentations. The facility is equipped with a 500-L fermentor that is capable of growing large-scale fermentations.
Users can arrange for preliminary pilot studies, gas chromatography, and other relevant technical and scientific services.

**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 tenth-thousandth of a millimeter. Other CW lasers, including low power argon ion, helium/neon laser (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, 3s, 4s), 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. Additional pulsed dye laser system can be pumped by a pulsed excimer laser (less than or equal to 100 pulses per second) or a pulsed repetier vapor laser. A 300 watt Nd:YAG laser (for computer-controlled stage for laser microfabrication applications also is available. In addition, the facility is equipped with a variety of spectrometric, electronic, mechanical, 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 50-foot-long enclosed optical bench with a variety of workstations for users. Typical laboratory equipment is available in a separate laboratory in the College of Engineering.

A separate Microfabrication Facility in the Chemistry-Biology Building includes a range of thin film processing, lithography, and diagnostic equipment, including a table, pulsed Nd:YAG laser system with harmonic generation in the infrared; two CW CO2 lasers; one thick, electric power pulse 150 watt and one 1088 micron 400 watt, a 28 watt CW argon ion laser with doubler interfaced with computer-controlled translation and a scanning optical system; electron probe microanalyzers, electron spin resonance, thin film ionizer; stylet phonon, fiber microscope; scanning electron microscope; optical measuring equipment, and several high-speed digital oscilloscopes and computers for experiment control. An ultramodern electronics and automation facility is being installed on the Olenk 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 fluorimeter for fluorescence, and polarization and lifetime measurements, a circular dichroism spectrometer, and a high-resolution visible 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 Weyer 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 research using 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 also include automatic dialing, automatic execution of complex questionnaire skip patterns and logic branching, call attempt disposition tracking, management of numeric and verbal responses in machine-readable form.

SSI also provides training for graduate students interested in techniques of survey methodology. Professional and support 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 the co-campaign representative of the U.S. Census Bureau's State Data Center Program, with responsibility for maintaining and providing access to the decennial census data.

The University maintains membership in the Inter-University Consortium for Political and Social Research (ICPSR) through SSI, enabling members of the University community to obtain a vast array of social science datasets 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 methodology, data design, data collection, and data analysis. It also may conduct entire survey research projects through presentation of a final report.

**Statistical Consulting Center**

The Statistical Consulting Center (SCC), located in Mizzou 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 10 faculty, staff, and students as well as to the broader state and regional community.

Drop-in consulting services are available free of charge for graduate students and new faculty members.

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 federal and nonfederal sources of support for University research projects by faculty, staff, and graduate students. The division searches sources and prioritizes the best opportunities, and students take advantage of funding opportunities that meet their academic and faculty needs with potentially interested funding agencies. The staff members specialize in major disciplinary areas.

The office maintains files on all institutional agency programs, complete with program guidelines, application forms, regulatory information, and directories of agency staff. Division staff members are well-versed with proposals and requirements of agencies.

The division's resource center is located in Gilmore Hall, maintains extensive files on private foundations and corporations that support college and university community. Among the many resources of the center are directories of available grants, fellowships, and scholarships. Directives are mailed at special populations and interests; directories and annual reports of private foundations, and descriptions of nonfederal agencies and foundations with guidelines and application forms for program support. The center maintains its own computerized database of information on more than 4,000 nonfederal 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, mail, or face-to-face;

• "Research and Graduate News (RGN)," published in the University's faculty/staff newsletter;

• Twice-weekly bulletin from the Community Relations Department, which lists all government requests 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 new opportunities and potential collaborators with faculty members' interests. 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 clearance documentation regarding the use of humans or animals in research. The staff's understanding of relevant regulations 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 a mechanism to protect intellectual property and inventions generated at the University of Iowa which might be of potential commercial application, 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 technological transfer at the University was greatly simplified. Communications between industry and the inventor were enhanced as sponsors of separate research contracts could be assured the opportunity to license resulting technology from the University, even if federal funding had also been received on the project.

The Office of Technology Transfer was established in the UIRF in January 1980 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 administered by the Office of the Vice President for Research. Its 560 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 interstate divided highways. Approximately 60 researchers, students, patients, staff, tenants, visitors, and residents 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 are subsidiaries or satellite programs of University colleges and major departments. Among these are the Chemical Dependency Center, Dentistry Clinical Practice Management Center, Institute of Agricultural and occupational Health, Institutes of Child Behavior and Development, Regional Genetic Counseling Services, Iowa Geological Survey, OAKBRI, Iowa Humanities Board, Labor Center. Small business development center, Legislative Extended Assistance Program, Computer and Design Software (CASS), Pediatrics and Physiological Laboratories, and Animal Care Research Facility.

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, Genome Program, Iowa Drug Information Service, Iowa Liberal Research Program, National Resource Center on Family-Based Services, and Health Protection Office.

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

Oakdale Research Park

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

Located on a 15-acre parcel of land on the Oakdale Research Campus, the park includes a multimarket 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 businesses—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 TIC also services established companies eager to innovate new processes.

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 Iowa business community. Located on the University's Oakdale Research Campus, TIC provides congenital, enterprise-friendly space which has collaborations with academic science, and those in business can flourish. It often makes it possible to forward access to the University's computing facilities, research equipment, and instruments. As well as access to a battery of counseling services on crucial issues such as management, marketing, and finance.

University House

University House, established in 1977, is a place and program dedicated to the support of independent and collaborative scholarship. Occupying 25 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
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 change. The center fosters interdisciplinary study of the physical, chemical, and biological processes that influence the earth's changes and trends by bringing together the University's special strengths in the health sciences, biogeochemical cycles, hydrologic and 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 or 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 assessing 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 research 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

Composed of academic and corporate members, the Iowa Research and Development Consortium acts in an advisory capacity to the University in the following areas:

- Development of a plan for University participation in Iowa's economic growth;
- Planning for selected technology transfer projects;
- Development of marketing strategies for attracting businesses to the area and the state;
- Construction of a program to make information about University research more 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, dissertation, and preservation of knowledge about Iowa's prehistory and history. OSA is responsible under Iowa state laws 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 emphasizes archaeological survey and evaluation of development areas, such as new highway corridors, to recover data from 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.

Iowa's Center for Digital Archeology, a collaboration on research projects with the Departments of Anthropology and Geography and with their colleagues in the Iowa sQuantitative Studies Group. Several have advanced faculty appointments and teach courses in the anthropology department.

OSA resources include more than two thousand accessioned artifact collections from sites around the state; comparative and type collections that aid in identifying archaeological material; extensive archival and document holdings on Iowa archaeology and related subjects; and field equipment that supports large-scale archaeological field work. Members of the University community and the public are welcome to visit the OSA's offices, laboratory, and artifact repository on the campus.

Weeg Computing Center

The Geordie F. Weeg Computing Center (WCC), located in the Lindquist Center, provides research and instructional computing facilities to all students, faculty, and staff at the University of Iowa.
WCC maintains systems capable of in extraordinarily wide variety of applications. These facilities are accessible through networking 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 campus, WCC maintains membership in the CENET, MIRENET, and BNET networks.

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

WCC's Personal Computing Support Center provides purchasing, installation, and training for hardware and software, and oversees the campus microcomputer user network.

Personal computers 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 centers.

Credit educational seminars and consultation on general computer use are available on an ongoing basis. Specialized consultation is also provided for equipment and software, and for developing, networking, database, and instructional design applications.

Detailed incentive on computing facilities and services is available from the Information Systems and Technology Center.

Evolutionary Ecology and Behavior

Chad Stephen Hendrich

Professor: Richard C. Baker (Cornell); Robert W. Croner (Brown), John T. Schallhorn (Brown); Holmes A. Solomon (Cornell); David Warner (Cornell); John A. Cronin (Cornell), Russell L. Czap (Anthropology); Ann B. Bud (Cornell), Stephen Hendrich (Brown), Teresa Norton, (Brown), George Rinaldo (Geography).

Assistant professor: James S. O'Brien (Chemistry).

 Programs and Facilities

The Department of Biology and Botany offers a range of opportunities leading to the M.S. and Ph.D. degrees with specialization in ecology and evolutionary biology, emphasizing adaptation, population ecology, and community ecology. Participatory strengths of the program are quantitative methods in ecology and evolution, ecology/zoology, plant/animal interactions, 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 locally by the Bear Mountain Nature Recreation Area just outside Iowa City, with lakes, temperate hardwood forests, and old fields. The Iowa Laisiastic Laboratories (Iowa City) with its year-round laboratory facilities, housing, and a research vessel, provides opportunities to study undisturbed prairie, marshland, and lake ecotones.

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. These research projects have resulted in the University of Iowa in a member of the Organization for Tropical Studies and regularly works students to the Tropical Ecology Course in Costa Rica. In addition, the University has a cooperative program with the University of the Andes in Merida, Venezuela.

Institution 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, the computer, and a PDP-12 computer. There is ample space for housing a variety of organisms, and a recently constructed 3,000 square-foot greenhouse provides research facilities for research projects. The botany greenhouse contains a large collection of desert, aquatic, and economic plants. The botany herbarium contains more than 25,000 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, consultation, course work, and companionhip opportunities with members of the University or other Biology, Botany, Chemistry, Computer Science, Geography, Geology, Mathematics, Microbiology, Physiology, and Biophysics, and Statistics and Actuarial Science.

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

Financial Support

All graduate students are offered financial support. Teaching assistantships, research assistantships, internal scholarships, and professional training fellowships are available. The Fordham Fund assists students travel for study. International students may apply for the Pre-doctoral Assistantship; the Instrursion Program or the NSF fellowships for students in behavior, and may compete for seed grant money from the University. Computer resources are available for graduate students, postdoctoral researchers, and faculty members.

Iowa Quaternary Studies Group

Professor: Robert D. Adkins (Geology); Low D. Clark (Geology); Irvin F. Kopper (Geology).

Associate professor: James P. Ambrose (Geology); Anthony R. Upton (Geology); Olga S. Mohl (Geology); George P. Melnychuk (Geology); Frank W. Wood (Geography); George G. Bodsworth (Chemistry).

Assistant professor: Mary W. Winter (Anthropology).

Research director: William Green (Anthropology); George R. Hauberg (Geology).

Assistant professor: R. Sanders White (Geography); Donald F. Scharff (Geology).  

Programs and Facilities

Students working towards master's and doctoral degrees in the Department of Anthropology, Geology, Geography, and Statistics and Actuarial Science may apply for financial assistance for any aspect of Quaternary studies. Students with interests in Quaternary studies are encouraged to broaden their programs with courses offered in other disciplines 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, bryophytes, molluscs, insects, and vertebrates; studies of glacial geology, geomorphology, and stratigraphy; glacial geomorphology, paleoecology, and stratigraphy, soil stratigraphy and geochronology; palynology, macroflora of plants and trees; studies in wetland distribution, geography, and ecology; studies of human-gatherer societies and their environments, and studies of cultural development and its relation to physical and 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-operated core drilling equipment, laboratories for sedimentological analysis, pollen preparation, vegetation preparation, artificial weathering, X-ray equipment, optical microscopy, and scanning electron microscopy. Both microcomputers and the University's Wreg.
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 Paleontological Repository (two million specimens including both vertebrates and invertebrates) and the Herbarium (over 200,000 specimens in vascular plants and about 45,000 specimens of bryophytes). The Office of the State Archaeologist houses the State Archeological Repository, with over half a million specimens. Other specialized collections of more than 2,000 seeds and fruits and more than 1,600 pollen types are available in the geology department.

Departmental branches of the library have extensive holdings of books and journals in the botany, geology, and geography departments, and the Office of the State Archaeologist 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. Travel and facilities are available for postdoctoral students. Special funding is available from individual departments for field expenses. Comprehensive information is available for graduate students, postdoctoral students, and faculty. For further information, write directly to the Department of Anthropology, Botany, Geography, Geology, or Statistics and Actuarial Science, or to the director of the Department of Geology.

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.

Ira B. McGladey 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.

Alzheimers and Alzheimer's 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 Materia 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 Department 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 Palace 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 Rays 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.

Craniomaxillofacial 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 Garst Educational 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.
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 on 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 postgraduate research are available. (See listing for "Iowa Lakeside Laboratory" in the Catalog of Library Arts section of the Catalog.)

PROJECT ON RHETORIC OF INQUIRY

Project directors: Donald N. McClary, John S. Nelms.

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

PORIO's executive committee coordinates the project initiatives, 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 symposia, publications, and fellowships for Iowa postgraduates and visitors.

The biweekly Rhetoric Seminar was founded in 1989 by a small group of Iowa faculty. The group grew to include some one hundred colleagues, who participate in a year-round interdisciplinary intercolloquium and other seminars in philosophy and engineering. Before each seminar, PORIO 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 1990-1992, and other workshops are planned on topics as varied as statistical theory and academic instruction.

PORIO directs two book series, from 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 PORIO’s various programs, and through its classes, to supplement undergraduate and graduate courses required in the humanities. A graduate certificate program is being planned. More information, including semester course lists, is available from the office of the Program on Rhetoric of Inquiry.

UNIVERSITY LIBRARIES

University Libraries: Dr. Frank J. Denoy, Wayne Rusley, C. Edward Stoner


University of Iowa, Iowa City, Iowa 52242-3010 (2122-2300)

Iowa Lakeside Laboratory See "Iowa Lakeside Laboratory" in the Catalog.

Orthopaedic Biomechanics Laboratory Contact the College of Medicine for information.

Transfusion Laboratory Contact the Division of Continuing Education for information.

Others

Birth Defects and Genetic Disorders Unit Contact the College of Medicine for information.

Collaborative Studies of Affective Disorders Contact the Department of Psychiatry in the College of Medicine for information.

Diabetes Control and Complications Trial Contact the College of Medicine for information.

Gerontology Programs Contact the School of Social Work in the College of Liberal Arts for information.

Iowa Testing Programs See the College of Education section of the Catalog.

Molecular Biology of Tumor Cells Contact the College of Medicine for information.

Pharmaceutical Services Contact the College of Pharmacy for information.

Project on Rhetoric of Inquiry (PORIO) See "Project on Rhetoric of Inquiry" in this section of the Catalog.

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-eight in number of volumes held and third in expenditures for library materials.

The Main Library, its 11 departmental libraries, and the Law Library comprise more than 11 acres of space, provided seating for more than 7,000 users, and house more than 70 miles of shelving for collections.

Recent statistics show that library users annually check out nearly 1 million items to faculty, staff, and students; record 1.25 million in-building uses of library buildings and other materials; and answer nearly 150,000 questions.

University Libraries has recently embarked on a comprehensive user education program to ensure that information on its resources and services and instruction in their use. In 1988, more than 1,302,000 people participated in programs such as subject-based faculty/gateway seminars, course-related instruction, UNIX training, and reference consultations. Special programs included workshops for international students, programs for faculty in the Iowa National Supercomputer Institute for Forensics, and programs on

Mary E. Fields, Thaddeus N. Stege

Christopher Evans, Mark A. Waggener

Richard W. Brown, Anthony Schermerhorn.
The University of Iowa Health Center • Special Resources at Iowa

library use for students, >7. 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 microfilms (microfiche, microcards, and microreprint and microfilm society) as well as various other formats, including maps, video recordings, and sound recordings. Also available are information resources in compact disc format, six CD-ROM cross-referenced online databases that faculty and students can access in the library and those online. 4 Additional online resources are available for researchers.

The Main Library serves the special library for the social sciences and the humanities. Located within this building are various special collections. The Government Publications Department holds nearly 1 million print pieces and more than 1 million microform items. At a full U.S. Government Depository Library, it automatically receives thousands of titles published by the federal government. This department is also a state of Iowa depository, a European Communities (Common Market) depository, and a United Nations depository. The Map Collection contains over 100,000 maps and 100,000 aerial photographs, and 10,000 cataloged manuscript centers. This department also manages the University's Special Collections Department covers a wide range of subjects, including works on the culinary arts, a major collection of Lincoln material, a rare collection of the history of hydraulics, and a large collection of musical scores.

The Health Sciences Library houses a special collection of rare and classic medical works in the John Martin Rare Book Room, named after the principal donor of the entire collection. Martin, a retired neurosurgeon from Chicago, originally wanted to add to this world-famous collection.

The University Library and the Law Library have implemented an automated library catalog and automated checkout systems. The online catalog OASIS contains over 9,000,000 records representing approximately one percent of the cataloged collections of the libraries.

Known as OASIS (Online Access System for Information and Services), the system greatly enhances teaching and research at Iowa. When the system is fully implemented, faculty and students will benefit from a sophisticated tool for accessing information on library materials from any database. The student or the library user will be able to determine whether a library item has been ordered, if it is available, or if the user is unable to check out the book. The University telecommunication network transmits much of this information available from terminals in the libraries and from laboratories, offices, dormitories, and homes.

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

The University of Iowa Libraries is a member of several consortia, including the Research Libraries Group, the Iowa Computer-Assisted Network, the National Library of Medicine, the Medical Library Network, and a resource-sharing network for the CIIC institutions (the Big Ten and the University of Chicago). Through these organizations, and especially through the Research Libraries Group, faculty and students at Iowa have gained greatly increased access to materials held at other institutions.

THE UNIVERSITY OF IOWA HEALTH CENTER

The University of Iowa plays a major role in the preparation of health professionals for Iowa and the nation. Its health center is one of the academic, research, clinical, and educational institutions, and service agencies to prepare physicians and practitioners to serve a wide spectrum of human health needs ranging from basic care and health care to advanced diagnostic and treatment procedures—and to search for entirely new knowledge.

As soon as they have acquired basic knowledge in their fields, health profession students begin to learn by doing. Following the examples and directions of skilled practitioners who teach while providing health care for thousands of patients from the community, state, and region. The University of Iowa Health Center thus is simultaneously a center of learning and of service. It is one of the most advanced, comprehensive health sciences centers in the United States.

It shares many skills of camps through cooperative programs 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 through conferences, clinics, and retreaters.

Programs, facilities, and courses of the colleges of Dentistry, Medicine, Nursing, and Pharmacy are described in other sections of the Catalog. Other health center units and related programs are described below.

The University of Iowa Hospitals and Clinics

Director and assistant to the president for administrative health services: John P. Callery

Administrative assistant: William D. Petrouck

Deputy administrator: John H. Kelly

Sealer assistant director: William W. Haines

Assistant director: Daniel T. Grahmann, Gary S. Lewis

Executive assistant to the director: Amy B. O'Keefe

Assistant to the director: Alan J. Bogner, Gerald J. Kerpl, Cynthia M. Wallmann

Clinical services: Mary K. Hise

Director, Financial Management and Control Research: Mary K. Hise

Director, Information Services: Elizabeth A. Fox

Clinical service: Joanne S. Frohman

Director, Business Affairs: Robert A. O'Keene

Department: Proctor, James D. Ignazio, Family Practice

Director, Education: Charles D. Mize, Internist, Medical Education, Antonia R. D'Amico

Dentistry and Gerontology, Jennifer Hnilo, Associate Dean, Thomas A. Weisleder

Geriatrics/Infectious Diseases, Regional Cancer Center, Bariatric Surgery, Brian J. O'Connor


Dentistry, Robert W. Willmann

The University of Iowa Hospitals and Clinics is the largest university-owned teaching hospital in the nation. It provides the clinical base of graduate and undergraduate studies for approximately 2,500 students in 35 disciplines, including medicine, dentistry, nursing, pharmacy, hospital administration, physical therapy, vocational training, pastoral studies, and social work.

University Hospitals and Clinics sponsors residency programs in which more than 600 hospital and graduate students are involved in the 35 disciplines, including medicine, dentistry, nursing, pharmacy, hospital administration, physical therapy, vocational training, pastoral studies, and social work.

Highly specialized health services for cancer care, cardiac care, neonatal intensive care, and advanced technology for diagnosis and treatment are easily accessible to Iowans who reside in communities without such resources. The hospitals' transportation fleet of 15 vehicles travels more than 1 million miles per year, transporting approximately 100,000 persons, the Air Care Emergency Helicopter Service carries specially trained medical and nursing teams to aid those critically ill and injured and to transport them to the hospital for treatment. Many Iowans owe their lives to this service alone.

About 7,200 hospital staff members provide professional and support services needed
to care for approximately 2,200 patients each day. The hospitals' clinical staff includes 515 faculty physicians and dentists, and the house staff numbers 615 resident and fellow physicians and dentists. The hospitals’ Department of Nursing is staffed by more than 1,100 professional nurses.

Other hospital staff members annually provide more than 200,000 X-ray examinations and treatments, conduct nearly 5 million laboratory tests, fill more than 2.5 million prescription orders, provide more than 65,000 physical therapy treatments, and prepare more than 33,000,000 food and component transfusions.

Recent modernization provided new intensive care, cardiology, recovery, and urology units. The inpatient, Boyd Tower addition went into service in 1976, providing expanded and replacement facilities for a variety of inpatient and outpatient services. The Roy J. and Arleen Commons Pavilion, named in recognition of a gift from the late Mr. and Mrs. Commons, provides facilities for a multispecialty trauma and emergency treatment center; physical therapy department; orthopedic, urologic, and neurologic intensive units; clinics, and faculty offices; speciality and internal medicine inpatient units; cardiology and psychiatry clinics; and laboratories of the Department of Pathology.

The John W. Collaton Pavilion—named for the hospitals’ current director—opened in 1982. It consolidates services of the Department of Pediatrics in the Iowa Children’s Health Care Center and provides clinical and administrative facilities for the Department of Surgery. The Collaton Pavilion also houses a center for the care of medically or mentally disabled patients, and a cardiac surgery center.

In 1989, a Patient and Visitor Activities Center, including a library, medical museum, and lounge area, opened. In 1990, the new surgical intensive care unit, began services. A phase of the Collaton Pavilion closure and 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 separate hospital ward for a specialized diagnostic and treatment center, and a bedside service. The new building will also house the John and Mary Pappajohn Institute for ambulatory patient clinics and inpatient accommodations for some 275 cancer patients daily.

Clinical departments of the 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, pharmaceutical assistance, and cytotechnology. University Hospitals and Clinics offer formal and informal Clinical settings for Kentwood Community College programs and a nursing orientation program for nonprofessional nurse’s aides and medical assistant training.

The hospitals’ mission is to provide an environment for the highest quality patient care, education, and research.

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

- 00801 Radiologic Technology Program 3-1-4
- 00802 Orthopaedic Program 4-2-4
- 00803 Ultrasound Technology Program 3-1-4
- 00804 Musculoskeletal Medicine Program 3-1-4
- 00805 Ultrasound Technology Clinical Course 0-0-4
- 00806 Magnetic Resonance Imaging Technology 8-4-8
- 00807 Magnetic Resonance Imaging Clinical 4-0-4

Council on Speech Pathology and Audiology

The council coordinates clinical services and training in speech-language pathology and audiology offered by the University of Iowa Hospitals and Clinics (Division of Developmental Disabilities, Department of Pediatrics, Child Health Specialty Clinic, Department of Psychiatry—Child Psychiatry Service, Department of Otolaryngology—Head and Neck Surgery, Department of Neurology, the Veterans Affairs Medical Center in Iowa City, and the Department of Speech Pathology and Audiology). The council is responsible for planning, organizing, and conducting of all programs in the council's area of responsibility.

Dental Health Bureau

The Dental Health Bureau is sponsored jointly by the Iowa Department of Public Health, which provides funds, materials, and equipment, and the University, which provides space and equipment. The bureau's primary purpose is to promote a program of dental health education and disease prevention in the public and prenatal schools of the state. Sensi dental hygiene students working in the Bureau, under faculty guidance, carry out programs in the public schools programmed by the University.

The bureau also provides dental referral cards to schools to remind parents of the need for regular dental care for children.

Dental Service

The College of Dentistry Dental Clinics 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. Any student, 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 Clinics operate 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 in time is appreciated. The fees have been adjusted downward accordingly.

Health Occupations Education

Through this program, the University collaborates with the State Board of Education to provide counseling and advisory services, educate teachers, coordinate education programs for pre-professional students, and deliver practical training and theoretical instruction to students preparing for careers in health occupations. The Health Occupations Education curriculum includes instructional and practical components in most of the programs conducted for the most part by Iowa's area community colleges, but also by a growing number of high schools.

The Health Occupations Education curriculum is designed to prepare students for entry-level positions, to provide them with the necessary knowledge and skills needed to function successfully in the health care system, and to provide a strong foundation for the student to complete a baccalaureate degree in health science.

The Hardin Library for the Health Sciences

The Hardin Library for the Health Sciences serves the instructional, research, and clinical 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 library is the primary source of information on health care for the entire health sciences community, and contains more than 200,000 volumes and receives more than 3,000 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 computer literacy instruction to a virtual cataloguing system that helps students locate 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 expertise in environmental monitoring, surveillance, analytics, training, and consulting services to public and private clients. Specialized areas include immunology, parasitology, industrial hygiene, microbiology, virology, pathology, health physics, mycology, and radiation chemistry. It maintains a collaborative laboratory program with the State Department of Health, Bureau of Laboratories, and the State Geologic Survey.

In the environmental area, the laboratory provides a wide variety of services related to water, wastewater, hazardous waste, air quality monitoring and analyses; pesticide and herbicide analyses; mineral and metal analyses. The Hygienic Laboratory serves as Iowa's primary laboratory for drinking water analysis and is one of only 5 laboratories in the nation certified to perform analyses for hazardous waste sites under the USEPA Superfund Program. It is an accredited industrial hygiene laboratory and holds an extensive license for the diagnostic services involved in blood lead screening and screening for infantile lead exposure in the newborn and for the X-linked virus.

Within the University of Iowa, the Hygienic Laboratory provides instruction and training in diagnostic microbiology and virology as part of regular academic courses, as well as in environmental engineering studies. In addition, the Hygienic Laboratory provides classes and individual research for undergraduate and graduate students and maintains an active research and medical personnel interested in training specific laboratory procedures. Laboratory staff members are available to University faculty, health care, 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, Cystic Fibrosis Prevention Program, Cystic Fibrosis, Childhood Cancer Diagnostic and Treatment Program, and the Statewide Perinatal Care Program. These programs are designed to improve health care for children with specific medical conditions.

At Regional Child Health Specialty Clinics (RCH) located throughout the state, Iowa residents are provided with diagnosis and evaluation services to pediatric specialists such as cardiology, ophthalmology, speech pathology, audiology, physical therapy, nutrition, and clinical and educational psychology. CHSC also supplements a University of Iowa graduate training program in audiology and speech pathology and provides mentoring and follow-up services on special health problems related to handicaps such as congenital dislocation, 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 focus 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 provides 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 and other relevant medical care providers. The outpatient services include a number of specialty clinics (Child Developmental Neurology Clinic; Metabolic Disorders Management Clinic; Infant and Young Child Clinic; Child and Young Adult Clinic) in which specially 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 intensive specific children that can best be accommodated on an inpatient basis. The staff coordinates educational services with the child's school in order to maintain continuity of services, while the children are in this unit. Training activities include pre- and in-service lectures, workshops, practica, and seminars for a variety of care providers working in other inpatient and community programs. These activities are placed 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 these programs.

Laboratories of the divisions 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 such service; a summer residential 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 students may receive services without charge. Products (e.g., hearing aid supplies and accessories), devices (e.g., hearing aids), and hearing aid repair services are provided to University of Iowa students at cost plus handling expenses. Services include diagnostic examinations, consultations, individual and small-group sessions, hearing aid service, and referrals to other clinics as needed.

Veterans Affairs Medical Center

Medical students and residents receive much of their clinical training in the 327-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, medicine, and pediatrics used for the study of metastatic and gastrointestinal diseases. The University of Iowa-VA Medical Center, which is closely affiliated with all four University Health Science Center schools, provides unique training opportunities 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 resource not only for the University community, but for the people of the state and region. The center, which celebrated its 50th anniversary in 1985-86, 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 College of Liberal Arts, together with performance and exhibit space in The Theatre Building, Music Building, School of Art and Art History, the Museum of Art, and Hancher 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 necessary funds to operate the state of Iowa and the federal government, private contributions from Iowa's growing numbers 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 1936. Major additions were made in 1968-69, 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 visiting and students artists, is named for artist Elie Nadelson, who in 1964 became the first recipient of the Master of Arts degree in studio art at The University of Iowa. The school's Corcoran Gallery multimedia studio and video arts studio are located in the International Center. New and experimental works are presented through exhibitions, lectures, live concerts, and performances that emphasize new concepts and directions in contemporary art. Including artists and critics bring a wide range of ideas to students and visitors.

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 (UIA) recognizes its responsibility to serve a varied statewide audience. Although its primary constituency is the University community, the museum's educational and exhibition collection attract a national and international audience as well as visitors and young people from across the state. The UIA's collection of more than 8,500 objects has three nationwide strengths: the nineteenth- and twentieth-century European and American paintings and sculpture, works on paper, and African art. Paintings and sculptures number some 500, including Pollock's "Mural," Beckman's "Zorn's Girl," and Matisse's 1939 "Group of Dancers," Falling from the Wings of a Bird," works by Picasso, Nerceda, Lauchgold, Moore, Noguchi, Rickey, and Rodin. The museum's 4,000 prints include Impressionism by Whistler, Cassatt, Rembrandt, and Van Gogh; its collection of drawings represents artists from Bonheur to Balthus.

The Stanley Collection, which features more than 500 examples of art from Asia, central, and east Africa, represents the entire sub-Saharan continent. A gift of the late Elizabeth and Stanley Moeller 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 nineteenth- and twentieth-century photographs; 298 Oceanic, 900 African, and 300 Native American objects; and a small but significant collection of Chinese 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 technical 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-lectures by visiting artists, scholars, and collectors; "Music in the Museum," a Sunday afternoon concert series; and "Perspectives," a weekly program of lectures, demonstrations, discussions, and debates. Museum docents lead groups on guided tours of the museum's exhibitions, and catalogues of many exhibitions are available for purchase. Presently the museum has a private support group, sponsors receptions, openings of exhibitions, and active print, drawing, and etching 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 established "the University's extensive collection of nineteenth- and twentieth-century paintings, prints, antique furniture, and art glass in the condition that a museum could be built to house it, along with the University's existing and future acquisitions of art."

In response to this challenge, more than 2,000 individuals and business firms contributed funds for the museum's construction cost. 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 Cameron of Masonine made possible the construction of a major addition opened in 1975.

Other important gifts include prints by Edward and Gloria Gelman of Iowa City, ceramics by Joan Manheimer of Des Moines, and pre-Columbian art by Eugene and Inn Scholl of Massachusetts.
University Theatres

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

University Theatres welcomes all persons who wish to participate in theatrical production. Information about the productions is available from 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 a multipurpose facility for education, laboratory, shop, and production work. The E.C. Bridger Theatre, a contemporary-style, 477-seat proscenium playhouse, is one of the finest small theatres of its type in the United States. Theatre A is a "black box" production space with flexible seating units that accommodate from 140 to 235, permitting quick modification of sound-audience relationships. 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 electronic lighting and sound reproduction systems. Several shops for building, painting, manufacturing, and scenic design, costumes, and properties as well as the specialized classrooms for acting and design complete the Theatre Building facilities.

The Playwrights Workshop, ranked among the nation's outstanding playwrighting programs, is a part of the Department of Theatre Arts. The department presents an annual festival of new works from the workshop. In addition, the department maintains close ties with the Iowa Writers' Workshop.

School of Music

Opened in 1974-75, the School of Music is spacious and convenient. It is designed to accommodate a full range of musical activities to three recital halls and to the stage of Hancher Auditorium.

In a given year, faculty artists and student ensembles present about 150 major concerts, recitals, and educational and instrumental recitals are presented by students.

Clayborn Hall, with its hard-covered Casals technicians, saucy 720 for flute concerts. The two Harless Halls is both a classroom and the setting for many recitals. The school's largest ensemble, symphony orchestra, bands, Opera, Theatres, and others) perform regularly in Hancher Auditorium. The Opera Studio, opened in 1980, is the scene for smaller productions of the Opera Theater.

The school has produced opera since 1928. Like other major stage productions, 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 vanguard of innovation in the arts, creating and performing works in new forms, its Center for New Music, originally housed in the Rockefeller Foundation, is a laboratory and performance of the contemporary composer and student members of the Center for New Music have won numerous prizes for their performances of both new compositions and new approaches to the theatrical concert.

Two experimental music studies provide a wide range of technical capability for creative and artistic endeavors, including computer-operated music. Works created in the studio are performed with other student compositions in an annual series of performances by the Composer's Workshop, a program of the School of Music. Outstanding studentrecording facilities link the various performance spaces of the School of Music/Hancher Auditorium complex with a recording studio in the School of Music.

Hancher Auditorium

Hancher Auditorium is a regional cultural resource of the first magnitude. The 2,678-seat facility opened in 1974 and in its first 17 season has hosted audiences of more than 2,5 million people. The auditorium is fully accessible to the handicapped and provides wheelchair 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 the New Orleans, Dallas, and Harless Halls have performed at Hancher as have stars of the world's great ensembles, including Ying-Yu Quartet, Laura Anderson, and Philip Glass. Nationalizing companies regularly present the Broadway hits, in 1980 more performances of Les Misérables broke as Hancher box office records.

Hancher has featured international performers, including the world-renowned Japanese drummer Tatsuro Ohta of the Ohta Company of Bengal, and the North African player Ibrahima and Yake Tapa. The Rock. From jamming to chamber to symphonic music, from Shakespeare to the Upstart and the Pacific Opera and the Peking Acrobat, Hancher presents the full range of the world's performing arts.

Hancher also has been an active catalyst for academic creativity. In 1987, the auditorium co-produced the Arthur Butler's new production of The Marriage, which had its world premiere at the Hancher stage. The auditorium also has commissioned important new works for The David Paris Dance Company, The Paul Drees Ensembles, VoraQuartet, and the

Laura Dean Dancers. It has been the primary sponsor of the Iowa Dance Workshop Program, which brought important dance companies for extended residencies including workshops, master classes, and performances in communities throughout the region.

The auditorium has become a Midwest music showcase. Hardly a concerto, a café and gift shop, excellent acoustics, and a surprising intimacy is its interior design. It makes it one of the foremost concert halls in America. But it is much more than a showcase. It is a special cultural jewel and has been designated 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 theatre arts, the auditorium has spacious space for construction and costume shops, nearly 50 sets for rigging for scenery changes, and a complete recording 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. Mobile units of a concert shell can be installed quickly on stage for stage concerts and performances. University students are entitled to purchase tickets at reduced prices. Nonresident patrons regularly attend auditions and receive from a wide variety of arts and western music.

Arts Education/Outreach Program

Cultural projects and programs that utilize the talents of faculty in student activities 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 resources with as many people as possible throughout the state, the program is designed to meet the essential needs and desires of 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 specialist communities.

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, seminars, workshops, performances, and other educational projects.

Dance Performance

The Dance department, housed in Haskell Hall, enjoys some of the finest facilities in the nation. It includes two classrooms, a studio, computer-sound-audio, video-computer-room, a library, and a 250-seat theatre in North Hall. Teaching and
responsibilities are shared by seven full-time faculty and four to five full-time administrative assistants. Nearly seventy of the technique classes are accompanied by a staff of two full-time and four part-time instructors 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 yearly Dance Gala held in Hancher Auditorium, locally, student and thesis concerts in the Dance Department’s SpacePlace, theater, the School of Music spring opera, summer musical theater in cooperation with the Department of Theater 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 (ACDFA), attending festivals and hosted them in 1981 and 1986. The department also hosts the Iowa All-State Dance and Drama Ensemble and the Iowa All-State Orchestra. Hancher has hosted the Iowa State Orchestra and the Iowa State Band, and for short periods has been host to the Swiss Swastik Chorographic Competition for emigrating Midwest chorographers.

Broadcasting and Film

A division of the Department of Communication, Broadcasting and Film fosters creative work in the visual arts. Its leadership with the Department of Film and Television Studies in other units of the Iowa Center for the Arts and the University of Iowa. For example, a music video based on the School of Music production of Sondheim’s ‘Merrily We Roll Along’ has been shown on the Iowa Public Telecommunications. Other videos have been produced with jazz artists.

Writing Programs

A long-term program of special distinction is the Department of English. The Writers’ Workshop provides opportunities for talented writers to work and learn in workshops with established poets and novelists. The International Writing Program brings accomplished writers from many countries to the University for extended periods of time and translates their works into English and other languages.

These writing programs are renowned in many countries and have won widespread private support from foundations, corporations, organizations, and the U.S. State Department.

Windhover Press

The arts of book design and history are represented in several exhibits and include familiar groups such as insects, beetles, flowers, and pandas. Also displayed is the first printing of the rare Atlantic right whale.

The approach to the library is represented in several exhibits and include familiar groups such as insects, beetles, flowers, and pandas. Also displayed is the first printing of the rare Atlantic right whale.

The Museum of Natural History

The museum, located in MacCrady Hall, is an outgrowth of the Cabinet of Natural History, established in 1839 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 sciences, the Department of Natural History, the Museum of Natural History provides a repository and the proper care for objects and specimens that come to the museum either by gift or through the efforts of its own collections. These collections, with primary focus on Iowa and the Midwest region, are the result of the disciplines of biology, geology, and anthropology and are used for research and teaching by University faculty and students as well as for public exhibitions and interpretation.

The Museum of Natural History, a department in the College of Liberal Arts, also supports a museum study program that provides instruction in the history, philosophy, operation, 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 culture, and ecology. Exhibit highlights of Iowa Hall include the Dinosaur-ensembled dinosaurs, Dinosaur Hall, the Mississippi Hall, and a life-size replica of an Ice Age giant ground sloth.

In First Hall, the Lavanized cylinder is a large and well-worn bird habitat exhibit comprising a complete representation of a bird island of the Hawaiian group. Other habitat exhibits include the Bering Sea, Louisiana Swamp, fly migration, and cranes on the South Dakota plains. The crane exhibit includes both the heron crane and the new whooping crane as they appear on the island during migration. Material Hall exhibits feature wildlife, insects, reptiles, insects, birds, and giant pandas. Also displayed are the bookbinding section of the rare Atlantic right whale.

The approach to the library is represented in several exhibits and include familiar groups such as insects, beetles, flowers, and pandas. Also displayed is the first printing of the rare Atlantic right whale.

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

OLD CAPITAL

Iowa’s Old Capitol, a National Historic Landmark, is central to the University of Iowa campus. It was the capital of the Territorial Congress of Iowa from 1843 until 1867 and the capital of the state of Iowa from 1846 until 1877, when the government moved to Des Moines. Old Capitol was the University’s 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 1930, when the president’s office was reinstalled in the north end of Old Capitol as a historic site.

The recreation returned the structure to 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 special presentations are offered during the academic year. Reservations are required for group tours.

OTHER SERVICES

Evaluation and Examination Service

The Evaluation and Examination Service offers a wide range of examinations to meet the needs of students in the Iowa Center for the Arts. The Exam 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 1956 to help the University obtain the greatest possible educational benefit from private giving. The foundation is the main channel for private gifts to The University of Iowa for high annual giving programs, and advisory council gifts such as bequests and gifts. The foundation also works with the University Office of Affirmative Action, the University Office of Alumni and Friends, and the University Alumni Association to provide opportunities for those who wish to support the University's educational programs.

The University of Iowa Alumni Association

Once an organization in 1907, The University of Iowa Alumni Association has worked to encourage graduates, former students, and friends to continue their involvement with the University. In addition to offering travel programs such as class reunions and family vacations, the association sponsors alumni events. The association also sponsors a variety of events throughout the year, including annual alumni gatherings and events such as the annual alumni trip and the annual alumni gathering.

University of Iowa Press

The University of Iowa Press was established in 1951 to publish significant works of original scholarship and research. The press is an independent, nonprofit organization that is supported by the University of Iowa through an endowment. The press publishes books in a variety of fields, including literature, art, and music.

Office of University Relations

The Office of University Relations (OUR) works to promote understanding of, participation in, and support for the University's mission and activities. The office works with the University's community and among the general public: It seeks to maintain an effective communication program including the use of internal and external media. The office also provides information about the University's administration and its related activities and serves as a liaison to facilitate communication between the central administration and other offices, such as the University News Service and the University of Iowa Alumni Association.

University Ombudsman

The Office of the University Ombudsman responds to problems and complaints brought forward by students, faculty, and staff. The office also investigates complaints of unethical practices and provides advice, assistance, and mediation. The office is staffed by certified mediators, who are trained in conflict resolution and mediation.
<table>
<thead>
<tr>
<th>Department</th>
<th>Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace Military Studies</td>
<td>60</td>
</tr>
<tr>
<td>African-American World Studies</td>
<td>61</td>
</tr>
<tr>
<td>African Studies</td>
<td>63</td>
</tr>
<tr>
<td>Aging Studies</td>
<td>66</td>
</tr>
<tr>
<td>American Studies</td>
<td>67</td>
</tr>
<tr>
<td>Anthropology</td>
<td>69</td>
</tr>
<tr>
<td>Art and Art History</td>
<td>73</td>
</tr>
<tr>
<td>Asian Languages and Literature</td>
<td>80</td>
</tr>
<tr>
<td>Biochemistry</td>
<td>84</td>
</tr>
<tr>
<td>Biology</td>
<td>85</td>
</tr>
<tr>
<td>Botany</td>
<td>89</td>
</tr>
<tr>
<td>Chemistry</td>
<td>93</td>
</tr>
<tr>
<td>Classics</td>
<td>95</td>
</tr>
<tr>
<td>Communication Studies</td>
<td>98</td>
</tr>
<tr>
<td>Comparative Literature</td>
<td>104</td>
</tr>
<tr>
<td>Dance</td>
<td>106</td>
</tr>
<tr>
<td>Economics</td>
<td>108</td>
</tr>
<tr>
<td>English</td>
<td>111</td>
</tr>
<tr>
<td>French and Italian</td>
<td>117</td>
</tr>
<tr>
<td>General Studies</td>
<td>120</td>
</tr>
<tr>
<td>Genetics</td>
<td>122</td>
</tr>
<tr>
<td>Geography</td>
<td>123</td>
</tr>
<tr>
<td>Geology</td>
<td>128</td>
</tr>
<tr>
<td>German</td>
<td>135</td>
</tr>
<tr>
<td>Global Studies</td>
<td>138</td>
</tr>
<tr>
<td>History</td>
<td>139</td>
</tr>
<tr>
<td>Home Economics</td>
<td>145</td>
</tr>
<tr>
<td>Interdepartmental Studies</td>
<td>146</td>
</tr>
<tr>
<td>Iowa Lakeside Laboratory</td>
<td>148</td>
</tr>
<tr>
<td>Journalism and Mass</td>
<td>149</td>
</tr>
<tr>
<td>Communication</td>
<td>149</td>
</tr>
<tr>
<td>Latin American Studies</td>
<td>154</td>
</tr>
<tr>
<td>Letters</td>
<td>155</td>
</tr>
<tr>
<td>Liberal Studies</td>
<td>155</td>
</tr>
<tr>
<td>Library and Information Science</td>
<td>156</td>
</tr>
<tr>
<td>Linguistics</td>
<td>160</td>
</tr>
<tr>
<td>Literature, Science, and the Arts</td>
<td>163</td>
</tr>
<tr>
<td>Division of Mathematical Sciences</td>
<td>164</td>
</tr>
<tr>
<td>Sciences</td>
<td>164</td>
</tr>
<tr>
<td>Applied Mathematical Sciences</td>
<td>164</td>
</tr>
<tr>
<td>Computer Science</td>
<td>165</td>
</tr>
<tr>
<td>Mathematics</td>
<td>169</td>
</tr>
<tr>
<td>Statistics and Actuarial Science</td>
<td>174</td>
</tr>
<tr>
<td>Microbiology</td>
<td>178</td>
</tr>
<tr>
<td>Military Science (Army ROTC)</td>
<td>179</td>
</tr>
<tr>
<td>Museum Training</td>
<td>180</td>
</tr>
<tr>
<td>Music</td>
<td>181</td>
</tr>
<tr>
<td>Neuroscience</td>
<td>188</td>
</tr>
<tr>
<td>Philosophies and Ethics of Politics, Law, and Economics</td>
<td>168</td>
</tr>
<tr>
<td>Philosophy</td>
<td>180</td>
</tr>
<tr>
<td>Division of Physical Education</td>
<td>192</td>
</tr>
<tr>
<td>Physical Education Skills</td>
<td>192</td>
</tr>
<tr>
<td>Exercise Science</td>
<td>192</td>
</tr>
<tr>
<td>Leisure Studies</td>
<td>197</td>
</tr>
<tr>
<td>Physical Education, Teacher Preparation Programs</td>
<td>199</td>
</tr>
<tr>
<td>Physical Education and Sports Studies</td>
<td>200</td>
</tr>
<tr>
<td>Physics and Astronomy</td>
<td>203</td>
</tr>
<tr>
<td>Political Science</td>
<td>208</td>
</tr>
<tr>
<td>Psychology</td>
<td>212</td>
</tr>
<tr>
<td>Religion</td>
<td>218</td>
</tr>
<tr>
<td>Rhetoric</td>
<td>221</td>
</tr>
<tr>
<td>Russian</td>
<td>221</td>
</tr>
<tr>
<td>Science Education</td>
<td>223</td>
</tr>
<tr>
<td>Social Studies Education</td>
<td>227</td>
</tr>
<tr>
<td>Social Work</td>
<td>227</td>
</tr>
<tr>
<td>Sociology</td>
<td>232</td>
</tr>
<tr>
<td>Soviet and East European Studies</td>
<td>236</td>
</tr>
<tr>
<td>Spanish and Portuguese</td>
<td>238</td>
</tr>
<tr>
<td>Speech Pathology and Audiology</td>
<td>244</td>
</tr>
<tr>
<td>Theatre Arts</td>
<td>250</td>
</tr>
<tr>
<td>Transportation Studies</td>
<td>253</td>
</tr>
<tr>
<td>United Program</td>
<td>255</td>
</tr>
<tr>
<td>Urban and Regional Planning</td>
<td>256</td>
</tr>
<tr>
<td>Women's Studies</td>
<td>259</td>
</tr>
</tbody>
</table>

Dean: Gerhard Liesenburg
Associate Dean for academic programs: James R. Laidman
Associate Dean for development and research: Paul S. Nally
Associate Dean for faculty: Judith P. Akin
Director of honors: Brian P. Lewis
The educational programs offered in the College of Liberal Arts provide the necessary foundation for the specialized education or training in professional occupations and professions. They form the basis for graduate work and provide prerequisites for professional study in dentistry, medicine, nursing, pharmacy, business, law, and education. They also provide a general education, which by itself prepares for a broad range of occupations.

Liberal education is general in the breadth of intellectual development that it affords, but it is not superficial. The College of Liberal Arts offers full degree programs, each requiring extension study in a particular academic field or a set of related disciplines. The array of educational programs available in the college gives students a wide choice of major and minor fields of study.

Regardless of the major a student selects, the curriculum of the college requires all students to work in mathematics, logic or quantitative reasoning, and a foreign language and requires a course in reading, writing, and public speaking. Further, all students must become acquainted with the study of history, the natural sciences, the social sciences, and the humanities, as well as with civilizations and cultures remote in time or space.

These General Education Requirements are designed to enable students to understand the physical world in which they live, the social organizations in which they act, and the values of the civilizations they have influenced. The college's curricular programs and the creative work of artists and writers in this century greatly expanded our knowledge of natural and social phenomena and have transformed our aesthetic sensibilities. The complexity of the modern world is matched by our increased ability to understand it. That understanding, however, depends more on skill than on acquiring a general education.

It is the mission of the College of Liberal Arts to teach that general education available and to guide students through the many steps involved in obtaining it. A liberal education compensates for the narrowing effects of the period of specialization. It develops the capacity to raise significant questions, to find answers, to reject dogma, to be free of superstition, and to adapt to change.

College Organization

The internal organization of the College of Liberal Arts reflects its multilingual character. The college is divided into a number of units of various ranks: divisions, schools, departments, programs, and special or honors units. There are three divisions in the college. The Division of Fine Arts includes the School of Art and Art History, the School of Music, and the Departments of Communication Studies, Dance, and Theatre Arts. The Departments of Computer Science, Mathematics, and Statistics and Actuarial Science comprise the Division of Mathematical Sciences. The Division of Physical Education includes the Departments of Exercise Science, Leisure Studies, and Physical Education and Sports Studies. Within the college there are six schools. In addition to the Schools of Art and Art History and Music, there are Schools of Journalism and Mass Communication, Library and Information Science, Religion, and Social Work. More than forty formally organized departments and programs provide instruction in the college and offer majors leading to one or more degrees, minors, or certification in a particular field.

The College of Liberal Arts is closely linked with the University's professional colleges. Some departments in other colleges offer degree and/or minors in liberal arts, similarly, other colleges may award minors for work done in liberal arts, for example, students admitted to the honors education program in the College of Education are degree candidates in the College of Liberal Arts. The College of Liberal Arts also provides instruction for undergraduates enrolled in the Colleges of Business Administration, Engineering, Medicine, Nursing, and Pharmacy.

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

Liberal Arts Office of Academic Programs

The Liberal Arts Office of Academic Programs is an integral part of the University of the Dean, located in J. J. Schaeffer Hall. It serves students who intend to declare a liberal arts major, undertake core requirements, or wish to change majors. It offers the second-semester-only option, or special permission for a dean's signature for administrative actions such as late registration, late dropping, or dropping of courses, and late withdrawal of registration.

Staff members answer questions about the General Education Requirements, graduation requirements, and college policies affecting students. They coordinate the advising of students in academic probation and take dismissal actions; and respond to requests for reinstatement of academic status.

The Office of Academic Programs also considers evidence and recommends appropriate disciplinary action for students plagiarists, cheating, forgery, and other academic misconduct. Students wishing exceptions to the rules and requirements of the college petition the Student Appeals Committee through the Office of Academic Programs.

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, each department offers 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 bachelor's degree "with honors" in the major (see "Graduation with Honors" in this section of the Catalog).

The Sharswood House Honors Center is a housing place and study center for students in the honors program. It houses a reference library, study lounges, and computer terminals. Each year the Associated Students Honor Students plan a variety of activities—recreational, social, cultural, and academic, training students with strong academic records are invited to join the honors program, but any student whose grade-point average meets the required minimum (3.00) may join at any time. For further information, contact the College of Liberal Arts Honors Program, Sharswood 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 confers degrees as indicated in the following: B.A. and B.S.L. degrees are awarded with no major designations.

Academic science—B.S.

African-American world studies—B.A.

American studies—B.A.

Aristocratic civilization—B.A.

Anthropology—B.A.

Art—B.A., B.F.A.

Asian-American studies—B.A.

Asian studies—B.A.

Astronomy—B.A., B.S.

Biochemistry—B.A., B.S.

Biological science—B.A., B.S.

Business—B.A., B.S.

Chemistry—B.A., B.S.

Classics—B.A.

Communication studies—B.A.

Comparative literature—B.A.
Computer science—B.A., B.S.*
Dance—B.A., B.F.A.
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.
Spaniard—B.A.
Spanish and hearing science—B.A., B.S.
Statistics—B.S.
Theatre—B.A., B.S.

*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 grade in specified prerequisite courses, the cumulative grade-point average, and other criteria.

**Majors in Education and Secondary Certification**

Students may major in a major in one of the fields of education or an interested in secondary education at the time of admission, or they may change their majors to one of those fields at any time after enrollment. In order to be allowed to enroll in the courses as an education major or certification, the student must be admitted to the teacher education program (TISP).

To be admitted to the TISP, a student must have attained satisfactory standing (90 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 TISP upon admission to the University. In order to remain in the TISP, a student must maintain a 2.50 cumulative grade-point average and a 2.00 grade-point average at the University of Iowa.

Application forms for admission to the TISP are available from the Office of Student 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., a B.A. in History and English or a 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, and Spanish are available to students seeking a B.A. in Asian languages and literature. The School of Art and Art History and the School of Music have many different tracks leading to bachelor's degrees. Studio emphasis, art history emphasis, and art education emphasis, 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 collaboration 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 or specializations within and between programs, see the program descriptions in the Catalog and admire 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 Bachelor of Liberal Arts, 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 "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—major, minors, or certificates. These programs include African studies (certificate), African-American world studies (B.A. or minor), aging studies (minor or certificate), American studies (B.A. or minor), ancient civilizations (B.A. or minor), comparative literature (B.A. or minor), global studies (minor, certificate, or honors interdisciplinary major), interdepartmental studies (B.A.), 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.S.), and 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 the 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 departments, as approved by the honors advisors 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 8 semester hours of departmental honors registration and completion of an honors project. It leads to the degree "with interdisciplinary honors."

Students must submit a plan of study for approval during their junior year. Examples of 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 accept early admission to The University of Iowa College of Medicine or College of Dentistry in any 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 after early admission to the College of Medicine or Dentistry, students must meet certain requirements. Before enrolling in the medical or dental colleges, students must have:

Satisfied the General Education Requirements;
Completed the requirements for a major, Earned at least 14 semester hours as undergraduates; and
Satisfied the residency requirement of the College of Liberal Arts.

Students who have successfully completed the first year of medical or dental school and have enrolled up to 30 semester hours of undergraduate elective credit toward a baccalaureate degree from the College of Liberal Arts:

Students who plan to accept early admission to the Colleges of Medicine or Dentistry and who wish to receive a baccalaureate degree from the College of Liberal Arts must request a graduation analysis from the Office of the Registrar before their final semester in the Colleges of Liberal Arts.

Combined Degree Program: Engineering and Liberal Arts

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

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

To enter the combined degree program, students must be eligible for admission to the College of Engineering. Interested students should schedule an appointment with the advisor 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 may be admitted to both the College of Engineering and the College of Liberal Arts.

Students who enter the program are required to complete the General Education Requirements and 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 academic career to expedite the completion of their program. The specific engineering courses taken by students vary according to the engineering major selected. Successful candidates in natural sciences, mathematics, humanities, and social sciences are accepted regularly for credit by both 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, students must complete an total of 154 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 for admission to College of Medicine. Successful candidates are awarded a medical technology, nuclear medicine technology, or physician assistant.

Students who wish to 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 areas of study selected in each college. Students who enter the combined degree program are assigned two faculty advisors, one in the major department in the College of Medicine and the other in the major department in the College of Liberal Arts.

Candidates must satisfy all requirements for both degrees and complete an total of at least 136 semester hours of credit, including at least 30 semester hours of courses offered by the College of Medicine and at least 30 semester hours of courses offered by the College of Liberal Arts.

Students interested in the combined degree program should see the Dean of the baccalaureate programs of 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 124 required for a single degree, for a total of 144 semester hours, besides satisfying the requirements for both degrees. The B.G.S. and B.L.S. may not be awarded concurrently 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. Those who have been graduated from the college must complete at least 30 additional consecutive 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, those 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 the 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 bachelor's 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 128 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 satisfy the qualification requirement for graduation by earning a minimum grade-point average of C (2.00) in all college work attempted, all work undertaken 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 satisfy the qualification requirements for graduation by earning a 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 supplied toward the degree, if 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 30 consecutive semester hours in residence, or by earning 30 semester hours in residence in the last 60 semester hours in residence, or by earning 30 semester hours in residence at any time.

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 taken at The University of Iowa, Guided Correspondence Study courses.

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 30 semester hours of courses offered by the College of Liberal Arts.

General Education Requirements

Students in the combined degree program in the Colleges of Music and Liberal Arts must complete at least 30 semester hours of courses offered by the College of Liberal Arts.

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 series of integrative general education courses include a prescribed course of study that fulfills most General Education requirements. See "Unified Program, below.

Rhetoric

One or up to three courses (4 s.h.); MATHEMATICS for students who first enroll at the University before fall 1999; or "Mathematics," below.

Physical Education

Four courses (4 s.h.); B.S.I.S. students are exempt from this requirement.

Foreign Language

Fourth-year level in college language or fourth-year level of high school language (0-4 s.h.).

Foreign Civilization and Culture

One approved course (3-4 s.h.).

Historical Perspectives

Two approved courses (3 s.h.).

Humanities

Two courses (6 s.h.) in the interpretation of Literature and two approved courses (9 s.h.).

Natural Sciences

Two approved courses, one of which must have a laboratory component (7 s.h.).

Quantitative or Formal Reasoning: one approved course (3-4 s.h.); Social Sciences: two approved courses (6 s.h.).

The Unified Program

The Unified Program (UP) is a four-semester integrative general education curriculum for a small group of students who choose the program when they are 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. 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 register for the course until the requirement is completed. Students are not permitted to skip any 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:

1. By passing 101 and 102 Rhetoric (8 s.h.);
2. By passing 105 Rhetoric (4 s.h.);
3. By passing the speech test and 106 Rhetoric (3 s.h.);
4. By passing both the expository and essay tests.

Proficiency Examinations

Placement and exemption tests are given during the first week of classes for students registered in rhetoric courses. Exemption from the entire or a part 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 evaluation by the Office of Services for Persons with Disabilities and who are found to be learning disabled may be exempt from the writing requirement. These 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 first time before August 1959 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, 110 Schottler Hall.

Physical Education

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

1. By completing four 1-semester-hour courses in physical education skills (1044 or 1042), for a total of 4 semester hours;
2. By completing 1045 (5 s.h.) and two 1-semester-hour courses in physical...
education skills, for a total of 4 semester hours.

Students also may earn a maximum of 12 semester hours in physical education activities (504 below).

Only courses 1041, 1042, and 1045 may be used to satisfy the requirement. Each course is graded satisfactory/unsatisfactory. 1041 and 1042 are skills courses, and sections under these numbers from activity or sports titles and levels of proficiency. 1041 designates courses that meet for the first half of the semester or for the fall and spring semesters; 1042 designates those that meet for the second half of the semester. 1045 Fitness and Wellness for Life (2 cr.), a lecture-discussion course, meets for the entire semester. Students who take it must maintain the standard of the requirement by taking one semester-long skills course or exemption test.

If a student repeats the same skills course or takes a similar elementary exercise course at the Office of the Registrar imposes a penalty for extra duplication or repetition. In removing incompletion or repeating the course, 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 one semester hour of the physical education requirement. Academic credit is not awarded, only physical education credit. The test, "Physical Education Skills", is the same test used.

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 (physical education activities).

By achieving a score of (600) on the Iowa State (4th month) or the University of Iowa on the SAT or ACT.

By earning an eligibility to physical education or math course work to a score of 4 semester hours combined with physical education credit transferred from other colleges.

Older Students

Students who have passed their twentieth birthday before their first enrollment at the University will pass the twenty-eighth birthday before the day of their graduation are measured from the physical education requirement.

Veterans

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

B.S. Students

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

Foreign Language

The foreign language requirement may be satisfied by high school courses, college courses, completion of a high school and college course, 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-year level of a foreign language at The University of Iowa, in another college or university, or during study abroad.

By completing sequential years of a language in high school followed by sequential semester work in the same language; one year of high school study in a fourth-year level in the foreign language is considered the equivalent of one semester of college work; students must successfully complete the fourth-year level of foreign language to satisfy the requirement.

By gaining an achievement test determining proficiency equivalent to that usually obtained after a four-semester course of college study.

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

Students who entered the University of Iowa for the first time after fall semester 1990 and who will graduate by August 1992 are exempt from the foreign language requirement.

Foreign Language Placement

Entering freshmen are required to take a University of Iowa foreign language language in high school; exempt from this requirement unless they wish to participate in the Foreign Language Placement Program (see below).

Results from the placement test are used to determine the level at which students begin their language studies at the University of Iowa. In determining placement, academic advisors may consider number of years studied in high school, grades earned, experience already had with native speakers and length of time elapsed since the language was last studied, if such experience would result in a higher placement.

Effective Fall Semester 1991

Entering freshmen who place at the second-year level or higher may continue study in that language for full credit or begin study of a different language for full credit.

Those who place below the second-year level are required to complete the first semester of language study for a letter grade but without credit toward graduation.

Effective Fall Semester 1993

Entering students who place at the third-year level or higher may continue study in that language for full credit or begin study of a different language for full credit.

Those who place below the third-year level are required to complete the first year of language study for a letter grade but without credit toward graduation.

Foreign Language Incentive Program

Eligible students who place into a fourth-year language course and complete the course with a grade of B or higher receive a merit credit for the prerequisite third-year course. Those who place into a fifth-semester or higher level course and receive a grade of B or higher receive credit for the two prerequisite third- and fourth-year language courses. This credit is upgraded but counts toward the hours required for graduation. Incentive credit is not counted toward the total college credit that a student has received.

Students must be in good standing when they register or during the first three weeks of the semester in which they are taking the course in the Office of Academic Programs, 116 Schaeffer Hall. Students who take the course during the first two weeks of the semester will receive the course credit when they register.

Proficiency Examination in Foreign Languages

Students proficient in a language for which they have received formal instruction may validate their proficiency by examination. Students proficient in French, German, or Spanish should take one of the placement examinations administered by the foreign language department during the seminar orientation programs and each semester prior to the opening of classes. Proficiency examinations in other languages may be arranged by contacting the appropriate department. Academic credit is awarded for successful completion of these examinations.

Satisfactory test results on Advanced Placement Program tests in French, Latin, or Spanish satisfy the foreign language requirement. In some cases, academic credit is awarded. Complete
11:21 Human Biology (offered only through Guided Co-requisite Study) 3 s.h.
12:12 Human Geography (Lab) 3 s.h.
12:22 Ecology and Evolution 3 s.h.
12:1 Lectures in Earth History and Resources 2 s.h.
12:41 Exploration and the History of Life (lab) 4 s.h.
12:42 Evolution of the Earth (lab) 4 s.h.
12:44 Lectures in Evolution and the History of Life 4 s.h.
12:45 Earth History and Resources (lab) 4 s.h.
12:46 Introduction to Environmental Geology (lab) 3 s.h.
23:01 Chemistry and Physics of the Earth 3 s.h.
28:9 Basic Physics 3 s.h.
28:9 Basic Physics (lab) 4 s.h.
29:11 College Physics (lab) 4 s.h.
29:12 College Physics 4 s.h.
29:17 Introduction Physics I (lab) 4 s.h.
29:18 Introduction Physics II (lab) 4 s.h.
29:22 Modern Astronomy 4 s.h.
29:23 Introduction Astronomy Laboratory Lab 1 s.h.
29:24 General Astronomy Lab 1 s.h.
29:25 General Astronomy 4 s.h.
29:31 Introductory Animal Biology (lab) 4 s.h.
29:32 Principles of Animal Biology (lab) 5 s.h.
29:35 Biology of the Cells 3 s.h.
27:37 Human Genetics 4 s.h.
41:31 Principles of Physical Geology (lab) 4 s.h.
113:113 Holistic Origins 3 s.h.

Transfer Credit in Natural Sciences
Several semester hours of acceptable course work at another college or university can meet the requirement. Students who transfer fewer than 7 semester hours of course work in natural sciences must complete one of the approved university courses listed above if the transfer work does not include one.

Credit by Examination in Natural Sciences
Until fall semester 1991, students who earn 8 semester hours on the CLEP natural science general examination have satisfied the requirement. Students who earn 3 or 4 semester hours by AP or CLEP applicable to the natural sciences area must complete a course with a laboratory component.

Effective fall semester 1991, students who pass both subtests of the CLEP natural science general examination will be awarded 3 semester hours of credit toward the natural sciences requirement and 3 semester hours of elective credit. These students must complete the natural sciences requirement by taking a course with a laboratory component.

Quantitative or Formal Reasoning
This requirement may be satisfied by completing one of the courses listed below or by completing a more advanced course in this area. Students should fulfill the requirement by the end of the second year in residence or during the first 60 semester hours of study at the University of Iowa. 70-252 Elementary Statistics and Inference 3 s.h.
22:01 Introduction to Matrix Algebra 3 s.h.
22:03 Introduction to Calculus with Applications 4 s.h.
22:13 Mathematics for the Biological Sciences 4 s.h.
22:14 Calculus for the Biological Sciences 4 s.h.
22:17 Calculus Methods I 3 s.h.
22:18 Calculus Methods II 3 s.h.
22:20 Calculus and Linear Algebra 4 s.h.
22:24 Principles of Reasoning 3 s.h.
23:40 Theory and Practice of Argument 3 s.h.
10:03 Language and Formal Reasoning 3 s.h.

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

62:1 Principles of Microeconomics 4 s.h.
62:1 Principles of Macroeconomics 4 s.h.
70-120 Politics of Education 3 s.h.
71 Social Science Perspectives on Contemporary Africa 3 s.h.
17:01 Introduction to Afro-American Society 3 s.h.
19:10 Social Scientific Foundations of Communication 3 s.h.
19:11 Introduction to American Politics 3 s.h.
19:12 Introduction to Political Thought and Political Argument 3 s.h.
19:13 Introduction to the Politics of the Industrial Democracies 3 s.h.
19:14 Introduction to the Politics of Communist Societies 3 s.h.
19:22 Introduction to the Politics of the Third World 3 s.h.
19:22 Introduction to Political Behavior 3 s.h.
19:24 Introduction to International Relations 3 s.h.
19:31 American Foreign Policy 3 s.h.
19:32 African Development 3 s.h.
19:33 Elementary Psychology 3 s.h.
19:33 General Psychology (either 33:11 or 33:31 may be used) 3 s.h.
19:33 Introduction to Clinical Psychology 3 s.h.
19:34 Introduction to Child Psychology 3 s.h.
19:36 Introduction to Mental Processes 3 s.h.
19:37 Introduction to Comparative Psychology 3 s.h.
19:37 Introduction to Society: Principles 3 s.h.
19:37 Introduction to Sociology: Problems 3 s.h.

39:35 Mass Media and Mass Behavior 3 s.h.
39:36 Communication Theory in Everyday Human Interactions 3 s.h.
41:1 Introduction to Human Geography 4 s.h.
41:1 Introduction to Social Geography 3 s.h.
50:1 Contemporary Environmental Issues 3 s.h.
50:3 Introduction to Economic Geography 3 s.h.
54:1 African Development 3 s.h.
57:1 Global Interdependence and Human Survival 3 s.h.
10:111 Language and Society 3 s.h.
10:4501 Social Scientific Perspectives on Language and Social Interaction 3 s.h.
10:125 Introduction to the Study of Culture and Society 3 s.h.
11:11 Anthropology and Contemporary World Problems 3 s.h.
11:14 Language and Human Behavior 3 s.h.
11:15 Urban Anthropology 3 s.h.
13:40 Introduction to Afro-American Society 3 s.h.
19:11 Social Science Perspectives on Contemporary Africa 3 s.h.
19:11 Social Science Perspectives on Contemporary Africa 3 s.h.
19:11 South African Development 3 s.h.

General Education
Restrictions and Waivers

Program: No course used to satisfy any general Education Requirements may be used to satisfy any general Education Requirements.

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 any area except physical education and foreign language.

Departmental waivers of General Education Requirements: Departmental waivers are not permitted for B.A. or B.S. candidates. However, with the approval of the Educational Policy Committe, departments may waive up to 1 semester hour of General Education Requirements for their B.A. and B.S. candidates in the area closest to or relevant to the students' programs. Approved waivers are listed in the current Schedule of Courses in the departmental sections of the Catalog.
Placement and Exemption Examinations for General Education

Satisfactory performance on exams administered at The University of Iowa may lead to full or partial exemption from the rhetoric, mathematics, physical education, or foreign language requirements. Academic credit is not awarded.

Exemption: major academic credit may be awarded for successfully exempting examinations administered by the Advanced Placement Program (APP) or the College-Level Examination Program (CLEP) in the following General Education Requirement areas: rhetoric, foreign language, historical perspectives, humanities, natural science, quantitative or formal reasoning, and social sciences. Specific information about duplication of credit for APP and CLEP is available from the Evaluation and Examination Services.

Transfer Students

Transfer students who have taken courses elsewhere that are similar to those approved for general education at Iowa may count credits toward the General Education Requirements. Acceptance of these courses is shown on the student's admission or graduation program. Students who transfer less than 24 semester hours toward a major are exempt from the General Education Requirement. Students may request an evaluation of courses completed at other universities. Students are responsible for looking at their major department for the requirements.

Students with A.A. Degrees

Students who receive A.A. degrees from Iowa Community Colleges participating in the Iowa Community Colleges Articulation Agreement are considered to have met all the General Education Requirements. However, the program of study for which the A.A. degree was awarded must include the following:

- A minimum of 6 semester hours (90 quarter hours) of credit accepted toward graduation; mathematics courses comprise 22M1, Basic Algebra I, 22M2, Basic Algebra II, 22M3, Basic Geometry, and are not accepted 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 are granted a maximum of 62 semester hours of credit from all sources toward the 124 semester hours required for a bachelor's degree at Iowa. If a student has earned more than 62 semester hours of credit in completing the A.A. degree, the student credit is used as 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. toward a B.S.F.A. and 40 toward the B.F.A. or B.A. in interdisciplinary studies. This includes less than a major of Iowa and transfer course work.

Course without Degree Credit

Courses W10, W10, W140, 22M1, 22M2, and 22M3 carry no degree credit. Students who take these courses may count the additional semester hours beyond the 124 required for graduation. In addition, courses used to make up deficiencies in the unit (addition) requirements carry no degree credit. Although these courses carry no degree credit, it is agreed that they are used in computing grade-point averages, and the hours count toward a bachelor's degree for all official purposes (e.g., full-time and halftime status, minimum schedule, minimum semester-hour requirement, responsible academic progress, dean's list eligibility, and to be able to graduate). Requirements for the Major

Specific requirements for majors offered in the College of Liberal Arts are found in the departmental sections of the Catalog. Students should confer with their advisors in selecting a plan for a major.

A minimum of 50 semester hours of credit from one academic department is accepted toward a B.A. or B.S. degree. A maximum of 8 semester hours of credit from one academic department is accepted toward the B.A.S.F.A. and 40 toward the B.S.F.A. or B.A. in interdisciplinary studies. This includes less than a major of Iowa and transfer course work. Special circumstances are double majors are described below.

Departments have different policies on the acceptance of transfer coursework required for the major. Students are advised to check with their major department.

Courses in the major department may not be taken on a pass/fail/no credit/withdrawal basis. Students should confer with their advisors in selecting a plan for a major.

A minimum of 16 semester hours of credit by examination may be used to satisfy course requirements. These courses may be used toward the 124 semester hours required for graduation.

A maximum of 20 semester hours of B.S.F.A. credit is accepted toward the 124 semester hours required for graduation.

Courses without Degree Credit

Courses W10, W10, W140, 22M1, 22M2, and 22M3 carry no degree credit. Students who take these courses may count the additional semester hours beyond the 124 required for graduation. In addition, courses used to make up deficiencies in the unit (addition) requirements carry no degree credit. Although these courses carry no degree credit, it is agreed that they are used in computing grade-point averages, and the hours count toward a bachelor's degree for all official purposes (e.g., full-time and halftime status, minimum schedule, minimum semester-hour requirement, responsible academic progress, dean's list eligibility, and to be able to graduate). Requirements for the Major

Specific requirements for majors offered in the College of Liberal Arts are found in the departmental sections of the Catalog. Students should confer with their advisors in selecting a plan for a major.

A minimum of 50 semester hours of credit from one academic department is accepted toward a B.A. or B.S. degree. A maximum of 8 semester hours of credit from one academic department is accepted toward the B.S.F.A. and 40 toward the B.S.F.A. or B.A. in interdisciplinary studies. This includes less than a major of Iowa and transfer course work. Special circumstances are double majors are described below.

Departments have different policies on the acceptance of transfer coursework required for the major. Students are advised to check with their major department.

Courses in the major department may not be taken on a pass/fail/no credit/withdrawal basis. Students should confer with their advisors in selecting a plan for a major.

A minimum of 16 semester hours of credit by examination may be used to satisfy course requirements. These courses may be used toward the 124 semester hours required for graduation.

A maximum of 20 semester hours of B.S.F.A. credit is accepted toward the 124 semester hours required for graduation.

Courses without Degree Credit

Courses W10, W10, W140, 22M1, 22M2, and 22M3 carry no degree credit. Students who take these courses may count the additional semester hours beyond the 124 required for graduation. In addition, courses used to make up deficiencies in the unit (addition) requirements carry no degree credit. Although these courses carry no degree credit, it is agreed that they are used in computing grade-point averages, and the hours count toward a bachelor's degree for all official purposes (e.g., full-time and halftime status, minimum schedule, minimum semester-hour requirement, responsible academic progress, dean's list eligibility, and to be able to graduate). Requirements for the Major

Specific requirements for majors offered in the College of Liberal Arts are found in the departmental sections of the Catalog. Students should confer with their advisors in selecting a plan for a major.

A minimum of 50 semester hours of credit from one academic department is accepted toward a B.A. or B.S. degree. A maximum of 8 semester hours of credit from one academic department is accepted toward the B.S.F.A. and 40 toward the B.S.F.A. or B.A. in interdisciplinary studies. This includes less than a major of Iowa and transfer course work. Special circumstances are double majors are described below.

Departments have different policies on the acceptance of transfer coursework required for the major. Students are advised to check with their major department.

Courses in the major department may not be taken on a pass/fail/no credit/withdrawal basis. Students should confer with their advisors in selecting a plan for a major.

A minimum of 16 semester hours of credit by examination may be used to satisfy course requirements. These courses may be used toward the 124 semester hours required for graduation.

A maximum of 20 semester hours of B.S.F.A. credit is accepted toward the 124 semester hours required for graduation.
When a single department offers a degree in more than one subject area, such as physics and astronomy or Spanish and Portuguese, students may earn a 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 the requirements for a second major must have successfully completed the residence requirements at the University of Iowa. The student must apply to graduate school in the Office of Registration upon completion of the requirements for the second major so that the notation can be placed on the permanent record. Students may return to the University to complete the requirements for a second major developed out of their liberal arts major.

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 in another college of the University. The minor may relate directly to the major or may allow a student to follow an interest entirely different and separate from the major.

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.

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 15 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/fail/ungraded.

Guidelines

Each academic unit determines which of its advanced courses it considers acceptable for a minor. Students seeking information about acceptable courses should consult the minor department office.

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

Students 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 the residence requirements for a master's or professional program may complete the requirements for a minor and apply to the Office of the Registrar to have a minor listed 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 the General Education Requirements.

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 their fields: dental hygiene; elementary education; health occupation education; interdepartmental studies;Forensics, science, and the arts; genetic education; social sciences; and speech and hearing science.

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

Undergraduate students in the Colleges of Business Administration, Engineering, Medicine, and Nursing may earn liberal arts minors by satisfying College of Liberal Arts requirements for minors. Engineering students interested in minors in physics, chemistry, or mathematics may enroll in 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 may earn a minor in business administration. The courses listed below satisfy all requirements for the minor. At least 15 semester hours of business administration courses are required. At least 2.00 is required in all courses taken for the minor and in all of these courses taken at Iowa.

A computer programming course (08/70, 22/20, 22/29, 12/16, 22/17, or 25/76).

Business calculus (22/15, 22/17, 22/25, or 22/35).

Statistics (27/10, 27/15, 27/20, 27/25, 22/102, 22/120, or 31/147).

62:1 Principles of Microeconomics.

62:2 Principles of Macroeconomics.

64:1 Introduction to Financial Accounting.

64:2 Managerial Cost Accounting.


68:100 Introduction to Marketing.

68:101 Introduction to Organizational Management (or 57/14).

68:110 Administrative Management.

*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 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 digits of their identification number and on the number of semester hours earned. The first four days of the rotation are reserved for students who have earned 72 or more semester hours; students with fewer than 72 semester hours register during the remainder of the period.

Late Registration

Students are not permitted to register after the Academic Programs Office, College of Education, closes one and one-half weeks of the summer session.

Classification of Students

Swimming Pool: Hours of Access Code
Freshman 0-39 A
Sophomore 40-59 A
Junior 60-89 A
Senior 90 or more A
Special (nondegree) students B

Changes in Registration Initiated by the Student

Adding and Dropping Courses

During the registration period, students need only an 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) with the approval of the advisor and the instructor. Special courses that meet on a different schedule or that start or end at times other than the beginning and end of the semester, and are listed in the Schedule of Courses, may be added with the necessary signatures at any time during the first one-third of the course's duration and dropped at any time during the first two-thirds of the course's duration. Preferentially similar deadlines operate during the actual eight-week summer sessions and for other special session courses.

Withdrawn (W)

Undergraduate students are assigned the grade of W (withdrawn) for any course in any college dropped after the third week of the semester (or first one and one-half weeks of the summer session). For courses that start at or end at times other than the beginning and end of the semester, students may drop the course any time within the first one-fourth of the course's duration without being assigned a W.

Limits on Withdrawal from Courses

Liberal arts students may withdraw only the same course with the grade of W or more than twice. Those who do so are placed on disciplinary probation. Liberal arts students entering the University Fall 1991 and after will be limited to an overall maximum of five W's. All other liberal arts students will be limited to a maximum of five W's beginning with their fall semester 1994 registration.

Deadlines: The University directly from high school with no prior full-time college experience are permitted to withdraw from all college courses for two weeks of enrollment from the maximum allowed. Students who have a legitimate reason for dropping a course (e.g., failing Illness, death of an immediate family member) and can document that reason are permitted to exclude that drop from the calculation. Requests for such exclusions must be made in the Office of Academic Programs, 119 Schaeffer Hall.

Adding and Dropping Courses Late

Students who wish to add or drop courses after the registration deadline may do so only with the signatures of the department chair for academic programs in addition to the signatures of the Academic Programs Office. Students may request permission for the dean's signature in the Office of Academic Programs, 119 Schaeffer Hall. Approval to add or drop courses late is granted only in extraordinary circumstances and only with appropriate documentation.

Changes in Variable and Arranged Credit

Students who have registered for courses allocated 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 four weeks of the semester (or first five weeks of the summer session) to change the number of semester hours. A student drops a course and adds it for that desired hours.

Withdrawal of Registration

Students may withdraw registration at any time before the end of the third week of the semester or sixth week of the summer session. No credit is given for the semester or session. Students who withdraw within the first one-fourth of the course's duration without being assigned a W may be dropped in the Office of the Registrar.

Student Responsibility

Students must initiate changes in registration; obtain the proper signatures on the proper forms, and deliver the forms to the Registration Center before the deadline. The confirmation that changes have been made is the revised Course Cohen presented 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 the first one and one-half weeks of the summer session), unless the student has the opportunity to meet his/her instructor for the course more who may withdraw for the benefit of students who otherwise would be unable to enroll in a certain crowded classes. It should not be used when these circumstances do not exist. The drop must be complete within the framework of W. 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 attempting to earn the number of semester hours). Approval is granted by the instructor of the course and the advisor. Instructors assign the mark of R (registrant) 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 and are graded R/W. Courses offered for zero credit as well as for credit hours, when offered for zero credit (R/W), Auditors who complete a course with a mark of R do not meet college requirements and carry no credit toward graduation.
Students may register as auditors only at the Registration Center.

During early registration: Students list the course on the registration form and enter "C" in the semester hours column, and the instructor signs in the special permission section on the back of the registration form; or students may add the course for zero credit on a Change of Registration form with the signature of the instructor. Once classes have begun: Students add the course for zero credit on a Change of Registration form with the signatures of the instructor and the Office of Academic Programs, 116 Schaffer Hall.

Changes in credit to audit or from audit to credit must be made within the first three weeks of the semester (or first one and one-half weeks of the summer session), using a Change of Registration form and obtaining the necessary signatures. No changes are accepted after the deadline.

**Maximum Schedule**

The maximum permitted registration is 18 semester hours during a semester, 9 semester hours during a summer session. Students in good academic standing may request permission to register for more than the maximum allowed in the Office of Academic Programs, 116 Schaffer Hall.

To qualify for full-time status for purposes of tuition assessment, and so forth, students must register for at least 12 semester hours during a fall or spring semester or 6 semester hours during a summer session. The recommended load is 12 hours for students who wish to complete their degree in eight semesters (four years) in 15-16 semester hours each semester.

**Graduation Analysis**

A graduation analysis evaluates the program a student is taking toward a particular degree by checking total hours attempted, grade-point average, hours in residence, and courses completed to satisfy the General Education Requirements and requirements in the major. Students who are currently enrolled in the College of Liberal Arts and who have declared a major receive a graduation analysis during their junior year. Ordinarily, students do not receive another graduation analysis until their final semester.

Graduation progress reports, which are sent to students each semester they are enrolled, assess fulfillment of General Education Requirements, calculate grade-point averages, and provide a summary of courses taken. The reports do not evaluate progress toward the major.

**Duplication**

Duplication occurs when students take the same course more than once or take a course that duplicates the content of a satisfactorily completed course. Duplication is assessed by the Office of the Registrar at the time of graduation analysis. Hours earned by duplication do not count toward the total number of hours required for graduation. Grades for both courses, however, are used in computing grade-point averages.

**Regression**

Regression occurs when students take a lower-level or prerequisite course after having satisfactorily completed a more advanced course in the same subject area. At the time of graduation analysis, the Office of the Registrar determines whether regression has occurred. Hours earned by regression do not count toward the total number of hours required for graduation.

**Application for Degree**

To be considered for graduation, students must file an application for a degree with the Office of the Registrar before the deadline for the semester in which the degree is to be conferred. Students who want to have a minor listed on their permanent record must inform the Office of the Registrar when they file the degree application, so that completion of the requirements for the minor can be verified.

**Grading System**

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

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>A-</td>
<td>3.75</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.67</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>1.67</td>
</tr>
<tr>
<td>D</td>
<td>1.33</td>
</tr>
<tr>
<td>D-</td>
<td>1.00</td>
</tr>
<tr>
<td>F (failing)</td>
<td>0</td>
</tr>
</tbody>
</table>

Incomplete (I)

Instructors may report a grade of I only if the unfinished 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 courses for which no grade is reported. This grade may be changed to a valid grade according to the procedures for incomplesses described above. Failure to remove the O before the designated deadline will result in an F being assigned for each O.

Pass/Nonpass Option (P/N)
Students in the College of Liberal Arts have the option of taking elective courses on a P/N basis. The instructor assigns a standard letter grade, which is converted automatically in the Office of the Registrar. Grades of A, A-, B+, B, B-, C+, C, and C- are converted to P or 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 summer 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 two-thirds of the duration of the course. The signatures of both the instructor and the advisor must be obtained on the P/N form. The form 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. Courses used to satisfy the General Education Requirements may not be taken P/N. Course work in major departments is not available on a P/N basis, except by departmental action for courses that are not the equivalent of major courses. This restriction applies to both University of Iowa and transfer course work. Courses required for the major in cognitive or related areas may be taken P/N, if available, at the discretion of the major department. No course accepted toward the major may be taken P/N.

A maximum of 16 semester hours of P grades from all colleges is accepted toward the bachelor's degree. Transfer students admitted to the University with fewer than 60 semester hours credit are limited to a maximum of 16 semester hours of P grades. These students must complete 60 semester hours before graduation.

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 F is not used in computing the grade-point averages, but the grade of F is used. Credit with the grade of F 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 S is accepted toward the bachelor's degree.

Second-Grade-Only Option
Students may repeat courses taken at the University of Iowa, with obvious exceptions, in order to have only the grade and credit of the transfer registration used in calculating total hours earned as well as the University of Iowa cumulative and total cumulative grade-point averages. Under the provisions of this option, the Office of the Registrar marks the permanent record (with the symbol #) to show that a particular course has been repeated. Both grades remain on the permanent record, but only the second one is used in calculating the grade-point averages and hours earned.

Students who wish to use this option register with the usual manner for the course they desire to repeat or add it during the regular period for adding courses (the first three weeks of the semester or the first three weeks of the summer session). Students also must file for the option in the Office of Academic Programs, 118 Schaeffer Hall. Unless this is done, both grades continue to be counted in the grade-point average.

Restrictions
The second-grade-only option may be used only for University of Iowa courses, including courses in the Saturday and Evening Class Programs, telecourses, and off-campus courses. A course taken at another college or university may not be repeated at the University of Iowa under the second-grade-only option, nor may a 2.0 course be repeated at another institution.

The option may be used only once per course.

The option may not be used if obvious duplication has occurred.

If the course was taken for a grade the first time, it must be taken for a grade the second time. If the course was taken pass/fail the first time, it may be taken pass/fail or for a grade the second time.

A course taken through regular registration may not be taken through Correspondence Study (GCS) under the second-grade-only option. A course taken through GCS may be repeated through GCS or regular registration.

Students who enroll at The University of Iowa for the first time before summer session 1986 may apply this provision to a maximum of 16 semester hours (16) May, 1982. After that, they will be limited to a maximum of three courses.

Mid-Semester Reports
At mid-term, instructors are asked to report grades for students whose work is below C. The Office of the Registrar distributes these reports to advisors and to individual students, but deans' grades are not recorded on the permanent record.

Grading Grievances
Grading grievances should be filed with the instructor who assigned the grade. If the student and instructor cannot resolve the matter, the student should discuss it further with the departmental executive officer or faculty supervisor supervising a multisection course. The departmental executive officer or faculty supervisor is responsible for resolving grading grievances to the associate dean for 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 not graduate 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 (16 or more hours), 1.00
Sophomores (30-59 a.h.), 1.75
Juniors (60-89 a.h.), 1.90
Seniors (90 or more a.h.), 2.00

Beginning Fall 1992
Effective fall semester 1992, all liberal arts students will be held to the following standards:

Freshmen (16 or more hours), 1.00
Sophomores (30-59 a.h.), 1.75
Juniors (60-89 a.h.), 1.90
Seniors (90 or more a.h.), 2.00

Beginning Fall 1992

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

Students admitted unconditionally (not on probation) are subject to dismissal from the college after one semester on academic probation. Freedom admitted or probation is subject to dismissal after two consecutive semesters on academic probation. Continuing students are subject to dismissal after two consecutive semesters on academic probation. Very 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 reversal of a dismissal. A student dismissed in January must appeal in writing no later than 12:00 p.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 Schaeffer Hall. The decision of the committee is final.

Reinstatement to the College
Students dismissed for unsatisfactory scholarship for the first time are not permitted to register again for one year. Students dismissed a second time are not permitted to register for at least two years. Requests for reinstatement must be made in writing to the office of the person and should be addressed to the academic director, Office of Academic Programs, 116 Schaeffer Hall. Arrangement for an interview must be made and the interview must take place prior to July 15. For reinstatement to a fall semester or between October 1 and December 15 for reinstatement to a spring semester. Late requests are denied by 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 attempts to achieve academic 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 their status 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 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 must attend all class meetings. Instructors may require that students be permitted to make up examinations and other forms of class work. They may require that students be enrolled in those courses that are designated as University, and may require that students be authorized by the associate dean for academic programs or University Academic Programs.

Excused Absences
For permission to be absent from class or to participate in authorized University activities, students are expected to present their requests in writing to each instructor to whom they wish to participate in University activities. Instructors may require that students be present at all class meetings. Excused absences are granted to members of athletics teams, the marching band, debate teams, and other recognized University groups and to participants in University field trips. Participation in the National Guard is also considered an authorized activity.

Student Conduct

The Code of Student Life prohibits forgery of University documents, documents obtained by presenting the study of a student's identity cards. The Office of Academic Programs investigates students suspected of forgery and takes disciplinary action based on the evidence provided by the victim or the 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.
Recognition for Academic Achievement

Dean's List

Liberal arts students who achieve grade-point averages of 3.50 or above during a given semester are eligible for the Dean's List. The University of Iowa GUIDANCE Office (Study courses) and who have no hours of 1 (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 grades only; and graduation with honors in a particular field, based upon 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 fall, Spring, and summer terms in residence in the College of Liberal Arts at the University of Iowa, of which at least 45 semester hours must have been completed prior to the student's final registration.

Graduation with Distinction

The Office of the Registrar certifies 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. Ranking is 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 be approved by the Honors Council and the dean of the college.

Admission Requirements

Students are admitted to the College of Liberal Arts on the basis of three criteria: completion of a set of high school unit requirements; high school class rank or college transfer grade-point average; and ACT/SAT results or a combination of high school college records and standardized test scores. Some programs within the College of Liberal Arts have selective admission procedures. Admission to these programs is based on grades and 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) and have their scores reported to the University before they register for classes. These examinations are used as a criterion for admission, for placement purposes, for scholastic, and for financial University-administered scholarships and loans.

Applicants whose native language is not English must present scores on the Test of English as a Foreign Language (TOEFL).

Unit Requirements

The faculty of the College of Liberal Arts recognizes the need for entering students to be prepared for college course work immediately upon matriculation 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 course or their equivalents, in addition to the other requirements listed below. These high school unit requirements apply to entering freshmen who graduate (a) from high school after 1980, transfers students with fewer than 24 semester hours of transferable credit who graduate (b) from high school after 1985, and transfer students with 24 or more semester hours of transferable credit who graduate from high school in 1980 or after.

Four years of English/language arts, with tutorials 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, and/or humanities (cinema, dance, drama, music, photography, studio art, theater, visual art, and/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 curriculum did not provide the courses necessary to complete the unit requirements may be offered conditional admission to the College of Liberal Arts 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 2.0 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 registration. To all courses, criteria taken to remove deficiencies must be completed by the beginning of the student's second-year 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, grade, class rank, and test score requirements. They must complete without deterioration, any college-level foreign language courses with a grade of C- or better.

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

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

Transfer Students

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

Other students may use college coursework toward degree requirements. Coursework 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 also may remove deficiencies in English, mathematics, natural sciences, or social studies by earning acceptable scores on approved 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.

Students 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 percent rank in class in a comparable index for students who also submit SAT instead of ACT scores. The minimum index for students who submit ACT scores is 30, for those who submit SAT scores it is 1100.

Eligible Iowa residents are granted 600 for postsecondary summer session, or denial of 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 the College by Educational institutions, published by the American Association of Collegiate Registrars and Administrative Officers, is followed for schools not regionally accredited.

Applicants must submit an official transcript from each college or university they have previously attended. Applicants also must submit high school transcripts, scores on standardized tests, and any other records or forms 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-point system) on all college work previously attempted, are admitted.

Students with lower 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 period of 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 account of the previous record. 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 refer above to a recognized college without curriculum, and 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 it is for one full academic year. The college specifies to the student the terms of the validation process at the time of conditional admission. Students from unaccredited 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 assure 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 bachelor’s 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 who present 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 550 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 through 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 1050 or above) and whose ACT English subscore is 21 or above (600 or above).

Non-residents of Iowa whose ACT composite score is 25 or above (SAT critical score of 1050 or above) and whose ACT English subscore is 21 or above (600 or above).

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

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

A maximum of 32 semester hours of credit by examination from all approved sources may be accepted toward the 124 semester hours required for graduation. Credit by examination shall be granted in the major or minor. Credit awarded on the basis of credit by examination is considered credit by examination.

Placement and Exemption Examinations for General Education

Failure 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) or 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 16 semester hours. Credit toward graduation is awarded to foreign language majors only for passing examinations covering the third and fourth-semester levels above the high school level. Credit by examination may not be applied to the 12 semester hours of advanced courses required for the minor.

Advanced Placement Program (APP)

Students who pursue college-level learning while still in high school may use the APP testing program to demonstrate 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, to 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)

CLIP is an achievement testing program offered by the College Board that allows students to demonstrate college-level competence they may have achieved outside of formal college instructional programs. General examinations cover broad content areas such as the humanities, natural sciences, and social science; subject examinations cover more narrow ranges of content, as typically dealt with in a single college course. Scores on the general examinations can be used to determine whether students have satisfied all or a portion of the General Education Requirements in the area(s) covered by the examination(s) 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 end of the semester so that test results can be used to plan their first semester schedules.

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

Validation of Credit

Students with educational experience obtained at a nonaccredited institution or in a formal 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.

Credit for Military Service

The admissions officer is authorized to evaluate transcripts from the military services according to the recommendations contained in the American Council on Education's Guide to the Evaluation of Educational Experiences in לברל Service, with the understanding that any inconsistencies between such recommendations and the standards of the College of Liberal Arts will be referred to the Office of Academic Programs. Armed Forces Institute correspondence courses may be accepted for credit under appropriate circumstances.
Nondepartmental Courses
06000 Conditioning for Competition 0.5 h.
08021 Intramural Athletic Participation 1 h.
08022 Intramural Athletic Participation 1 h.
10100 Intramural Participation 1 h.
10140 Field Lab Techniques I 1 h.
10141 Field Lab Techniques II 1 h.
Field and advanced instruction in the student's choice of a wide variety of field and实验室 activities as selected by the instructor. The minimum credit requirement is two hours. See current Schedule of Courses for details.

19-03 Fitness and Wellness for Life 2 h.
Two-hour introduction to fitness and wellness. Emphasis on the biological, psychological, and social aspects of fitness and wellness. Students receive nightly activities.

1012 Human Biology (Lab) & Seminar I 1 h.
A laboratory examination of the biological and social sciences.

10122 Ecology and Evolution 2 h.
Examination of the environments and diversity of living things, their patterns on Earth, their organization in ecological systems, and the evolution of populations, species, tissues, functions, genetics, and evolution,

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

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. Students may enroll in AFROTC academic work that may be applied toward a degree. Students who choose to continue AFROTC from college to college at the University.

In order to receive a commission, AFROTC cadets must complete an Air Force ROTC Laboratory course for research as well as courses specified by the U.S. Air Force. Prior to admission, all AFROTC cadets must complete a course in basic skills required for students.

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 AFROTC 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 a 4-year, 9-month AFROTC program. Students accepted into the POC make a commitment to serve a minimum of four years in the U.S. Air Force. To enter the POC, students must be selected and must successfully complete field training. Students generally take the POC during their last two years in school.

Leadership Laboratory
Leadership laboratory is cadet 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 an academic class and in a 233A course with Leadership Laboratory.

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

Field training consists of aircraft, airplane, and survival orientation, officer training, physical training, basic training, and equal opportunity training. The six-week field training provides 60 hours of academic work that a student normally has taken in 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-hour, semester-long course and a 23A course listed Leadership Laboratory during which the cadet must complete the freshmen and sophomore years. Any student who meets AFROTC 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, including informal parties, dances, and a military ball.

AFROTC cadets may join the Air Force ROTC, a national professional honor society dedicated to developing leadership qualities and serving their community.

The advanced training program is a voluntary 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.

All AFROTC cadets may attend airbase training and upon completion wear the airman parachute "jump wings."
AFRICAN-AMERICAN WORLD STUDIES

Chair: Donald T. Turner
Professor, Dept. of American Studies (English/African-American World Studies), Director, Turner Center for African-American Studies, and Director, African-American Studies Program

Department of African-Asian Studies

African-American World Studies Program

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 offers courses examining the African heritage and present relationships of African-Americans in Africa and the Americas. A student may complete a major in African-American world studies by taking either of the following courses:

1. African-American World Studies I
2. African-American World Studies II

Additionally, students interested in this field may also enroll in the following courses:

AFRICAN-AMERICAN WORLD STUDIES

AFRICAN-AMERICAN STUDIES

Bachelor of Arts

Students majoring in African-American studies are required to complete a minimum of 12 units in the following courses:

AFRICAN-AMERICAN STUDIES

Total of 30 semester hours

Required Courses

Total of 30 semester hours

Required Courses

Total of 30 semester hours

For majors in the program, these courses are prerequisite to the advanced required courses in history and literature and to the Seminar Seminar.

AFRICAN-AMERICAN WORLD STUDIES

Total of 30 semester hours

Required Courses

Total of 30 semester hours

For majors in the program, these courses are prerequisite to the advanced required courses in history and literature and to the Seminar Seminar.

AFRICAN-AMERICAN STUDIES

Total of 30 semester hours

Required Courses

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For majors in the program, these courses are prerequisite to the advanced required courses in history and literature and to the Seminar Seminar.

AFRICAN-AMERICAN WORLD STUDIES

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Required Courses

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AFRICAN-AMERICAN WORLD STUDIES

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Required Courses

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For majors in the program, these courses are prerequisite to the advanced required courses in history and literature and to the Seminar Seminar.

AFRICAN-AMERICAN STUDIES

Total of 30 semester hours

Required Courses

Total of 30 semester hours

For majors in the program, these courses are prerequisite to the advanced required courses in history and literature and to the Seminar Seminar.

AFRICAN-AMERICAN WORLD STUDIES

Total of 30 semester hours

Required Courses

Total of 30 semester hours

For majors in the program, these courses are prerequisite to the advanced required courses in history and literature and to the Seminar Seminar.

AFRICAN-AMERICAN STUDIES

Total of 30 semester hours

Required Courses

Total of 30 semester hours

For majors in the program, these courses are prerequisite to the advanced required courses in history and literature and to the Seminar Seminar.
Another course in Afro-American history, literature, philosophy, or sociology... 3 s.h.
129.80 Critical Skills Seminar 3 s.h.
129.95 Senior Seminar 3 s.h.

Electives
Students must earn 6 semester hours of electives in 129-prefix courses, not including 129.10, 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 adviser, the honors candidate defends 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 an approved faculty member and may register for up to 6 semester hours in 129.00 Honors Project. Results are presented in a senior essay to a committee of three faculty members, including the supervising faculty member, the honors adviser, and a third faculty member of the student's choice. When the honors adviser is the supervising faculty member, the candidate may select second and third faculty members. The candidate's committee may choose to hear a oral defense of the final project, usually in the twelfth week of the student's final 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 adviser, students select 15 semester hours (five courses) in courses from the African-American world studies courses. Four of these courses (12 semester hours) must be numbered 100 or above. Five courses 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 selected from 129-prefix courses in the sections of the course Catalogue. But 129.175 and 129.176 may not be counted toward the minor.

Students who wish to pursue a minor in Afro-American studies should consult with an adviser in the African-American World Studies Program as early as possible. It is recommended that they select an introductory course from the following: 129.15, 129.17, 129.217, 129.218. Advisers also recommend that they choose 129.115, 129.116, and 129.165 or 129.166 as two of their upper-level courses.

Graduate Programs
Master of Arts
The interdisciplinary curriculum leading to a Master of Arts degree in Afro-American Studies provides an intensive, organized, graduate-level exploration of Afro-American culture and experience. Such a program especially benefits individuals preparing for community college teaching, work with community-service organizations, or other careers in which an understanding of Afro-Americans may be necessary or helpful.

Curriculum Requirements
The Master of Arts Program in Afro-American studies requires 34 postbaccalaureate semester hours. Requirements include 129.211 Introduction to Research in Afro-American Culture (3 s.h.), 129.312 Advanced Research in Afro-American Culture (either thesis/project, 4 s.h.), and 12 semester hours of required courses in Afro-American studies.

Most students will require to earn 12 semester hours in literature/history by taking 129.115, 129.116, 129.165, and 129.166. Afro-American History I and II. Students who have earned undergraduate or graduate credit for a year-long survey of either Afro-American literature or Afro-American history may satisfy the literature/history requirement by studying advanced Afro-American studies courses approved by their adviser.

To complete the curriculum, students select 15 semester hours of electives in consultation with their advisers. Recommended are courses in Afro-American music, Afro-American art, or Afro-American literature. Students may earn a grade-point average of 2.00 in all courses in the program to determine which courses numbered above 100 will be approved for an M.A. degree.

Because the African-American world studies advisory committee wants to encourage doctoral study for those who have the ability, interest, and resources, it recommends that 6 of the 15 semester hours of electives in the Master of Arts program be used to explore doctoral education in their discipline. Students in Afro-American world studies. Possible fields of study are Afro-American studies, anthropology, education, English, geography, history, and sociology. Students are encouraged to select at least one-half of the courses in the M.A. curriculum from those numbered above 100.

Language/Tool Requirements
No foreign language or tool is required for the Master of Arts program in Afro-American studies. No studies in Afro-American studies, but students considering doctoral study in another field are encouraged to complete one language requirement in a foreign field while studying at the master's level.

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

Thesis/Project Requirements
A thesis is not required, but an option, for a Master of Arts degree in Afro-American studies. If a student elects to write a thesis, the thesis must explore a topic of Afro-American culture and/or experience and must use research from more than one discipline. The maximum credit for a thesis is 4 semester hours. Students who do not prepare a thesis are required to develop, in consultation with an adviser, a project related to Afro-American culture and/or experience which is completed. This project must be presented and approved by the student's committee. Credit for the thesis project is awarded. Students in Afro-American studies. Credit for the thesis project is awarded. Students in Afro-American studies.

Admission
In addition to the general requirements of the Graduate College, unconditional admission to the African-American World Studies Program requires that students have an appropriate educational background in literature and the social sciences, at least 6 semester hours of college credit in Afro-American literature and/or history courses, and a minimum grade-point average of 2.00 in previous college courses in Afro-American studies. Students may be asked to take, without credit toward the master's degree, courses needed to remedy deficiencies in undergraduate preparation. Applicants for admission are expected to 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 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.

Co-curricular Activities

Black Kaleidoscope

The African-American World Studies Program also sponsors 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 Afro-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 slave 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 for the current year’s topic. The program continues 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. It also attempts to provide a knowledge of Black culture that will promote intercultural understanding among all members of the University community. See “Cultural Centers” in the “Student Life at Iowa” section of the Catalog.

Black Genesis Troupe

The African-American World Studies Program also sponsors 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

113:151 Sociology of the Third World

Art and Art History

181:190 Themes in Art History: African Crafts

181:202 Seminar: Problems in African Art

Business Administration

62:252 Collective Bargaining

Comparative Literature

48:59 Non-Western Literary Traditions

48:100 Cultural Identity in Caribbean Literature

Economics

71:154 Employment Policy and Planning in the Third World

Education

71:194 Education in the Third World

71:199 Educational Sociology

71:194 Educational, Race, and Ethnicity

71:195 Socialization of the School-Age Child

71:332 The Culturally Different in Diverse Settings

Geography

44:157 Third World Development Support

History

15A:63 American History 1865-1877

15A:62 American History 1877-1913

15A:127 American Intellectual History 1680-1877

15A:128 American Intellectual History from 1877

15A:163 United States in the Early Republic

15A:154 Civil War and Reconstruction

15A:185 The Gilded Age in America

15A:185 The Progressive Era in America

15A:185 The New Era and The New Deal 1920-1945

15A:185 The Contemporary United States 1940-Present

Physical Education and Sports Studies

28:156 Minorities in Sports

Political Science

30:146 African Development

30:148 The Politics of Southern Africa

30:150 The Political Economy of the Third World

Sociology

34:165 Social Inequality

Social Work

42:147 Racism and Discrimination

Courses

For Undergraduates

110:046 Cooperative Education Internship

122:050 Literature of the African Peoples

122:050 Introduction to selected works of three of the six continental areas of the United States, the Caribbean, and Africa: North America, Latin America, Caribbean, Africa, Europe, and Asia. Prerequisite: English 101 or 102, or 21:14.

152:036 Black History Workshop

160:050 Black American Poetry as Background and Model for Student Writing: Explorations on Discourses and Identities of People by People.
AFRICAN STUDIES PROGRAM

Coordinator: Joel Berken (Political Science), Department Committee: Stephen Aron (International Education and Services), Joseph Asilany (Economics and Mass Communication), Joel Berken (Political Science), Susan Berken (College of Liberal Arts Honors Program), Jacques Bourgeois (French and Italian), John Oke (Social Work), James Gilfilla (History), Ah Gramain (Art and Art History), John Powell (English Literature), Michael McMillan (Geography), Peter较易 (Classics), and Jennifer Randles (English, African Studies, African History and Art History, and African Studies (Geography, Archaeology, Anthropology).)

The African Studies Program helps students gain a broader understanding of traditional and contemporary life in Africa, 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 Study Collection of African sculpture at the Museum of Art is central to the program and of enormous benefit 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 IC School of Journalism and Mass Communication master’s programs in development support communication. The University also participates in exchange programs with the University of Dar es Salaam, Tanzania; and the University of Addis Ababa, Ethiopia, 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 robust foundation for 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 lists of study: introductory, intermediate, and advanced. Undergraduate students pursuing the certificate take 477:00, "Contemporary Africa as an Introduction to the Continent and its History, art, literature, politics, and peoples," and an introduction to the Africanist faculty at Iowa. This is followed by 15 semester hours of intermediate and advanced courses, with at least one course from each of four areas: study of literature, art history, 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 the equivalent of any foreign language spoken in African Languages currently taught at The University of Iowa that meet this requirement are French, Portuguese, and Spanish.

Introductory Course

141:02 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

141:144 Literatures of the African Peoples 3 s.h.
141:173 African Drama 3 s.h.
141:176 African Literature 3 s.h.
141:188 Francophone Literature of the African Diaspora 3 s.h.

Anthropology

141:177 Peoples and Cultures of Africa 3 s.h.
113:180 Special Topics in Anthropology 3 s.h.

Art

141:072 Art of West Africa 3 s.h.
141:108 Art of Central Africa 3 s.h.
141:190 Thematic Art History: African Crafts 3 s.h.

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

History

141:120 History of Pre-Colonial Africa 3 s.h.
141:121 History of Colonial Africa 3 s.h.
141:122 Modern African History 3 s.h.

Social Sciences

141:180 African Development 3 s.h.
141:184 The Politics of Socialism 3 s.h.
44:102 Planning and Geography of Underdevelopment 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.

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 courses offered are the following:

141:110 African News Commentary 2 s.h.
141:202 Seminar: Problems in African Art 2 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, 605 Jefferson Building, The University of Iowa, Iowa City, Iowa, 52242.

Courses

141:045 Introduction to African Studies 1-3 s.h.
141:144 Literatures of the African Peoples 3 s.h.
141:145 Literatures of the African Peoples 3 s.h.
141:231 Social Science Perspectives on Contemporary Africa 3 s.h.
141:292 African Drama 3 s.h.
141:295 African Literature 3 s.h.
141:307 Art of West Africa 3 s.h.
141:308 Art of Central Africa 3 s.h.
141:310 African News Commentary 2 s.h.
141:315 African Literature 3 s.h.
141:320 History of Pre-Colonial Africa 3 s.h.
141:322 History of Colonial Africa 3 s.h.
141:324 Modern African History 3 s.h.
141:326 Planning and Geography of Underdevelopment 3 s.h.
141:328 Political Economy of Regional Development 3 s.h.
141:330 Agricultural Change and Rural Development in the Third World 3 s.h.
141:335 The Politics of Southern Africa 3 s.h.
AGING STUDIES PROGRAM

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 principally on older persons, the aging process, or interventive 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 program. Of study, at least 12 semester hours 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 following the completion of the program.

Eligibility

The program is open to all interested graduate students, upper-level undergraduates who have completed 45 semester hours, and special active students whose career interests and needs are served by completing the program.

Students in good standing at the above-mentioned levels may establish plans of study with the Aging Studies Program coordinator, who works with them and whose advisors to shape a plan of study 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 recommends the sequence 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 reviews completion of the student on the program’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 12 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 13 semester hours must be in advanced courses (beyond 300 level) at the University of Iowa. Students must have a grade point average of at least 2.0 to enroll 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.
- 36:120 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:

- 17:109 Cooperative Education Internship 0 s.h.
- 17:109 Directed Studies 0 s.h.
- 42:196 Field Work in Gerontology 1-6 s.h.
- 96:153 Nursing Practice in Chronic Illness (partial credit) 8 s.h.
- 96:165 Leadership, Management, and Research in Nursing Practice (partial credit) 8 s.h.

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

Elective Courses

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

Anthropology

- 113:136 Aging: A Cross-Cultural Perspective 3 s.h.
- 113:147 Special Topics in Anthropology: Death, Bereavement, and Ethnicity in Later Life 2 s.h.

Counselor Education

- 20:280 Topical Seminar in Counselor Education 2 s.h.

Dentistry

- 101:145 Introduction to Geriatric Dentistry 2 s.h.

Health and Hospital Administration

- 20:906 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) 2 s.h.

Internal Medicine

- 78:865 Geriatrics Seminars 1 s.h.

Nursing

- 96:146 Loss and Death in Clinical Nursing Practice 3 s.h.
- 96:150 Normative and Psychopathological Aspects of Aging 3 s.h.
- 96:210 Gerontological Nursing I 4 s.h.
- 96:211 Gerontological Nursing II 4 s.h.

Physical Education

- 22:722 Health Promotion and Aging 3 s.h.

Recreation Education

- 304:146 Contemporary Issues in Recreation and Leisure 3 s.h.
- 304:162 Aging and Leisure 3 s.h.
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 services; 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, continuing courses from cognate departments and programs with integrative American Studies Program courses to explore a common interest, topic, theme, or problem in American cultural experience. The major usually consists of 12 courses totaling 36 semester hours. Students are especially encouraged to complete courses in women's studies and African-American world studies. Courses in American studies must include: 45-100 American Values and 45-100 Seminar in American Cultural Studies. Requirements include:

- American studies core (4 courses, including 45-101 and 45-102) 12 s.h.
- American history (3 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. NAUI studies are especially recommended.

Minor

Students interested in a minor in American studies should consult program faculty members. The minor consists of a minimum of 15 semester hours of credit in American studies with a minimum grade-point average of 2.00. At least 12 of the 15 semester hours must be taken at The University of Iowa (classes numbered 45-100 and above), but 45-90 may also count toward this requirement.

Honors

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

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

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 discipline.

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 (3 semester hours) plus at least two other courses (3 semester hours) or seminars in American studies.

Five in eight additional courses selected in relation to a minor or period of cultural history; these courses may be grouped to address a major period of historical interest. Students must be enrolled in 45-90, Max 40 credits, which includes a comprehensive examination on coursework and basic concepts.

The M.A. also may be taken with thesis, in which case a student may receive up to 6 semester hours of 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. It is usually arranged in other professional fields, including social work and journalism.

Doctor of Philosophy

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

- Theory and Practice in American Studies (6 hours)
- 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. Every student must address through coursework, work and reading, all students address the cultural diversity of American life. Since race and gender issues are specifically explored on the oral portion of the comprehensive examination, some coursework is required in African-American studies and women's studies. Students must also satisfy a plan of study that emphasizes a particular period of American cultural history. Hence, history is considered relevant to the Chicago variety of African-American studies and women's studies. Students must complete a comprehensive course in American studies. In the senior year, students must take 600-level course work in American studies. Students must complete interdisciplinary training and background for a position that is required for the Ph.D. comprehensive examination. Students must work closely with advisors to be sure each major field is a well-defined dimension of a coherent plan of study.

Admission to Ph.D. Candidacy
A student's plan of study and evaluation by the departmental faculty must be presented to the departmental faculty. At least 30 semester hours of coursework in American studies and women's studies must be admitted to Ph.D. candidacy. Students should finish the courses approved in the plan of study and prepare for comprehensive examinations.

Comprehensive Examinations
Each field must include at least 6 courses (9 credits), including introductory courses in women's studies and American studies, and women's studies and American studies. All courses are for women's studies and American studies. Only a foreign language and a foreign language and American studies. Only a foreign language and American studies. Only a foreign language and American studies. Only a foreign language and American studies.

Comprehensive examination of two of the fields is normally taken through a four-hour written examination. The third is tested through a seminar on the topic. The oral portion of the comprehensive examination focuses on the position paper. The two written examinations, and the seminar on the topic.

Thesis
The first requirement for the Ph.D. in American studies is the presentation of an acceptable thesis on a topic whose investigation involves more than one field or discipline. The candidate must complete a comprehensive course in American studies and women's studies to present a creative thesis, such as fiction, autobiography, or film, combined with a critical analysis of the cultural experiences the thesis reflects. Permission to undertake such a thesis is granted only by the American studies steering committee.

Internships
Qualified graduate students in American studies can arrange internships with a number of local agencies, including the State Historical Society of Iowa, the Division of Historical Preservation, the University of Iowa Museum of Art, the Iowa Humanities Board, Living History Farm, the Herbert Hoover National Historic Site, and the Potosi Museum, Copenhagen. Other internships in Chicago can be negotiated with Hull House, Newberry Library, Church Council of Chicago, Spirit of American Studies, DePaul University Museum of American History, and the National Training Institute. With special permission, candidates conducting research during the spring or summer term may receive academic credit through 458-110. All independent study or 458-159 Material Culture Internship. Other internships in social agencies, government, or business also may be arranged.

Courses
Primarily for Undergraduates

- 458-000 Cooperative Education Internship (4.000)
- 458-330 American Values (4.000, 6.000)
- 458-353 American Studies (4.000, 6.000)
- 458-335 American Literature (4.000, 6.000)
- 458-338 American Film (4.000, 6.000)
- 458-340 Gender in American Literature (4.000, 6.000)
- 458-400 American Women's History (4.000, 6.000)
- 458-410 American Women's History (4.000, 6.000)
- 458-420 American Women's History (4.000, 6.000)
- 458-430 American Women's History (4.000, 6.000)
- 458-440 American Women's History (4.000, 6.000)
- 458-450 American Women's History (4.000, 6.000)
- 458-460 American Women's History (4.000, 6.000)
- 458-470 American Women's History (4.000, 6.000)
- 458-480 American Women's History (4.000, 6.000)
- 458-490 American Women's History (4.000, 6.000)
- 458-500 American Women's History (4.000, 6.000)
- 458-510 American Women's History (4.000, 6.000)
- 458-520 American Women's History (4.000, 6.000)
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- 458-600 American Women's History (4.000, 6.000)
- 458-610 American Women's History (4.000, 6.000)
- 458-620 American Women's History (4.000, 6.000)
- 458-630 American Women's History (4.000, 6.000)
- 458-640 American Women's History (4.000, 6.000)
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- 458-680 American Women's History (4.000, 6.000)
- 458-690 American Women's History (4.000, 6.000)
- 458-700 American Women's History (4.000, 6.000)
- 458-710 American Women's History (4.000, 6.000)
- 458-720 American Women's History (4.000, 6.000)
- 458-730 American Women's History (4.000, 6.000)
- 458-740 American Women's History (4.000, 6.000)
- 458-750 American Women's History (4.000, 6.000)
- 458-760 American Women's History (4.000, 6.000)
- 458-770 American Women's History (4.000, 6.000)
- 458-780 American Women's History (4.000, 6.000)
- 458-790 American Women's History (4.000, 6.000)
- 458-800 American Women's History (4.000, 6.000)
- 458-810 American Women's History (4.000, 6.000)
- 458-820 American Women's History (4.000, 6.000)
- 458-830 American Women's History (4.000, 6.000)
- 458-840 American Women's History (4.000, 6.000)
- 458-850 American Women's History (4.000, 6.000)
- 458-860 American Women's History (4.000, 6.000)
- 458-870 American Women's History (4.000, 6.000)
- 458-880 American Women's History (4.000, 6.000)
- 458-890 American Women's History (4.000, 6.000)
- 458-900 American Women's History (4.000, 6.000)
- 458-910 American Women's History (4.000, 6.000)
- 458-920 American Women's History (4.000, 6.000)
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- 458-960 American Women's History (4.000, 6.000)
- 458-970 American Women's History (4.000, 6.000)
- 458-980 American Women's History (4.000, 6.000)
- 458-990 American Women's History (4.000, 6.000)
Undergraduate Program

A Bachelor of Arts in anthropology provides a strong foundation for careers in anthropology and in a variety of fields involving work with people from cultures and subcultures different from one's own. These fields include the health care professions, biological sciences, law, economics, business, political science and government, social work, international affairs, and education.

The major requires at least 36 semester hours of course work in anthropology, including:

12 hours in the study of:
- Culture and Society
- Prehistory
- Human Origins
- Language and Human Behavior

In addition, students must take one course in archaeology (real or topical), one course in ethnography, and one course in social institutions. The remaining semester hours should be selected in consultation with the advisor.

Anthropology electives offer a wide range of choices including courses dealing with language and culture, economic anthropology, religious activity in folk and tribal settings, non-Western art, physical anthropology, human prehistory, human evolution, environment and culture, and urban anthropology.

Specialization is encouraged in the undergraduate program, which is designed to give students the background necessary for cross-cultural research. Course work is encouraged in related areas such as sociological linguistics, geography, art history, psychology, sociology, and economics. Students also are encouraged to participate in archaeological field and laboratory research and in physical anthropology research.

Honors Program

The honors program in anthropology is open to students with a minimum cumulative grade-point average of 3.20 both overall and in anthropology. In addition to the regular requirements for a major in anthropology, honors students complete a seminar or graduate-level course in anthropology or in a related department and do honors research. For more information, consult the honors advisor in the Department of Anthropology.

Minor

Students must complete 15 semester hours of credit in anthropology with a minimum grade-point average of 3.00, of which at least 12 of which must be taken at The University of Iowa in courses numbered 200 through 400 and above.

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 precludes 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 24 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 3 semester hours of course work 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, are eligible for admission to the M.A. program without thesis in anthropology. The following are the requirements for each M.A. program track:

General Anthropology

(Thesis or non-thesis)

132:102 Anthropological Data Analysis
132:171 Anthropological Theory
132:240 Seminar: Sociocultural Anthropology
132:258 Seminar: Archaeological Theory and Method
132:265 Seminar: Biological Anthropology

Total 15 s.h.

Students must also take at least one additional course in each of the following subject areas, for a total of 6 semester hours credit toward the degree:

- Ethnography
- Fieldwork
- Laboratory methods

Economic Anthropology

(Thesis only)

132:102 Anthropological Data Analysis
132:240 Seminar: Sociocultural Anthropology
132:265 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
113.157 The Sociology of the Third World
113.275 Development Policy and Planning in the Third World
113.343 Environment and Culture
112.160 Environmental Archeology
112.154 Comparative Prehistory

**Feminist Anthropology**

Thesis option:

112.241 Seminar: Sociocultural Anthropology
113.190 Feminist Perspectives on Biology and Culture
113.221 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
113.202 Seminar: Gender in Chinese Society
113.171 Anthropological Linguistics
113.142 Language and Culture
113.201 Seminar: Anthropological Theory
113.258 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, collection, and educational outreach development forms part of the graduate program.

**Required Courses**

**Anthropology**

113.240 Seminar Sociocultural Anthropology 3 s.h.
113.285 Seminar Biological Anthropology 3 s.h.
112.258 Seminar Archaeological Theory and Method 3 s.h.
112.068 Introduction to Anthropology 4 s.h.

Total 15 s.h.

**Museum Training**

24.05 Museum Laboratory Methods 2 s.h.
24.13 Principles of Exhibit Design 2 s.h.
24.115 Introduction to Museology 2 s.h.
24.112 Introduction to Conservation of Museum Objects 2 s.h.
24.14 Directed Studies and Projects 3 s.h.
24.146 Description and Organization of Materials 3 s.h.
24.146 Museum Internship 1 s.h.

Total 14 s.h.

**Suggested Electives**

24.102 Museum Technique
24.044 Preservation Methods

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

**Doctor of Philosophy**

Graduate training in anthropology at the Ph.D. level is designed to lead to professional competence in scholarly research and teaching. Students at The University of Iowa community may select specializations in all four subfields of anthropology:

-Archaeology
-Physical anthropology
-Sociocultural anthropology
-Linguistic anthropology

Teaching in a specialization is guided by a Ph.D. committee composed of members of the faculty. The student must work closely with the committee to plan a program that is consistent with the student's curricular interests.

The overall requirements are at least 72 semester hours of graduate coursework; students specializing in sociocultural anthropology must take 113.201 Seminar: Anthropological Theory; Demonstration of a reading knowledge of one foreign language; Ethnographic or archaeological specialization in a major geographic area (for example, North America, Mesoamerica, South America, Southern Asia, the Caribbean, Europe, Africa, approved by student's Ph.D. advisory committee); Specialization in a major and minor topical area; A written comprehensive examination in the student's area of specialization, and Preparation and oral defense of a dissertation.

The major topical area is the area of theoretical concentration and orientation for the dissertation. Kinds of topics that may serve as the major topical area or minor areas in sociocultural or linguistic anthropology include kinship or social organization, ethnography, economic anthropology, symbolic anthropology the anthropology of art, development anthropology, language and culture, religion, cultural ecology, and urban anthropology. Examples of possible major topical areas for students in anthropology include: prehistoric archæology, environmental anthropology; and dating methods. Examples of major topical areas for students in sociocultural anthropology include human sexuality, primate evolution, primatology, and primate behavior.

The comprehensive examination ordinarily is given when the student's course work is completed or nearly completed, after the language requirement has been satisfied, and before the student begins field work. All doctoral candidates are required to carry out original anthropological research. Ordinarily, students conduct field work as the basis for their dissertations; occasionally, however, a research proposal may be entitled using only library, documents, collections, or other source materials. All doctoral candidates are required to be adequately trained in techniques of gathering primary data: i.e. ethnographic, physical, or experimental field research.

**Field Research**

Opportunities are available for students to participate in anthropological field research in Central Mexico or at various sites in the Midwest. Under the direction of University anthropologists, students acquire skills in data recovery and interpretation techniques. Occasional field work in Southeast Asia is also available to graduate students in the paleoanthropology research program.

**Admission**

Applications for admission to the graduate program in anthropology are considered regardless of the field of their previous training. An applicant with an M.A. degree in another discipline may be considered for admission as a first-year graduate student. Admission to the department's graduate program may be at either the M.A. or Ph.D. level; however, full admission to the Ph.D. program depends on successful fulfillment of all the admission requirements.

Any student with an M.A. with thesis may apply for admission to the Ph.D. program. A student admitted with an M.A. in anthropology from another institution may proceed directly to a specialized Ph.D. program.

Applicants for admission to the graduate program must meet the general admissions requirements of the Graduate College (see "Graduate College" section of the Catalog) and are required to submit a completed University application form, transcripts of all previous undergraduate and graduate work, three letters of recommendation from individuals competent to judge the candidate's potential for graduate training, scores on the aptitude portion of the Graduate Record Examination (GRE) Application data and at least two written examples of previous work (for example, a term paper or an original experiment). Applicants with an M.A. degree from another university must submit a copy of their master's thesis; applicants who earned an M.A. without thesis or whose thesis is not yet complete should submit written copies of theses completed in graduate school.
It was also among the first art schools to join studio art with art history studies, reflecting the concept that the young artist benefits from a formal study of the traditions of art and a prospective historian learns 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 universities 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 not established only through 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 lecturers 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 degradations, 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 degree 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. Those are the major requirements of the undergraduate program in art history: specialization is discouraged. The art history major requires a two-hour introduction to studio work. The studio major requires development of a foundation in art history and in at least six areas of studio art. The aim of the joint curriculum is to give students a basic understanding of art and aesthetics; it does not focus on particular short-term styles or fashions.

Undergraduate Programs

Bachelors of Arts

The B.A. candidate in Art or Art History must earn at least 74 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.

Costs and Tuition Fees at the School of Art and Art History may not be counted toward student elections.

Studio Emphasis

The B.A. degree with studio emphasis requires the following courses and credits in art:

Art History:
Two courses selected from HJ 151, HJ 153, HJ 156 and HJ 158
Two additional courses exclusive of those courses listed above

Art Practice:
Two courses selected from the following:

Two beginning courses, one each from two different studio areas not taken to satisfy the requirements above.

Beginning courses in areas not listed above

Design
ID 221 Problems in Design 1-Fons and Structure
ID 222 Problems in Design 2-Forms and Function
ID 223 Lettering 1
ID 224 Graphic Design 2

Drawing
ID 125 Life Drawing 1

Painting
ID 126 Painting 1

Photography
ID 250 Photography 2

Printmaking
HM 130 Undergraduate Printmaking 1

Intermediate Courses
IP 191 Printing and Die-cutting
IP 192 Letterpress

Electives, selected only from courses that originate in the School of Art and Art History, must bring the true number of credits in history of art, studio, or art education combined to a minimum of 36 semester hours and may raise the total to a maximum of 50 semester hours. No more than 90 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.

Transfer students majoring in 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 62 semester hours of credit from courses taken outside the School of Art and Art History and 42 semester hours of credit in School of Art and Art History courses. In addition to the General Education Requirements (see the "College of Liberal Arts" section of the Catalog), major requirements listed below for the B.F.A. degree with studio emphasis. No 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 semester hours of the General Education Requirement in historical perspectives.

Honors
Art majors who are eligible to enroll in the College of Liberal Arts Honors Program must enroll in the School of Art and Art History. Honors students in art history must maintain a minimum grade-point average of 3.50 in art history courses and complete 3 semester hours of advanced courses in each a seminar and a senior thesis beyond the 18 semester hours of intermediate and advanced art history. The undergrader seminar requirement may be met by completion of a graduate seminar or supervised course of directed studies. The honors seminar requirement may be met by a research paper produced in a graduate seminar or a course of directed studies judged to be comparable in quality to graduate degree work.

Honors 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 student’s studio work. The statement may be based on the history of art, ideas of philosophy, and so forth written under the supervision of the student’s studio concentration area. 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, with a minimum grade-point average of 2.00. At least 3 of these hours must be in advanced studio courses taken at The University of Iowa. Advanced courses in the School of Art and Art History are those numbered 300 and above plus 314, 314H, 315, and 317.

Graduate Programs
Master of Arts in Art History
An M.A. student in art history is expected to acquire a broad general knowledge of art history as an academic and humanistic discipline, become familiar with major periods and monuments 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.
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
A minimum of 18 semester hours of directed studies for at least one semester of course work at a level equivalent to University of Iowa courses numbered 300 or above, taken after receiving the B.A., in each of the following areas of art history:

Ancient (to 1000 A.D.)
Medieval (500-1500)
Renaissance to Baroque (1500-1750)
Nineteenth century to modern
Asian
African
Scandinavian
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. The examination is usually given three times per year, at the beginning of each semester and the summer session. Students must take this examination at least within the second and two regularly scheduled examination dates following the semester in which they complete 21 semester hours of graduate work. The comprehensive examination may be taken only once. Course distribution for the M.A. in art history is as follows:
18:1204 2-Sem. Methodology of Art History and Criticism 5 s.h.
18:1240 2-Sem. Art History Seminars (with different instructors) 5 s.h.
18:1241 2-Sem. Art History course 14-16 s.h.
18:1242 2-Sem. Art History course 14-16 s.h.
Courses outside the school

"These seminars can be applied toward graduation if the student has earned a grade of B or higher in an undergraduate course in the area of study for which the seminar is offered. Students are required to have a total of 6 semester hours of studio or seminar credit for 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 12-18 semester hours of studio course work, with a minimum of 5 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 and interpret historical writings in its 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 3.0 grade-point average) of the fourth semester of a college or university language course.

The student must prepare either a written thesis or an oral presentation. Twelve semester hours of credit may be allowed, or a substantial research paper (approximately 20-40 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 specific preparation, and is recommended to the area of the student's specialization. To encourage individuality, the student is expected to concentrate course work in his/her major area of 15 credits. Acceptance into the area studies program does not curtail the student's obligation to the methodology, language, seminar, and research paper/thesis requirement. In consultation with the faculty advisor, the student takes appropriate courses in related areas offered by other departments. Faculty supervising the specific area are required to participate in the student's completion. The M.A. program concludes written exams in the major and includes a thesis or an essay specialized, 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, painting, multimedia, sculpture, and wood and metalworking and jewelry, multimedia and wood and metalworking. 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 36 semester hours of graduate coursework in the major subject of study, including three semester hours in the history of art, theory of art, and studio arts.

Coursework for the M.A. candidate by faculty review.

Studio majors may elect to take art history courses on a satisfactory/unsatisfactory basis.

Graduate students who have not had drawing at The University of Iowa must take at least one drawing course during the first year.

A student preparing to teach in both the studio art and art history areas may complete an M.A. in art history minor of 15 semester hours, including 120314 History of Modern Art, Art History and Criticism, and one other seminar. These hours are in addition to the University's graduate requirements for an art history major or minor. A concentration in art history must be taken in the graduate hours, thus satisfying 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.
- Certification in art education of 36 semester hours of graduate credit, including 18 semester hours of studio and art history in a ratio of two to one (either 12 semester hours of graduate credit in studio and 6 in art history, or 6 in studio and 12 in art history), 8 semester hours in graduate seminars in art education, and 6 semester hours to be specified after the student completes the program.

An 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 dissertation of the student's technical, aesthetic, and/or psychological approach) and, as the M.A. degree in studio, clearance by M.A. candidacy by faculty review.

Art education majors who elect to do a studio thesis and who have not had drawing at The University of Iowa are required to take one studio drawing course, selected from the school's regularly scheduled drawing courses, during the first year in residence.

Art education majors may elect to take a fine arts minor in a satisfactory/unsatisfactory basis.

Master of Fine Arts in Studio

The school offers the M.F.A. degree in a major in ceramics, design, drawing, painting, multimedia, sculpture, and wood and metalworking. The M.F.A. candidate must have a major 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 for M.F.A. candidacy by faculty review, and studio and written thesis. Theses credit 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 to be selected by the student in consultation 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., typified by the "Direct Entry into Ph.D. Program," below. Specific requirements for the Ph.D. degree include the following:

- All students must take formal examinations in art history and art history history, a grade-point average of at least 3.0 is required for admission and continuance in the program.

Students, including those with an M.A. in art history from another university, must submit an art history research proposal to the graduate committee at least three-fourths of the graduate art history faculty.

Students must complete a minimum of 72 semester hours of graduate level thesis credit toward this total, a maximum of 36 semester hours of work taken for the M.A. degree may be applied. Students must demonstrate, within the
first 21 semester hours of graduate work beyond the M.A. ability to write in art history writing in two proficiency foreign languages. The procedure for satisfying the Ph.D. language requirement is as explained in the description of the M.A. in art history program.

Students with the M.A. degree in a discipline other than art history must, at the graduate level, the distribution requirement for the M.A. or complete the M.A. comprehensive examination, submit a research paper in the field of art history to be approved by three-fourths of the graduate art history faculty. Complete two seminars in two different areas and meet the requirement for two foreign languages.

The University of Iowa's residence requirement for the doctoral degree must be met by enrollment at this University for a full-time student in each of the two semesters beyond the last 24 semester hours of graduate work.

Course requirements beyond the M.A. program outlined above are:

Two art history seminars (with two different instructors) 6 s.h.

Additional art history courses 18-20 s.h.

Courses outside the school 0-12 s.h.

Students must successfully complete a comprehensive examination (one major field six hours) and second field (three hours), selected by the student in consultation with the advisor and approved by the art history faculty. The minor field may be chosen in any area outside the school—for example, religion, history, literature, philosophy, or art.

The student must prepare a written dissertation consisting of a reading list of art history. The student must prepare six semester hours of credit toward the M.A. in art history courses for dissertation preparation. The topic of the dissertation must be presented to the faculty for approval. The student will present a final oral examination on the dissertation.

Direct Entry Into Ph.D. Program
A graduate student may, at any time, apply directly into the Ph.D. program without having acquired an M.A. degree. Students who wish to exercise this option must submit a significant research paper that meets the approval of three-quarters of the graduate art history faculty. Students may apply for this option twice. If the second application fails, they must complete the M.A. before again applying for admission into the Ph.D. program. All other requirements, including M.A. distribution, seminar, and foreign language, remain the same.

Doctor of Philosophy in Art Education

The Doctor of Philosophy in art education gives college teachers and researchers in art education and art supervisors in state departments of education and schools systems an opportunity to continue their inquiry and creative work in art history and art in studio art. The program is administered by the College of Education in liaison with the School of Art and Art History. Students must apply for admission to the College of Education.

Admission

Students must meet the general requirements for doctoral students in the Graduate College and have an M.A. degree in art education at The University of Iowa or an equivalent degree from an accredited college or university. Students who have course work deficiencies must register for pertinent coursework. Candidates must have completed one year of successful teaching experience in an elementary or secondary school to be eligible for the doctoral degree.

Application to the program must be accompanied by a representative portfolio of the candidate's work, consisting of 12 colored slide reproductions of art work and two examples of written work. Written work may consist of papers previously written for a course or may be new work. The portfolio should be submitted to the Office of Art History, 15 North Hall.

Degree Requirements

Students must complete at least 60 semester hours of graduate work beyond the M.A. The curriculum must be planned with the student's advisor and must include at least 15 semester hours in the School of Art and 24 semester hours in art education graduate seminars, 15 semester hours in a related area (e.g., aesthetics, anthropology, higher education, psychology, sociology), and 15 semester hours in thesis and field courses (75,206 and 75,306 Introduction to Research in Art Education). Students must take both oral and written comprehensive examinations. The written examination consists of an in-depth research problem to be completed within 15 days after which oral examination on the project is held. The research problem is assigned by the examining committee and the written portion of the examination is not intended to relate directly to the student's dissertation proposal.

Students also must complete a written dissertation for at least 12 semester hours and are expected to prepare a dissertation proposal and defend it before the dissertation committee. An oral examination on the dissertation is the Ph.D. final examination.

Graduate Admission: Studio

Admission procedures for graduate studio programs include a committee review of applications and all of the student's supporting material. Applicants should consult the school for deadlines and further requirements.

Ceramics, design, drawing, metalworking or jewelry, multimedia or video art, painting, or printmaking majors must submit slides and/or photographs of their work in their major field. Photography majors must submit from six to twenty original prints to the School of Art and Art History. Photography majors must submit a selection of 10 to 25 slides or prints. Studio applicants must submit at least two slides showing examples of their work in case 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 time, 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 in art 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 in two studio areas. All applicants must submit three letters of recommendation.

The Ph.D. program in art history and art education applications are due June 15 for students who wish to register for the fall semester, November 15 for students who wish to register for the spring semester, and April 15 for summer session. March 1 is the deadline for prospective art history students to apply for financial aid for the next academic year. Newly admitted students who do not register within two semesters of their admission must reapply. Students who attend for a limited time, then fail to register for a period of 36 months or more, must apply for readmission.

Assistantships and Scholarships

Assistants pay approximately $9,000 per academic year for 20 hours of departmental duties weekly are awarded to graduate students on a competitive basis. One-quarter-time assistantships also are available. The award of an assistantship endows the recipient to the Iowa resident tuition rate. Scholarships for partial or full tuition and excluding all departmental duties require at least a 3.0 cumulative grade average.

These financial aids usually are awarded to students who have been in residence for at least one semester, so that faculty members

76 Liberal Arts • Art and Art History
ASIAN LANGUAGES AND LITERATURE

Undergraduate Programs

The Department of Asian Languages and Literatures offers a program 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, business, and communications in America and Asia. The programs also provide an excellent foundation for graduate study in literature, history, art, religion, political science, geography, and sociology. The department urges undergraduate majors to study in Asia as early in their careers as possible, and every effort is made to loan travel grants for students 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 politics and societies of Asia. Courses are taught by area specialists in many departments. Students are encouraged to take courses in a number of disciplines and to major in one area of Asia.

Students majoring in Asian Studies must complete 30 semester hours of courses in Asia, distributed as follows:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>39:18-11</td>
<td>Second-Year Chinese</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>39:33-34</td>
<td>Second-Year Hindi</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>39:10-11</td>
<td>Second-Year Japanese</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>39:23-24</td>
<td>Second-Year Sanskrit</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

At least one course on the history of the area whose language they are studying, chosen from:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>39:13 History of Ancient and Traditional India</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:14 Imperialism and Modern India</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:15 Traditional China</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:16 Modern China: 1800 to Present</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:15 Premodern Japan</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:14 Modern Japan</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Other courses on Asia, 100 level or above:

- For those taking Chinese or Japanese 15 s.h.
- For those taking Hindi 15 s.h.
- For those taking Sanskrit 15 s.h.

- Many students find that an Asian studies major is conveniently combined with a major in history, political science, art history, religion, business, anthropology, or another discipline.

Major in Chinese, Hindi, Japanese, or Sanskrit

This major is intended for students who wish to acquire an ability to speak, understand, read, and write Chinese, Hindi, or Japanese, or to read Sanskrit, and to gain knowledge of the literature of China, Japan, or South Asia. Majors are required to complete 30 semester hours of advanced courses, distributed as below:

Students of Chinese

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>39:10-11</td>
<td>Second-Year Chinese</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>39:95-96</td>
<td>First-Year Chinese</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>39:141 Chinese Literature: Poetry</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:42 Quantum Literature: prose</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Students of Hindi

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>39:15-16</td>
<td>Second-Year Hindi</td>
<td>8 s.h.</td>
</tr>
<tr>
<td>39:14-15</td>
<td>First-Year Hindi</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>39:13-14</td>
<td>First-Year Hindi</td>
<td>6 s.h.</td>
</tr>
</tbody>
</table>

- With the approval of the major advisor, students may substitute 6 semester hours of 200-level courses in South Asian studies for second-year Hindi.

Students of Japanese

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>39:10-11</td>
<td>Second-Year Japanese</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>39:105-106</td>
<td>First-Year Japanese</td>
<td>12 s.h.</td>
</tr>
<tr>
<td>39:141 Traditional Japanese Literature in Translation</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:142 Modern Japanese Fiction in Translation</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Students of Sanskrit

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>39:23-24</td>
<td>Second-Year Sanskrit</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>39:196-197</td>
<td>First-Year Sanskrit</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>39:130-131</td>
<td>First-Year Sanskrit</td>
<td>6 s.h.</td>
</tr>
<tr>
<td>39:145 Indian Religious Texts</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Minor in Asian Languages

A minor in Asian Languages requires a minimum of 15 semester hours with a grade-point average of 2.00. Of the 15 semester hours, at least 12 must be taken at The University of Iowa in advanced courses. Students may earn minors in Chinese, Hindi, Japanese, or Sanskrit. The following courses are considered advanced for the minor.

Chinese

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>39:10 Second-Year Chinese</td>
<td>6 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:11 Second-Year Chinese</td>
<td>6 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Hindi

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>39:32 Second-Year Hindi</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:34 Second-Year Hindi</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:184 Third-Year Hindi</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Japanese

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>39:10 Second-Year Japanese</td>
<td>6 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:101 Second-Year Japanese</td>
<td>6 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Sanskrit

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>39:10 Sanskrit</td>
<td>4 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:23 Second-Year Sanskrit</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:394 Second-Year Sanskrit</td>
<td>3 s.h.</td>
<td></td>
</tr>
<tr>
<td>39:181 Third-Year Sanskrit</td>
<td>3 s.h.</td>
<td></td>
</tr>
</tbody>
</table>

Minor in Asian Studies

A minor in Asian Studies requires a minimum of 15 semester hours with a grade-point average of 2.00. Of the 15 semester hours, at least 12 must be taken at The University of Iowa in advanced courses. Students may earn minors in Chinese, Hindi, Japanese, or Sanskrit. The following courses are considered advanced for the minor. Students are encouraged to take 39:15 or 39:39 for a minor in their intended course.

Honor Students

Students with a grade-point average of 3.20 or above are encouraged to enroll in the College of Liberal Arts and Sciences Program. With the permission of the departmental chair and the faculty sponsor selected from Asian specialists in any department, students may enroll for 39:104 Honor Tutorial and 39:105 Senior Honors Thesis. To receive a B.A. with honors, students must successfully complete an acceptable thesis based on original research in an appropriate area of Asian studies.
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 major rule of entrance 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 "College of Business Administration" section of the Catalog).

Graduate Programs

Master of Arts in Asian Civilizations

The graduate programs in Asian civilizations provides preparation for doctoral study in a variety of disciplines; it is also of interest to students with nondegree career plans for whom graduate-level work in an Asian language and culture would be useful. Students in professional programs are encouraged to consider working toward a concurrent degree in Asian Civilizations. The Master of Arts in Asian Civilizations requires a minimum of 30 semester hours of approved course work, of which must be taken in residence at The University of Iowa. By the end of the first semester in residence, students propose a plan of study developed in consultation with the advisor. The courses of study must conform to one of the following: (1) the interdisciplinary major program, (2) Chinese literature, Chinese linguistics, Chinese language teaching, interdisciplinary studies in Chinese, Japanese literature, Japanese language and civilization, or interdisciplinary studies in Japanese, Sanskrit language and literature, Hindi and Sanskrit literature, and Sanskrit, Asian studies.

All students must maintain a 3.00 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 competencies in Chinese, Japanese, Hindi, or Sanskrit, defined generally as corresponding to the fourth-year level of language course work in Chinese or Japanese and the third-year level in Hindi and Sanskrit.

Admission

Applicants for graduate admission must meet the general admission requirements of the College of Graduate Studies, except that a minimum grade-point average of 2.25 is required for conditional admission. 3.00 for regular admission. In addition, applicants must submit a writing sample in English—such as a term paper, seminar paper, or graduate thesis—to the Department of Asian Languages and Literature.

Both foreign and nondegree graduate applications requesting financial support for the following academic year are due February 1. Nondegree applications for admission without support are accepted until July 15 for the fall semester or December 1 for the spring semester. Foreign applications for admission without support are accepted until February 1 for the fall of semester and October 1 for the spring semester. Conditions of aid take the Graduate Record Examination (GRE) General Test early, since an admissions decision cannot be made until scores are received.

Financial Aid

The Department of Asian Languages and Literature has available two study of Japanese and graduate students in Asian civilizations teaching assistantships and research assistantships. At the time of application, students should request information about special requirements for teaching assistantships.

Currently continuing undergraduate and graduate students are eligible to compete for summer scholarship aid for intensive language study provided by the Stanley-University of Iowa Foundation Support Organization. Scholarships consist of a cash grant of $2,100.

Students selected to participate in the Iowa Critical Languages Program receive special financial support. Undergraduate students of Asian languages have available support from two special resources:

- Presidential Scholarships for Study Abroad in the amount of $4,000 may be used to help advance the costs of study abroad. Up to twenty such scholarships are available each year, and proposals for study in non-Western European countries are especially encouraged.
- Stanley Scholarships for International Research and Study may carry stipends as high as $2,000 to support summer study projects and study abroad away from the University of Iowa campus. Graduate students who combine work in modern language and culture with an advanced level of interdisciplinary or professional study are encouraged to apply for Graduate Fellowships in Foreign Language Study awarded by the Center for International and Comparative Studies. The fellowships offer academic year and summer study options as well as full or partial tuition support. They may be held jointly by American citizens.

Special Programs and Activities

Iowa Critical Languages Program

The Iowa Critical Languages Program prepares students to teach 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 Iowa certification at the secondary level. Applicants must be U.S. citizens and residents of the United States. They may already hold a baccalaureate degree and teaching certification.

Through a grant from the Ford Foundation, participating students receive scholarships for a year of study abroad and two summers of intensive language study in programs recognized for their excellence in foreign language training. Participants in the program are obliged to teach in a cooperating Iowa school district for at least three years after graduation. 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 personal 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 lists of information about study-abroad opportunities.

The University's membership in the American Program of Indian Studies and the Chinese-Divisional Language and Study Program at the University of Iowa provides opportunities to study language and culture in universities in Peking, Hangzhou, and Naijing. Special note is the Chinese Business and Society Program at the University of Iowa's International Business and Economics Department in which students may study Chinese business practices and study the language and culture of China and foreign countries.

The UI-NSLIJ Exchange allows Iowa students to study in Japan for one semester while attending the Center for Japanese Studies at Nihon University in Nagoya, Japan. The center also offers two intensive Japanese language instruction at all levels and courses in a wide variety of disciplines in Japanese studies taught in English. Home students may be enrolled for students who wish to experience life in a Japanese family.
Astronomy

See "Physics and Astronomy."

BIOCHEMISTRY

Head: Alan G. Goodridge

Undergraduate degrees offered: B.A., B.S., in Biochemistry
Graduate degrees offered: M.S., Ph.D. in Biochemistry

Biochemistry is the study of the basic chemical processes that occur in all living systems. Currently one of the most active sciences, it also provides a foundation for other biosciences.

Biochemists work generally in laboratories and/or classrooms. Those with the bachelor's degree are often employed as research assistants in industry, government, education, and health service, or in secondary school teaching, for which certification is required.

Biochemists with advanced degrees—usually for doctorate—pursue teaching, research, and/or administrative careers in universities, medical schools, hospitals, private research agencies, and government laboratories; and in the food, drug, cosmetics, chemical, petroleum, and allied industries as well as in biotechnology companies.

Undergraduate Programs

The department offers both the Bachelor of Science and the Bachelor of Arts. Requirements are outlined below. Students choose the advanced science electives to supplement biochemical studies or as part of a minor or a double major program.

Typical courses are 37.128 Fundamental Genetics or 22.07 Introduction to Computing with Fortran. Courses need not be examined above 100 to qualify, especially courses in the mathematical sciences.

Bachelor of Science

The B.S. degree program in biochemistry prepares students to work as biochemists in positions that require no further formal training. It is also an excellent background for graduate study in biochemistry and related fields or for professional degree work in the health sciences.

In addition to the College of Liberal Arts General Education Requirements, the Bachelors of Science degree in biochemistry requires MATH 105 semester hours earned for courses as follows:

22.05-26 Calculus I-II 8 s.h.

22.05-26 Engineering Calculus I-II 8 s.h.

22.17-18 Introductory Physics I-II 8 s.h.

22.31 Principles of Chemistry I 3 s.h.

22.11 Introduction to Biochemistry 5 s.h.

22.15 General Microbiology 5 s.h.

63.147 Survey of Immunology 4 s.h.

72.130 Human Physiology 4 s.h.

Other biological discipline

4.12 Principles of Chemistry I 3 s.h.

4.14 Principles of Chemistry II 3 s.h.

4.16 Principles of Chemistry Lab I 2 s.h.

4.21-122 Organic Chemistry I 3 s.h.

4.13 Physical Chemistry I 3 s.h.

4.132 Physical Chemistry II 3 s.h.

4.14 Organic Chemistry Laboratory 5 s.h.

99.01 Introduction to the Field of Biochemistry 1 s.h.

99.101 Technical Writing in Biochemistry 1 s.h.

99.102 Undergraduate Seminar (1 semester hour of 99.101 and 2 semester hours of 99.102 are required.) 3 s.h.

99.120 Biochemistry and Molecular Biology I 4 s.h.

99.121 Biochemistry and Molecular Biology II 4 s.h.

99.146 Experimental Biochemistry 4 s.h.

99.152 Research Independent Study (may be taken for hours at least 6 s.h.) 2 s.h.

Advanced science electives 15 s.h.

*a* GPA of 3.0 or higher required if grades of A or B have been earned in 99.120, 99.130, and 99.146, or by consent of advisor and instructor.

Bachelor of Arts

In addition to the College of Liberal Arts General Education Requirements, the B.A. degree in biochemistry requires 65 semester hours earned in courses as follows:

22.05 Mathematics for the Biological Sciences 4 s.h.

22.16 Calculus for the Biological Sciences 3 s.h.

22.11-12 College Physics 5 s.h.

31.3 Principles of Animal Biology 5 s.h.
Biology

Class: John R. Wenzler

Undergraduate Programs

The undergraduate degree programs in biology teach science, especially the science of living organisms. The courses of study prepare students for careers in biology, premedicinal professions, and related fields. Lectures and laboratory courses offered by the department also serve students in other fields, including psychology, anthropology, and sociology, as well as students in premedical schools who can have an interest in biological science.

Graduate degrees offered: M.S., Ph.D. in Biology

Combined Programs

Students, especially those in the B.A. program, may include courses from other disciplines, such as business, premed, psychology, or journalism. Thus preparing for one of the various vocations in which biotechnology has an impact.

Graduate Programs, Facilities, Courses

See “Biology” in the College of Liberal Arts section of the Catalog for description of the department’s graduate programs and facilities, its literary master, and course listings.

Undergraduate Programs

The undergraduate degree programs in biology teach science, especially the science of living organisms. The courses of study prepare students for careers in biological sciences, health-related professions, and related fields. Lectures and laboratory courses offered by the department also serve students in other fields, including psychology, anthropology, and sociology, as well as students in premedical schools who can have an interest in biological science.

Graduate degrees offered: M.S., Ph.D. in Biology

Teacher Certification

Biology majors, especially those in the B.A. program, may qualify for teacher certification by taking additional courses in teacher education. Students should consult with an advisor in the College of Education.

Honors Program

Qualified students may earn the B.A. degree in biology. They must be enrolled in the College of Liberal Arts. Honors Program and must do special work in 95.155 Research. Independent Study Honors students present their research results in a report written in the form of a literary article and in an oral report presented at a special open departmental seminar.

Required Courses in Biology

1. 55 Principles of Animal Biology 4 s.h.
2. 57 Principles of Botany 4 s.h.
3. 525 Principles of Environmental Biology 4 s.h.
4. 528 Principles of Ecology 4 s.h.
5. 562 Principles of Genetics 4 s.h.
6. 563 Principles of Microbiology 4 s.h.
7. 565 Principles of Immunology 4 s.h.
8. 566 Principles of Virology 4 s.h.

Biology Major

Biology majors must complete the following courses in addition to the biology major:

1. 525 Principles of Environmental Biology 4 s.h.
2. 528 Principles of Ecology 4 s.h.
3. 562 Principles of Genetics 4 s.h.
4. 563 Principles of Microbiology 4 s.h.
5. 565 Principles of Immunology 4 s.h.
6. 566 Principles of Virology 4 s.h.

Biology Minor

Biology minors must complete the following courses in addition to the biology minor:

1. 525 Principles of Environmental Biology 4 s.h.
2. 528 Principles of Ecology 4 s.h.
3. 562 Principles of Genetics 4 s.h.
4. 563 Principles of Microbiology 4 s.h.
5. 565 Principles of Immunology 4 s.h.
6. 566 Principles of Virology 4 s.h.

Electives in biology, botany, microbiology, and geology (6 credits)

Total 34 s.h.

These courses are cross listed in the biology department.

The 11 elective semester hours in biology must be in courses numbered 100 or above and intended primarily for science students. Also, the elective credit may not include more than 3 semester hours in biology and 12 semester hours in science.

Applicants for honors should carry additional courses in elementary preparatory subjects, while preparing for science majors, and may include the required courses in courses listed below. Students should choose elective courses in consultation with their advisors.

Required Courses in Other Disciplines

1. 431-13 Principles of Chemistry 4 s.h.
2. 432-13 Principles of Chemistry 4 s.h.
3. 563-12 Organic Chemistry I 4 s.h.
4. 563-21 Organic Chemistry II 4 s.h.
5. 591-12 Principles of Physics 4 s.h.
6. 592-12 Principles of Physics 4 s.h.
7. 525-12 Introduction to Chemistry 4 s.h.
8. 525-22 Calculus I 4 s.h.
9. 525-32 Calculus II 4 s.h.
10. 525-42 Calculus III 4 s.h.
11. 525-52 Calculus IV 4 s.h.
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

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>21:105 Introduction to Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>21:313 Principles of Animal Biology</td>
<td>5 s.h.</td>
</tr>
<tr>
<td>21:316 Functional Genetisc</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>21:321 Evolution</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>An investigative laboratory course</td>
<td></td>
</tr>
<tr>
<td>21:102 Fundamental Genetics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>21:310 Fundamental Genetics Laboratory: Molecular Genetics of Yeast</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>21:312 Endocrinology Laboratory</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>21:106 Field Ecology</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Electives in biology, botany, microbiology or paleontology</td>
<td>11 s.h.</td>
</tr>
</tbody>
</table>

Total: 28-31 s.h.

*These courses are cross listed in the biology department.

*Students who elect more than 3 semester hours in investigative laboratory courses may apply those extra hours toward elective credits.

or 11 semester hours of elective credit, up to 5 may be earned in other natural sciences or mathematics. 3 of these 6 semester hours in natural science may be in 21:104 Introduction to Philosophy of Science, or 21:132 The Scientific Revolution, or 21:520 Science in the Modern Age. Other restrictions and limitations in courses to satisfy the elective credit requirement apply as for the B.S. degree.

Required Courses in Other Disciplines

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>41:15 Principles of Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>41:16 Principles of Chemistry II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>41:17 Organic Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>90:110 Biochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>90:120 Biochemistry and Molecular Biology I</td>
<td>1 s.h.</td>
</tr>
<tr>
<td>21:25 Plant Biochemistry</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>21:91-111 College Physics I-III</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>25:17-18 Introduction Physics I-III</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>31:106 Introduction to Biostatics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>31:20 Introduction to Statistics in Psychology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>225:148 Intermediate Statistical Methods</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>or 225:25 Calculus I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>or 225:16 Calculus for the Biological Sciences</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>or 225:35 Engineering Calculus I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>or 225:45 Accelerated Calculus I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>8W10 Expository Writing (or equivalent)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Suggested Course Schedule for Freshman Year

The following schedule is recommended for students seeking either the B.S. or B.A. degree in biology.

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>21:310 Principles of Chemistry I or 101:33 Chemistry (4-13)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>21:112 Biology (2-1)</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>Mathematics</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>21:313 Principles of Animal Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>or 11 semester hours of elective credit, up to 5 may be earned in</td>
<td>11 s.h.</td>
</tr>
<tr>
<td>21:104 Introduction to Philosophy of Science, or 21:132 The</td>
<td></td>
</tr>
<tr>
<td>Scientific Revolution, or 21:520 Science in the Modern Age. Other</td>
<td></td>
</tr>
<tr>
<td>restrictions and limitations in courses to satisfy the elective</td>
<td></td>
</tr>
<tr>
<td>credit requirement apply as for the B.S. degree.</td>
<td></td>
</tr>
</tbody>
</table>

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 designed primarily for nonmajors. Biology courses taken at other institutions or taken on a pass/fail basis do not apply toward requirements for the biology minor.

Honors

The honors program in biology gives the superior student membership in a small, active group of undergraduate off-campus interests. Honors students associate with one of the department's research groups, gaining an introduction to the pursuit of practicing scientists' experiments, discussions of current research, work on specialized topics, and attendance at research lectures.

Students in the College of Liberal Arts 'Honors Program may earn 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 21:196. Students who wish to study abroad or involve themselves in research, at least 2 semester hours in 21:197 Honors Field Readings in Biology, and at least 1 semester hour in the honors seminar in Biology or Biophysics and life science seminar. Three of the remaining 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 3.29 grade-point average overall and at least a 3.29 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 21:199 Introduction to Research to acquaint students majoring in biology with the nature of practicing scientists' work through association with one of the department's research groups in experiments, discussion of current research, study of specialized topics, and attendance at research lectures.

Graduate Programs

The graduate programs in the department are designed to train scientists who can participate in research in vertebrate, invertebrate, educational, or governmental environments, and who are adepts in problem-solving and research requiring knowledge of biology. In the last two decades, while PhD graduates of the department have taken positions ranging from being appointed to college or university faculties, while most of the others are in research hospitals. A substantial number of students completing their training with an M.S. degree have obtained technical or professional positions. Prior to registration in August, all new graduate students in biology take a correspondence examination covering various topics in the areas of biology, developmental biology, genetics, cell biology, physiology, psychology, and ecology. All students will be placed in a research tasking of fundamental questions addressed to understanding the life universe. Areas of emphasis include: molecular biology, genetics, developmental biology, cancer biology, cell biology, taxonomy, systematics, physiology, and ecology.
Botany • Liberal Arts 89

37:154 Topics in Zoology 1.5 a.h.
Topics on topics of current interest in zoology. Optional grading system. Consent of instructor required.
37:155 Neurobiology of Learning and Memory 3.0 a.h.
Topics on recent research in the neurobiology of learning and memory. Consent of instructor required.
37:156 Population Genetics and Evolution 3.0 a.h.
Topics on recent research in evolutionary population and theoretical population genetics. Consent of instructor required.
37:160 Scenarios of Cell Structure and Function 3.0 a.h.
Scenarios of scenarios of current research on cell structure and function. Optional grading system. Consent of instructor required.
37:161 Topics in Cell Walls 1.5 a.h.
Topics on recent research on cell walls and their role in plant physiology and development. Consent of instructor required. Grading system: S, U.
37:166 Topics in Developmental Biology 1.5 a.h.
Readings, reports, and discussions of seminal topics in developmental biology. Consent of instructor required.
37:167 Patterns Formed in Development 2.0 a.h.
Principles of pattern formation and development of patterns in both multicellular and unicellular organisms. Consent of instructor required.
37:168 Museum Research Laboratory 3.0 a.h.
Independent and collaborative research in problems in biology. Topics agreed upon between instructor and students. Consent of instructor required.
37:169 Museum Reading (Bloody) 3.0 a.h.
Topics agreed upon between instructor and students. For human candidates. May be repeated. Consent of instructor required.
37:170 Senior Seminar in Biology 3.0 a.h.
Consent of instructor required. Prerequisite: 37:115 or 37:116. May be repeated. Consent of instructor required. Grading system: S, U.
37:214 Seminar: Ecological Writing and Reading 0.5 a.h.
Sections in 2214.
37:215 Seminar: Ecological Seminar 0.5 a.h.
Lectures, discussions, seminars on selected topics in ecological writing. Consent of instructor. Prerequisite: 37:115 or consent of instructor. Consent of instructor required. Grading system: S, U.
37:216 Seminar: Ecological Seminar 0.5 a.h.
Weekly lectures on current research, detailed topics.
37:218 Seminar: Marine Microtechniques 0.5 a.h.
Lectures and laboratory or methods on marine microorganisms, including protozoa, echinoderms, cnidarians, and nematoda. Consent of instructor. Prerequisite: 37:115 or consent of instructor. Consent of instructor required. Grading system: S, U.
37:223 Seminar: Endocrinology 0.5 a.h.
Topics on recent research interest in basic physiology and biochemistry of hormone action. Consent of instructor required. Grading system: S, U.
37:228 Fundamentals of Tropical Biology: An 0.5 a.h.
Introductory course for majors sponsored by the Organization for Tropical Studies. Involves 12 weeks spent in the tropics, selected from Latin America, the Caribbean, and Asia. Consent of instructor. Consent of instructor required. Grading system: S, U.
37:233 Seminar: Ecology 2.0 a.h.
Current research in ecology. Prerequisite: 37:120 or consent of instructor.
37:235 Current Topics in Evolutionary Biology 1.5 a.h.
Current topics in evolutionary biology. May be repeated. Consent of instructor required. Grading system: S, U.
37:245 Developmental Neuroanatomy 2.0 a.h.
Course requires consent of instructor. Prerequisite: 37:120 of equivalent.
37:260 Developmental Genetics 2.0 a.h.
Developmental genetics. Lectures, readings, and assignments in the workshop. Consent of instructor. Prerequisite: 37:120.
37:282 Seminar in Cellular and Molecular Biology 1.5 a.h.
Biological topics of current interest in the workshop. Consent of instructor. Prerequisite: 37:120.
37:283 Seminar in Ecology and Evolutionary Biology 2.0 a.h.
Biological topics of current interest in the workshop. Consent of instructor. Prerequisite: 37:120.
37:287 Independent Study in Biology 3.0 a.h.

Undergraduate Programs

Botany

Bachelor of Science

In addition to the General Education Requirements of the College of Liberal Arts, students seeking the B.S. degree are required to take the following.

Botany and Biology Requirements

2.0 Introduction to Botany 4.0 a.h.
3.0 Principles of General Biology 5.0 a.h.
2.128 Fundamental Genetics 3.0 a.h.
2.123 Plant Anatomy 3.0 a.h.
2.130 Land Plants: An Evolutionary Survey 4.0 a.h.
2.135 Algae and Fungi 4.0 a.h.
One course from each of the following three areas.

Taxonomy

2.131 Plant Taxonomy 4.0 a.h.
2.133 Summer Flora 3.0 a.h.
1.105 Plant Taxonomy 5.0 a.h.

Physiology

2.101 Plant Physiology 4.0 a.h.
2.110 Plant Physiology 4.0 a.h.
2.114 Cellular Plant Physiology 3.0 a.h.
37:165 Cell Physiology 4.0 a.h.

Ecology

2.111 Plant Ecology 4.0 a.h.
2.138 3.0 a.h.
2.141 Field Ecology 4.0 a.h.
2.150 Tutorial Undergraduate Research 2.0 a.h.
2.196 Honors Laboratory Research 1.5 a.h.

An Investigative laboratory or field course

Chemistry Requirements

4.1 Principles of Chemistry I 3.0 a.h.
4.1 Principles of Chemistry II 3.0 a.h.
4.1 Principles of Chemistry Lab 3.0 a.h.
4.1 Chemistry 3.0 a.h.
37:165 Organic Chemistry I 3.0 a.h.

Botany

Biochemistry and Molecular Biology 4.0 a.h.
4.123 Plant Biochemistry 3.0 a.h.

Mathematics Requirements

22:410 Mathematics for the Biological Sciences 4.0 a.h.
ZM:16 Calculus I for Biology 3.0 a.h.
37:251 Calculus I (or equivalent) 4.0 a.h.

22:411 Calculus for the Biological Sciences 4.0 a.h.

22:412 Calculus II for the Biological Sciences 4.0 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

3.0 Introduction to Botany 4.0h
3.73 Principles of Animal Biology 5.0h
2.108 Fundamental Genetics 3.0h
2.113 Plant Anatomy 4.0h

One course from each of the following four groups (17-20 semester hours), and one additional 100-level course in botany or cognate sciences.

Physiology and Cell Biology

2.086 Plant Physiology 4.0h
2.117 Plant Physiology 4.0h
2.114 Cellular Plant Physiology 4.0h
2.125 Plant Biochemistry 5.0h
3.107 Cell Physiology 4.0h

Vascular Plant Diversity

2.400 Land Plants: An Evolutionary Survey 4.0h
2.401 Plant Taxonomy 4.0h
2.511 Summer Field 3.0h
2.520 Paleobotany 4.0h
1.165 Plant Taxonomy 5.0h

Ecology and Evolution

2.411 Principles of Zoology 4.0h
2.501 Evolution 3.0h
2.512 Field Ecology 4.0h

Biological and Nonvascular Plants

2.362 Algae and Fungi 4.0h
2.106 Bryology/Ichthyology 4.0h
2.112 Field Mycology 3.0h

Chemistry Requirements

4.33 Principles of Chemistry I 3.0h
4.34 Principles of Chemistry II 3.0h
4.4 Principles of Chemistry Lab 2.0h
4.211 Organic Chemistry I 3.0h
4.122 Organic Chemistry II 3.0h
95.411 Biochemistry 3.0h
95.420 Botany and Molecular Biology I 4.0h
95.425 Plant Biochemistry 3.0h

Mathematics Requirements

One of the following courses (students should consult with their advisor).

2.228A-15 Mathematics for the Biological Sciences 4.0h
2.228A-16 Calculus for the Biological Sciences 3.0h
2.228X-19 Elementary Functions 3.0h
2.228X-25 Calculus I 4.0h

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. degree, honors students must:

- Maintain an overall grade-point average of 3.25.
- Maintain a minimum grade-point average of 3.5 in all botany and biology courses.
- Complete 4-6 semester hours of honors course work that includes a minimum of 4 semester hours in 2.800 Honors Research.

Submit a written research proposal and a written research report (honors thesis), which have been approved by the student's research supervisor, to the botany honors advisor; and

Submit the honors thesis 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 2.25, at least 12 of which must be taken at The University of Iowa in courses numbered 2.100 and above.

Graduate Programs

An advanced degree enhances career opportunities in botany. The department offers advanced degree work in anatomy, botany, cell biology, ecology, genetics, plant molecular biology, development and morphogenesis, mycology, paleobotany, pathology, physiology, plant biochemistry, and taxonomy. Graduate training frequently involves interdisciplinary study that requires some coursework in cognate departments. Each graduate student is assigned a faculty guidance committee to help him or her set educational goals and plan the course requirements necessary to meet them.

Master of Science

The botany department offers two distinct M.S. degree programs, one in thesis and one without. The M.S. with thesis option places greater emphasis on independent research and less on formal coursework. It is intended primarily for students who have a strong course background in botany or biology.

Master's Degree without Thesis

Each student must:

- Submit a program of study approved by a guidance committee composed of three members of the graduate faculty, one of whom may be from another department. The program for the thesis must be prepared during the first semester in residence as a graduate student. Complete at least 34 semester hours of graduate courses in botany or supporting areas as approved by the guidance committee; at least 12 of these hours must be at the 500-level; and 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 as all courses—other than research—completed prior to the final examinations.

- Pass a written examination during the term in which the student is in graduate status. (Individual committee members may opt not to give a written examination in their areas.) Following a week or an oral examination, these examinations cover the student's courses and research experience.

Master's Degree with Thesis

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 guidance committee; 3 semester hours of research and thesis (3.225 and 3.220) are required; additional research hours may be taken, but no more than 9 may be counted toward the 34-semester-hour degree requirement.

- Achieve a grade-point average of 3.00 on all courses other than the 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 graduate status.

Doctor of Philosophy

The Ph.D. is primarily a research degree. The student must conduct original research under the supervision of a major professor and value this thesis to be worthy and successfully defended prior to final examinations commencing. In addition, the student must complete at least 72 semester hours of graduate course work and research as prescribed by the guidance committee. Hours earned for the master's degree may be counted toward the 72-semester-hour minimum. The guidance committee also may require that course work beyond the 72 semester hours be taken to meet specific proficiency requirements (e.g., language or 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. to a guidance committee during the first semester in residence as a Ph.D. candidate; the program must be approved by the guidance committee.

Fulfill all course work requirements of the programs above; changes may be made only with the formal (written) approval of the guidance committee.

Complete an initial research proposal within two or three semesters after admission to the Ph.D. program (i.e., pass M.S.), the proposal, which should outline the specific objectives, significant, and methodology of the chosen research project, should gain written acceptance from members of the guidance committee; subsequently, copies of the approved proposal must be distributed to all faculty members of the botany department.

Give an oral presentation of the proposed research work to members of the botany department within a six-month period following acceptance of the initial research proposal; the candidate is thereby eligible for the semester hour of credit under 2221 Seminar; Botany (see section on botany seminars).

Pass a written and oral comprehensive examination when formal course work has been completed or nearly completed.

Submit a doctoral thesis based on original research to the final examination committee for review.

Present the results of the thesis research at a meeting of the botany department, preferably before the thesis defense.

Pass the final doctoral examination, which is primarily a defense of the ideas, methods, and significance of the doctoral thesis.

Graduate Admission

University Requirements

An application form 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 or university attended and scores on the Graduate Record Examination (GRE) General Test (verbal and quantitative parts) should be submitted with the application. A valid B.S. or B.A. degree from an accredited institution is required.

Departmental Requirements

Master's Degree Program

A cumulative grade point average of at least 3.00 on all college-level work attempted,

A GRE General Test score (verbal plus quantitative) of 1100 or greater, and

Three letters of recommendation.

Provision: The numerical requirements are not absolute. For example, a student may compensate for a GRE General Test score slightly below 1100 with a high level of academic achievement.

Students applying for admission to the master's program in botany must have a bachelor's degree in one of the biological sciences. Students with a bachelor's degree in other areas will need to register as special students (S) and make up the equivalent of the department's bachelor's degree program prior to consideration for admission. In addition to the botany and biology courses listed in the undergraduate program, special students must complete the chemistry and mathematics requirements.

Mathematics and students should consult the department chair before attempting to set up a program for special students.

Ph.D. Program

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, and

A master's degree in botany or a biological science.

Provision: The numerical requirements are not absolute. For example, a student may compensate for a GRE General Test score slightly below 1200 with a high level of academic achievement, especially during the M.S. program.

Special Provision for Foreign Students

Admission for foreign students is based on a quantitative score on the GRE General Test of 1200 or greater and a Test of English as a Foreign Language (TOEFL) score of 550 or greater. These scores may be used in place of the total GRE requirement, as outlined above.

Financial Aid

New students wishing to apply for assistantships or fellowships may submit an application for graduate awards form when applying for admission to graduate study. The application form is 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 and fellowships are reviewed by the Graduate College, upon recommendation by the department faculty.

The kinds and amounts of support for graduate study in botany, as in all departments, vary from year to year, depending on the availability of funds. The types of appointments and support for teaching assistantships and research assistantships (one-half-time or one-quarter-time), summer research fellowships, graduate research assistantships, and other sources of support:

- Teaching and research assistantships. Appointment to an assistantship requires that the student provide approximately 20 hours of work per week. Appointment pay resident tuition rates.
- Summer research fellowships. These are available for outstanding graduate students. Recipients are expected to do full-time research, or any two-month period between May and mid-August and to enroll for at least 1 semester hour of credit in 2225 Botany. Awards are made on a competitive basis.
- Genetics research assistantships. These are awarded by the interdepartmental genetics program from University funds. Any student whose thesis project is primarily concerned with genetics is eligible to apply.
- Summer appointments. These depend on available summer session budgets. The department has awarded as many as four teaching assistantships in recent summer sessions. Summer session appointments are two-months of the academic year salaries. Awards are made for one-half-time service or 20 hours of time per week for the eight-week summer session. Selection of eligibility for the summer appointments is made on the basis of need or in charge of the course to be served.
- Faculty members with individual grants-in-aid. Faculty may wish to employ one-half-time or one-quarter-time research assistants. These awards are made by the principal investigator in charge of the grant and carry stipends similar to those available for institutional resources. Graduate College and departmental regulations and standards apply to these appointments.
- Grants in aid for graduate students. Agencies such as NSF, NIH, and Sigma Xi make grants-in-aid to graduate students. Applications for grants-in-aid for graduate students. The Graduate College also provides information regarding grants available to graduate students.

Special Facilities and Activities

The Chemistry--Botany Building houses an excellent botany Rotory.

Students conducting research projects that require plant cultivation have access to greenhouse and special culture rooms with controlled environments. A plant physiology laboratory with associated greenhouses is available.

A number of research laboratories are equipped with standard as well as sophisticated apparatus for research in growth regulation, photosynthesis, plant biochemistry, molecular biology, biochemical systems, microbiology, cytochemistry, developmental biology, genetics, cell biology, and electron microscopy. A fluorescence microscope resides in
no later than the end of their second year of study.

Upon completing the Ph.D. research, the student prepares for dissertation. The dissertation examination consists of an oral defense of the thesis, at which time at least one member of the publishable portions of the thesis is presented.

Interdisciplinary Programs

The Department of Chemistry cooperates on interdisciplinary programs applied in mathematical sciences and in chemical physics (see the "Graduate College" section of the Catalog). Students with undergraduate degrees in chemistry, physics, mathematics, or engineering are eligible.

Admission

Applicants for graduate study are admitted in a baccalaureate degree in chemistry with a recommended grade-point average above 3.00. Most admitted graduate students receive financial support, and application forms may be obtained by writing to the Department of Chemistry.

Facilities

The department is housed in a four-story building containing two auditoriums, five lecture rooms, fifteen undergraduate research laboratories, a computer laboratory, and a number of special-purpose instruction rooms. Modern scientific equipment is available.

The department's excellent library facilities are accessible to all students. The library contains standard reference works and complete volumes of chemistry and chemical engineering journals and subscribes to a large number of current scientific journals.

Courses

Primarily for Undergraduates

Students planning to take more than one year of chemistry should take 413, 414, and 418. Students who require only one year of chemistry may take 417, 418, and 419.

6080 Cooperative Education Internship

65 Technology and Society

60 Accelerated B.S./M.S. Program

6100 Cooperative Education Internship

62 General Chemistry I

63 General Chemistry II

64 General Chemistry III

65 General Chemistry IV

66 General Chemistry V

67 General Chemistry VI

68 General Chemistry VII

69 General Chemistry VIII

70 General Chemistry IX

71 General Chemistry X

72 General Chemistry XI

73 General Chemistry XII

74 General Chemistry XIII

75 General Chemistry XIV

76 General Chemistry XV

77 General Chemistry XVI

78 General Chemistry XVII

79 General Chemistry XVIII

80 General Chemistry XIX

81 General Chemistry XX

82 General Chemistry XXI

83 General Chemistry XXII

84 General Chemistry XXIII

85 General Chemistry XXIV

86 General Chemistry XXV

87 General Chemistry XXVI

88 General Chemistry XXVII

89 General Chemistry XXVIII

90 General Chemistry XXIX

91 General Chemistry XXX

92 General Chemistry XXXI

93 General Chemistry XXXII

94 General Chemistry XXXIII

95 General Chemistry XXXIV

96 General Chemistry XXXV

97 General Chemistry XXXVI

98 General Chemistry XXXVII

99 General Chemistry XXXVIII

100 General Chemistry XXXIX

101 General Chemistry XL

102 General Chemistry XLI

103 General Chemistry XLII

104 General Chemistry XLIII

105 General Chemistry XLIV

106 General Chemistry XLV

107 General Chemistry XLVI

108 General Chemistry XLVII

109 General Chemistry XLVIII

110 General Chemistry XLIX

111 General Chemistry L

112 General Chemistry LI

113 General Chemistry LII

114 General Chemistry LIII

115 General Chemistry LIV

116 General Chemistry LV

117 General Chemistry LX

118 General Chemistry LXI

119 General Chemistry LXII

120 General Chemistry LXIII

121 General Chemistry LXIV

122 General Chemistry LXV

123 General Chemistry LXVI

124 General Chemistry LXVII

125 General Chemistry LXVIII

126 General Chemistry LXIX

127 General Chemistry LXX

128 General Chemistry LXXI

129 General Chemistry LXXII

130 General Chemistry LXXIII

131 General Chemistry LXXIV

132 General Chemistry LXXV

133 General Chemistry LXXVI

134 General Chemistry LXXVII

135 General Chemistry LXXVIII

136 General Chemistry LXXIX

137 General Chemistry LXXX

138 General Chemistry LXXXI

139 General Chemistry LXXXII

140 General Chemistry LXXXIII

141 General Chemistry LXXXIV

142 General Chemistry LXXXV

143 General Chemistry LXXXVI

144 General Chemistry LXXXVII

145 General Chemistry LXXXVIII

146 General Chemistry LXXXIX

147 General Chemistry XC

148 General Chemistry XCI

149 General Chemistry XCII

150 General Chemistry XCIII

151 General Chemistry XCIV

152 General Chemistry XCV

153 General Chemistry XCVI

154 General Chemistry XCVII

155 General Chemistry XCVIII

156 General Chemistry XCIX

157 General Chemistry CXX

158 General Chemistry CXXI

159 General Chemistry CXXII

160 General Chemistry CXXIII

161 General Chemistry CXXIV

162 General Chemistry CXXV

163 General Chemistry CXXVI

164 General Chemistry CXXVII

165 General Chemistry CXXVIII

166 General Chemistry CXXIX

167 General Chemistry CCC

168 General Chemistry CCCC

169 General Chemistry CCCCC

170 General Chemistry CCCCCC

171 General Chemistry CCCCCCCC

172 General Chemistry CCCCCCCCC

173 General Chemistry CCCCCCCCCC

174 General Chemistry CCCCCCCCCCCC

175 General Chemistry CCCCCCCCCCCCC

176 General Chemistry CCCCCCCCCCCCCC

177 General Chemistry CCCCCCCCCCCCCCC

178 General Chemistry CCCCCCCCCCCCCCCC

179 General Chemistry CCCCCCCCCCCCCCCCC
following course, or their equivalents, are required:

14.1-2 Elementary Greek 8 s.h.
14.11-12 Second-Year Greek I-II 6 s.h.
20.16-17 Second-Year Latin I-II 6 s.h.
14.12-13 Homer and Herodotus 6 s.h.
or
20.81 Age of Cicero 3 s.h.
and
20.82 Age of Augustus 3 s.h.
14.171 Elementary Greek Composition 3 s.h.
or
14.371 Elementary Latin Composition 3 s.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 civilizations of the Mediterranean world and draws on 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 s.h.
Ancient History 6 s.h.
Ancient philosophy or religion 6 s.h.
Classics (either "Classics in English" courses, or Latin or Greek language courses) 6 s.h.
Appropriate courses in art, history, philosophy, religion, or linguistics 3 s.h.
14.194 Seminar in Ancient Civilization 3 s.h.

Honors
For exceptional seniors who attain a 3.50 grade-point average in their first three years of classics courses, two courses are offered in honors reading, one each semester of the senior year, for 3 semester hours of credit each. The readings and discussions are in an ancient author or a field in ancient history or literature chosen by the student and the instructor. During the first semester of honors reading, the student presents 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 s.h.
All courses numbered 14.121 or higher.
Courses numbered 14.100-120 do not count toward the minor because they are not courses in Greek language.

Latin
20.16-17 Second-Year Latin I-II 6 s.h.
20.81 Age of Cicero 3 s.h.
20.82 Age of Augustus 3 s.h.
All courses numbered 20.121 or higher.
Courses numbered 20.100-120 do not count toward the minor because they are not courses in Latin language.

Classics
14.11-12 Second-Year Greek I-II 6 s.h.
20.16-17 Second-Year Latin I-II 6 s.h.
20.81 Age of Cicero 3 s.h.
20.82 Age of Augustus 3 s.h.
These courses or their equivalents are required for the minor in classics, so that students will have 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 interdepartmental committee on the major in ancient civilization.

14.26 Introduction to Ancient Art 3 s.h.
20.81 Age of Cicero 3 s.h.
20.82 Age of Augustus 3 s.h.

Language for Nonmajors
Students who want to satisfy the College of Liberal Arts foreign language requirement for the B.A. degree by studying Greek should take 14.1-2 Elementary Greek and 14.11-12 Second-Year Greek I-II. Students who want to meet the requirement by studying Latin may elect 20.16-17 Second-Year Latin I-II 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 103-139.

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 elementary Greek in their programs.

Doctor of Philosophy
Required Courses
A one-semester course in Greek rapid readings (3 s.h.)
A one-semester course in Latin rapid readings (3 s.h.)
Advanced Greek composition (3 s.h.) or equivalent
Advanced Latin composition (3 s.h.) or equivalent
Survey of Ancient Near East and Greece (3 s.h.)
The Hellenistic World and Rome (3 s.h.)
Any two of the following three courses: Comparative Greek and Latin (3 s.h.)
Greek Paleography (3 s.h.)
Any 3 s.h. graduate-level art course
The minimum Graduate College requirement is 72 semester hours; the difference is to be made up from regular departmental offerings.

Required Ph.D. Examinations
Precomprehensive
French competence
German competence
Comparative Greek and Latin (3 s.h.)
One oral 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 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 scholar, classical subjects, and a small library. Associated with the department, the classical museum contains a valuable collection of cistae, vases, and facsimiles in
COMMUNICATION STUDIES

Cheryl W. Duvall, Head
Assistant Professor: Kathleen R. Haller, Robert K. Hassen, John J. Peterson, John M. Powell, Beverly J. Vertigan
Instructor: Susan Bertolino

Undergraduate degree offered: BA in Communication Studies

The Department of Communication Studies is concerned with communication as a means of personal expression and development; as methods people use to adjust themselves to their society and their environment; and as an essential process for the operation of any society, especially a highly technological society. The department also is concerned with communication as an art as well as a functional expression. These concerns are manifested in studies of interpersonal, group, public, broadcast, and film communication.

The department has five major divisions, whose emphases and courses are described under the headings of broadcasting and film (B.A., B.A., M.A., Ph.D.), communication research (B.A. and B.A.), communication research (M.A. and Ph.D.), and interpersonal communication (M.A. and Ph.D.). Facilities included in the department are available to students in the University Undergraduate Academic Advising Center, secretaries, juniors, and seniors are assigned departmental advisers. Anyone wishing to take courses other than those fulfilling General Education Requirements must have a 2.0 cumulative grade-point average.

Undergraduate Programs

Students who work to complete a Bachelor of Arts degree in communication studies must earn a minimum of 30 semester hours as described under "Broadcasting and Film" and "Communication," below. Students who seek teacher certification must earn 33 semester hours as described under "Communication Education," below. All three of these undergraduate programs must complete at least four foundation courses in their core subject areas: broadcasting, communication, film, and rhetoric. Foundation courses in the core area are as follows:

**Broadcasting**

- Broadcast News Media and Mass Society

**Communication**

- Communication Technology in Everyday Life
- Film
- Interpersonal Communication Theory in Everyday Life
- Interpersonal Communication Theory in Everyday Life
- Rhetoric
- Social Persuasion in Society
- Social Persuasion in Society
- Total Communication and Contemporary Culture

Admission

To be considered for admission to the Department of Communication Studies, applicants must:

- Complete by the end of the semester in which they apply a minimum of 56 semester hours of approved university credit. At least have a 2.5 grade-point average on at least three foundation courses representing three different core areas; have at least a 2.5 cumulative grade-point average; and submit a statement indicating why they want to enter the department, mentioning special talents, interests, or abilities that suggest exceptional promise.

These three factors are considered by the undergraduate admissions committee. No minor or major is required. Applicants that do not meet the minimum criteria may petition the undergraduate admissions committee. Students are considered for admission to the department three times a year during the eighth week of each semester and the last week of summer school.

These admissions requirements are in effect for all students, regardless of when they were admitted to the University. The degree requirements (30 or 33 semester hours, depending on choice of program) apply to students who first enrolled at the University for the 1985 fall semester. Students who enrolled before fall 1986 and who graduate in the fall of 1989 may choose to complete the major under the old requirements, which are listed in the 1986-1987 University of Iowa General Catalog.
No B.A. degree in communication studies completed under the old requirements will be awarded after August 1992.

Honors
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 completion of this thesis is not a prerequisite to registering for any upper division course by completing an agreement with the course instructor for special work in that course. Students 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 2600 or 2640 and above.

Graduate Programs
Master of Arts
A student can earn a general M.A. degree in the communication studies program in one of the following divisions: Communication, Communication and Information Science, Information Science, and Radio, Television and Film. The Master of Arts degree requires 30 credits of work in addition to an approved program of independent study and research.

Departmental requirements for the Master of Arts degree are:
- A minimum of 16 semester hours of graduate coursework, excluding dissertation credit and including ≥ 12 hour sequence in an approved research area
- A minimum of 10 semester hours of dissertation credit
- 36000 Introduction to Research
- At least two courses in theory area within the department, and others as approved by the student, advisor, and graduate committee, in consultation with the student
- Successful completion of a qualifying examination in the student's major research area
- A substantial scholarly dissertation
- A 3.00 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 have the best chance of admission. The minimum cumulative undergraduate grade-point average required for admission in good standing is 2.75.

Educational Specialist (Junior College Teaching)
Departmental requirements for the Educational Specialist degree are:
- A minimum of 60 semester hours, including 30000 Introduction to Research, a course in teaching communication, an approved minor, and at least 19 semester hours completed in the College of Graduate department in 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 assessed by the student and his or her graduate committee
- Successful completion of each additional requirement as specified by the departmental division in which the student's work is concentrated

Doctor of Philosophy
Departmental requirements for the Doctor of Philosophy degree are:
- A minimum of 94 semester hours of graduate credit, excluding dissertation credit and including ≥ 12-hour sequence in an approved research area
- A minimum of 10 semester hours of dissertation credit
- 36000 Introduction to Research
- At least two courses in theory area within the department, and others as approved by the student, advisor, and graduate committee, in consultation with the student
- Successful completion of a qualifying examination in the student's major research area
- A substantial scholarly dissertation
- A 3.00 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 have the best chance of admission. Admission decisions are based on composite consideration of the applicant's undergraduate achievement, letters of reference, and other evidence of scholarly potential or achievement, such as Graduate Record Examination (GRE) General Test results and samples of scholar work.

Facilities
The Communication Studies Building, one of the newest facilities on campus, has been designed architecturally to meet both the 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, and radio studios, along with an advanced 24-track studio that serves the needs of courses throughout the program. A large pool of equipment is available to support student work in both studio and laboratory 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 Courses
36080 Cooperative Education Internship
36100 Human Communication
36105 Issues in Communication Studies
36116 Problems in Communication, Media and Communication Theory
36200 Workshop in Teaching Communication
36279 Workshop in Teaching Communication
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36313 Workshop in Teaching Communication
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Teaching Minor Certification in Communication Studies

Completion of 23 semester hours of course work in communication and theater arts is required. These hours must be approved by an advisor.

Courses

31187 Directing Foreign Affairs 3 s.h.

Prerequisite: C- or better in the second semester program or permission of the Program Director. Prerequisite: 1.00 cumulative grade-point average. Same as 16:101.

41188 Methods of Communication 3 s.h.

Prerequisite: Completion of major stage class or consent of instructor. Course consists of one-half credit in each course. Prerequisite: 3.50 cumulative grade-point average. Same as 16:100.

22028 College Press: Teaching Print Media 2 s.h.

Explanation of literature and problems involved in teaching print media; public speaking, and reading. Same as 16:87.

23050 Contemporary Communication Controversies 2 s.h.

Evaluation of current and historical controversies involving major issues in communication, public speaking, and related areas.

Communication

Within a liberal arts philosophy, communication majors study oral, written, visual, electronic, and print media, their environments, from theoretical, historical, and social-science perspectives. Students also explore their analytical and practical communication skills through critical practice. Combined with related work in mass communication, social sciences, expository prose, journalism, and business (especially marketing and administration), this major prepares students for careers in business, public relations, the media, and government. Others use the major as professional preparation for advanced studies in teaching, law, business, and the ministry, and for graduate studies.

To graduate with a B.A. in communication, students must complete 36 semester hours of work in the department, including:

Four foundation courses across four core areas:

12 s.h.

At least four additional 300-level courses, including at least two numbered above 312 s.h.

Any 6 semester hours of additional advanced coursework work.

6 s.h.

The department and division sponsor an internship program, which provides outside work experience, practical assignments, and an introduction to college-level teaching. Forensics Union, located in the International Center, offers opportunities to apply communication knowledge and skills in a variety of settings, such as advertising, public relations, organizational development, politics, personnel, research and training. The forensics program, student have an opportunity to visit in-campus debates, with development programs designed to improve speech activities in the state, and as members of competitive intercollegiate debate and individual events. Forensics scholarships are available.

Courses

A 2.30 cumulative grade-point average is required for enrollment in all courses except 31153, 31160, and 31163. Additional prerequisites are listed in course descriptions.

31124 Communicating in Public 3 s.h.

Introduction to the course in public speaking:mesa 111.53, 31152, or equivalent; or permission of instructor. Prerequisite: 1.00 cumulative grade-point average. Same as TCHR 152.

Prerequisites: 31124 Communicating in Public, 31121 Communicating in Public, and 31121 Communicating in Public, or permission of instructor. Prerequisite: 1.00 cumulative grade-point average. Same as TCHR 151.

Prerequisites: 31124 Communicating in Public, 31121 Communicating in Public, and 31121 Communicating in Public, or permission of instructor. Prerequisite: 1.00 cumulative grade-point average. Same as TCHR 150.

Prerequisites: 31124 Communicating in Public, 31121 Communicating in Public, and 31121 Communicating in Public, or permission of instructor. Prerequisite: 1.00 cumulative grade-point average. Same as TCHR 149.

Additional prerequisites are listed in course descriptions.

30018 Communicating in Public 3 s.h.

Introduction to the course in public speaking:mesa 111.53, 31152, or equivalent; or permission of instructor. Prerequisite: 1.00 cumulative grade-point average. Same as TCHR 151.

31153 Communicating in Public 3 s.h.

Introduction to the course in public speaking:mesa 111.53, 31152, or equivalent; or permission of instructor. Prerequisite: 1.00 cumulative grade-point average. Same as TCHR 152.

31160 Communicating in Public 3 s.h.

Introduction to the course in public speaking:mesa 111.53, 31152, or equivalent; or permission of instructor. Prerequisite: 1.00 cumulative grade-point average. Same as TCHR 153.

31163 Communicating in Public 3 s.h.

Introduction to the course in public speaking:mesa 111.53, 31152, or equivalent; or permission of instructor. Prerequisite: 1.00 cumulative grade-point average. Same as TCHR 154.
Communication Studies • Liberal Arts

340.55 Communication Research
3 A-H
Research methods for analyzing communication data. Topics include surveys, interviews, and content analysis. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.56 Communication Theory
3 A-H
Introduction to the major theories of communication. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.58 Media and Communication Policy
3 A-H
Analysis of the political, economic, and social factors that influence communication policy. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.59 Mass Media and Society
3 A-H
Study of the role of the mass media in society, with emphasis on the impact of media on individual and group behavior. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.60 Communication and Social Change
3 A-H
Study of the role of communication in social change and development. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.61 Communication and Technology
3 A-H
Exploration of the impact of technology on communication, including the role of new media in society. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.62 Communication and Health
3 A-H
Analysis of the role of communication in health and illness, with emphasis on the impact of media on health behavior. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.63 Communication and Law
3 A-H
Study of the legal implications of communication, including issues of freedom of speech and press. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.64 Communication and Business
3 A-H
Analysis of the role of communication in business and management, with emphasis on the impact of media on organizational communication. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.65 Communication and the Environment
3 A-H
Study of the role of communication in environmental issues, with emphasis on the impact of media on public opinion and policy. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.66 Communication and Politics
3 A-H
Analysis of the role of communication in politics, with emphasis on the impact of media on political campaigns and elections. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.67 Communication and Public Policy
3 A-H
Study of the role of communication in public policy, with emphasis on the impact of media on policy formation and implementation. Prerequisites: 340.51 and 340.52, or permission of instructor.

340.68 Communication and Culture
3 A-H
Analysis of the role of communication in cultural diffusion and identity, with emphasis on the impact of media on cultural globalization. Prerequisites: 340.51 and 340.52, or permission of instructor.
Broadcasting and Film

Bachelor of Arts

This program is intended for students interested in film or electronic media as the focus of a liberal arts education. It assumes that anyone pursuing a career in these areas must have more than just technical expertise but also should ground that expertise in an understanding of 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 or film media totally apart from experience and knowledge of production. As such, this program, in its structure, themes, course titles, and its focus on effective communication of cultural meanings and their impact, is designed to accommodate practice.

Courses

A 2.50 cumulative grade-point average is required for enrollment in all courses numbered through 300-195, except 368-24, 368-51, 370-146, and 370-147. Additional prerequisites are listed in course descriptions.

Broadcasting and Film Studies

Four foundational courses across four core areas:

12 s.h.

368-40 Introduction to Broadcast and Film Production

At least three advanced courses (numbered above 368-40) in one of the subfields: broadcast studies, film studies, or production studies. Graduate Programs

These programs are used to the Master of Arts degree, media/broadcast studies, film studies, and production studies. Candidates in media/broadcast studies develop critical theoretical, historical, aesthetic, and political-economic skills during their course of study. Candidates in film studies develop broad knowledge of the discipline through a series of six-hour-long courses of study in critical, theoretical, and historical topics. Production studies candidates develop significant knowledge in these scholarly areas in addition to their creative work in film, television, or audio. The Ph.D. programs in both broadcasting and film studies are individually tailored by each candidate and an advisory committee to develop expertise in research. Mass Communication and American Democracy

Introduction to the philosophical foundations of American democracy, from the conceptual issues of mass communication, to the role of electronic media in American politics, and the influence of democratic values on the media. (Prerequisites: 368-210 and consent of instructor.)

368-30 Media and Politics

Introduction to the philosophical foundations of American democracy, from the conceptual issues of mass communication, to the role of electronic media in American politics, and the influence of democratic values on the media. (Prerequisites: 368-210 and consent of instructor.)

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Introduction to the philosophical foundations of American democracy, from the conceptual issues of mass communication, to the role of electronic media in American politics, and the influence of democratic values on the media. (Prerequisites: 368-210 and consent of instructor.)
Comparative Literature

Charles Freeman Rapport
P-Honors: J. Dudley Andrew, Stanley
Origins: Ralph E. Karrull, Alain P. Pizzi
Rapport, Steven Unger, David T. Wendt
Assistant professor: Sabine Gill

Faculty assisting in the program:
In addition to the faculty listed above, the program coordinates the efforts of several faculty members in the various fields of literature. Students should consult with the department head or a member of the faculty for a detailed list of faculty available to advise them.

Comparative Literature

Comparative Literature is a field of study that involves the comparative analysis of literary works from different languages, cultures, and historical periods. It encourages students to explore the universality and diversity of human experience through the study of literature.

The Comparative Literature program offers Bachelor of Arts (B.A.) and Master of Arts (M.A.) degrees in Comparative Literature. The program is designed to provide students with a broad understanding of literature and its role in society, as well as to develop critical thinking and communication skills.

Undergraduate Program

The undergraduate major in comparative literature provides an individualized program of study based on the student's interests. The program is flexible and can be tailored to suit the student's goals.

Graduate Programs

The Master of Arts degree in comparative literature requires 32 semester hours of study. Students must complete a thesis or a comprehensive exam. The program is designed to prepare students for further study or for careers in fields related to comparative literature.

Honors

To graduate with honors in Comparative Literature, students must meet eligibility standards listed in the Guide to Honors publication of the College of Liberal Arts. Students must be recommended for graduation by their department chair and must satisfactorily complete the requirements for graduation with a minimum grade point average of 3.0.
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 understanding of the world’s cultures, their 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—a book-length collection of poems or a novel—of at least 30,000 words, translated from the original language into English and accompanied by a critical introduction.

At least 70 semester hours of graduate study is required, 24 of which must be taken at The University of Iowa. Besides workshop counts, course work includes study of the foreign literature(s), creative writing (prose, poetry, etc.), and criticism. Thus, M.F.A. students may expect to take courses in foreign language departments, the creative writing program, and the English department, as well as in comparative literature.

Doctor of Philosophy

Students seeking a doctorate in comparative literature study at least three trimesters, one in historical and two in areas of limited specialization. Students are encouraged to include an interdisciplinary area of concentration. All candidates are also required to pass a comprehensive examination, and to program their comparative study, bringing the seminars in focus. Specific areas and interrelationships of areas are determined by the student in consultation with appropriate faculty members.

Some typical critical and comparative areas are European literature, Russian literature, continental European literature, Slavic literature, contemporary literature, and cultural theory, and the theory of social interaction.

The area of dissertation should demonstrate the candidate’s ability to write a substantial piece of scholarship or criticism. A demonstration of a work of sufficient significance and linguistic complexity, proceeding by a critical introduction, may serve as an acceptable dissertation. The final oral examination on the dissertation shall have its background.

Admission

The study of literature across linguistic boundaries requires special training in languages. A thorough knowledge of at least one foreign language is required for admission to the M.A. course of study.
Bachelor of Arts
The B.A. degree program in dance is designed for students who want a strong liberal arts education with a background and solid undergraduate course preparation. It stresses performance, choreography, and teaching, as well as theory courses such as Labanotation, dance history, dance therapy, and dance production. Students in the program must complete 50 semester hours of credit in dance courses.

Required Courses

- **Dance Theory**
  - 157:19 Introduction to Dance 1.0
  - 157:28 Dance Production 3.0
  - 157:29 Rhythmic Analysis of Dance 2.0
  - 157:14 Dance Rhythm from Primitive Through the Nineteenth Century 3.0
  - 157:15 Twentieth-Century Dance 3.0
  - 157:17 Beginning Labanotation 3.0

- **Dance Electives**
  - Seven semester hours from the following:
    - 157:33 Independent Study 1.0
    - 157:32 Independent Choreography 1.0
    - 157:11 Methods and Materials of Teaching Children’s Dance 2.0
    - 157:13 Ballet Pastiche 1.0
    - 157:17 Advanced Ballet Pastiche 3.0
    - 157:12 Workshop: Artists in Residence 1.0
    - 157:16 Teaching Modern Dance 3.0
    - 157:14 History of Dance Company Workshops 1.0
    - 157:16 Readings in Dance 3.0
    - 157:15 Dance Theory 3.0
    - 157:24 Criticism of Dance 3.0
    - 157:18 Intermediate Labanotation 3.0
    - 157:18 Dance Performance 4.0

- **Dance Technique**
  - Twenty semester hours from the following:
    - 157:05 Tap 2.0
    - 157:06 Contemp Tap 2.0
    - 157:28 Major Modern Dance I 1.0
    - 157:29 Beginning Ballet 2.0
    - 157:11 Continuing Ballet 2.0
    - 157:12 Low Intermediate Ballet 2.0
    - 157:14 Intensive Training for the Male Dancer 2.0
    - 157:05 Major Ballet I 1.0
    - 157:20 Beginning Jazz 2.0
    - 157:21 Continuing Jazz 2.0
    - 157:22 Low Intermediate Jazz 2.0
    - 157:30 Beginning Modern Dance 2.0
    - 157:31 Continuing Modern Dance 2.0
    - 157:32 Low Intermediate Modern Dance 2.0
    - 157:33 Major Modern Dance II 1.0
    - 157:38 Major Modern Dance III 3.0
    - 157:10 Major Ballet II 1.0

- **Minor**
  - A minor in dance requires 15 semester hours of credit in dance department

Bachelor of Fine Arts
In contrast to the B.A. degree in dance, the B.F.A. degree requires 12 more semester hours in studio courses and emphasizes performance and choreography at the undergraduate level. Students may be admitted to the B.F.A. degree program after they have completed a minimum of 30 semester hours at The University of Iowa. The dance department faculty advises those students who have achieved the equivalent of "Moore II" technical level and show academic and professional promise. Students seeking the B.F.A. degree may waive 3 semester hours of the General Education Requirement in natural sciences (math) and 4 semester hours of the General Education Requirement in physical education.

Required Courses

- **Dance Theory**
  - 157:19 Introduction to Dance 1.0
  - 157:28 Dance Production 3.0
  - 157:29 Rhythmic Analysis of Dance 2.0
  - 157:14 Dance History from Primitive Through the Nineteenth Century 3.0
  - 157:15 Twentieth-Century Dance 3.0
  - 157:17 Beginning Labanotation 3.0

- **Dance Electives**
  - Four semester hours from dance electives listed under B.F.A. requirements.

- **Dance Technique**
  - Thirty semester hours from the following courses (may be repeated):
    - 157:5 Major Modern Dance I 1-2.0
    - 157:10 Major Ballet I 1-2.0
    - 157:14 Minor Modern Dance II 1-2.0
    - 157:15 Major Modern Dance III 1-2.0
    - 157:16 Major Ballet II 1-2.0

- **Non-arts**
  - 268:10 Human Anatomy 3.0
  - 268:21 Kinesiology 3.0
  - 261:10 Opera Dance Theatre Production 5.0

- **Electives**
  - Studio courses in art, music, theater, English, or broadcasting 6.0

- **Minor**
  - A minor in dance requires 15 semester hours of credit in dance department
Required Non-Dance Courses
A total of 8 semester hours at the 100 level or above. Must be earned from courses other than Dance with a 157 prefix. These courses, selected for the student and approved by the student's advisor, shall serve as the disciplines of art and art history, music, theater, broadcast and film, physical education, and English.

M.F.A. candidates must take both a ballet and a dance technique course during their first two semesters in residence at The University of Iowa.

Electives
Departmental or nondisciplinary 6 s.h.

Facilities
The dance department has some of the finest facilities in the country. Six technique studios. Two classrooms, video viewing and Laboratory-computer rooms, a library, and its own performance theater space for formal concerts. In addition, Retchin Auditorium is available for formal concerts.

Courses
Primarily for Undergraduates

210:000 Comparative Education Internship 0 s.h.
215:15 Tap
Introduction for beginners. May be repeated. 1-2 s.h.
215:16 Tap (Continued) 1-2 s.h.
215:17 High Intermediate Tap Fundamentals. May be repeated. 2 s.h.
215:18 Majors Dance Studio Intermediate level. May be repeated. 5-6 s.h.
215:19 Beginning Ballet
Introduction to the history, technique, and dance form. May be repeated 5-6 s.h.
215:20 Continuing Ballet
Continuing the beginning ballet. May be repeated. 5-6 s.h.
215:21 Low Intermediate Ballet
May be repeated. 5-6 s.h.
215:22 Intermediate Ballet
May be repeated. 5-6 s.h.
215:23 Advanced Intermediate Ballet
May be repeated. 5-6 s.h.
215:24 Advanced Intermediate Ballet
May be repeated. 5-6 s.h.
215:25 Advanced Intermediate Ballet
May be repeated. 5-6 s.h.
215:26 Advanced Intermediate Ballet
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215:27 Advanced Intermediate Ballet
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215:101 Advanced Intermediate Ballet
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215:102 Advanced Intermediate Ballet
May be repeated. 5-6 s.h.
The purpose of studying economics is to develop an understanding of how complex economic systems work and to acquire training in the methods of economic analysis, which can be applied to a wide range of economic problems. The department offers courses to meet the needs of the nonmajor as well as the major.

Undergraduate Programs

The baccalaureate programs in economics provide an excellent vocational background for a variety of positions in business and government. Graduates find employment in banking, financial institutions, industrial firms, and trade associations, and in federal, state, and local government agencies dealing with economic policy, regulation, and analysis. Economics also is regarded as excellent preparation for law and for graduate study in fields such as business management, public administration, health and hospital administration, urban and regional planning, transportation, journalism, political science, and statistics.

The department offers three undergraduate degrees—the Bachelor of Science (B.S.) and Bachelor of Arts (B.A.) in the College of Liberal Arts, and the Bachelor of Business Administration (B.B.A.) in the College of Business Administration.

The B.A. and B.B.A. programs are designed to provide a background in the business fields of accounting, finance, marketing, business law, and management. The B.B.A. program is designed to prepare the student for graduate work in economics or related business and technical fields. The B.A. program is designed for students seeking a less technical liberal arts background.

Bachelor of Arts

There are five requirements for the B.A. with a major in economics.

225:25 Calculus I
225:25 Calculus II and 225:20 Quantitative Methods II
66:105 Economic Statistics
Or 60:71:Statistical Analysis

Twelve semester hours of credit in 600-level economics courses, including 66:105 Microeconomics.

Economics is concerned primarily with production, distribution, and consumption of goods and services in society. It involves the systematic study of topics such as wealth and poverty, money and banking, income and consumption, government expenditures and taxation, property and depression, inflation, unemployment, big business and labor unions, and hundreds of other matters which intimately affect the way people live.

Bachelor of Science

The B.S. program in economics requires these courses and electives.

225:25-25 Calculus I-II
225:20 Probability and Statistics

Twenty semester hours of credit at the 100-level, including 65:105 Microeconomics, and 65:104 Introduction to Economics.

Economics is regarded as excellent preparation for law and for graduate study in fields such as business management, public administration, health and hospital administration, urban and regional planning, transportation, journalism, political science, and statistics.

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EDUCATION
See “College of Education.”

ENGLISH
Chair: John Bartholomew
Professor: Paul Beier, Michael Bullock, Florence Bowes, David S. Craftbeer, Frank Trost, Angela McCracken, Gayle Sigler, Annette J. St. Victor, Beth Smith, Kip Franklin, Michael Goss, John R. Greaves, Mary Jane Haynes, Gary W. Hooker, John W...
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:  
- enroll in seminars during the junior and senior years, and then present their three seminar papers on 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 hours are available in the English department office, 308 English-Philosophy Building. A handout, Guidelines and Deadlines, which describes both options for the final project in greater detail and specifies the deadlines for turning in the prospectus and the final honors project, is also available in the English office.

Creative Writing

Many undergraduate courses in the University of Illinois because of the unique needs of the discipline. In addition, literature for students interested in more information should contact the chair or any member of the honors committee. The names of the committee members and their office hours are available in the English department office, 308 English-Philosophy Building. A handout, Guidelines and Deadlines, which describes both options for the final project in greater detail and specifies the deadlines for turning in the prospectus and the final honors project, is also available in the English office.

English and Education

The department offers a flexible undergraduate major in English for students planning to teach English in elementary and secondary schools. Students who complete this major satisfy the requirements for a general major in English for teaching certification.

Students who wish to be certified to teach English in Iowa secondary schools should 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 literature, including modern literature, world literature, Shakespeare, British literature of the sixteenth and seventeenth centuries, American literature, and World literature. Students interested in more information should contact the chair or any member of the honors committee. The names of the committee members and their office hours are available in the English department office, 308 English-Philosophy Building. A handout, Guidelines and Deadlines, which describes both options for the final project in greater detail and specifies the deadlines for turning in the prospectus and the final honors project, is also available in the English office.

Graduate Programs

Master of Arts (Literary Studies)

The MA in literature is a rigorous program for students who want to acquire an understanding of what makes a study literature important. Those who seek an MA 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 wish to gain extra credit and teach; or independent readers and writers seeking intellectual growth unrelated to a specific career objective. All MA students are full participants in the community of the graduate 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 teaching certification must be admitted to the teacher education program and must also complete one year of English with their advisers to take the alternative education courses concurrently with courses in English. In addition, students must complete 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 major should consult their advisers for elementary education.

Students who wish certification for 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, including 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, and American literature of the twentieth century. British literature of the nineteenth or twentieth centuries, literature for adolescents, and vocational education. Students are required to take 75-115 English, 75-115, 150, 150, 215 for the major, 348 for the minor, and 319 for the teacher education courses.

Minor in Education

The program meets minimum requirements for programs in education. The department recommends that students who wish to teach English consider additional coursework in English education.

Graduate Programs

Master of Arts (Literary Studies)

The MA in literature is a rigorous program for students who want to acquire an understanding of what makes a study literature important. Those who seek an MA 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 wish to gain extra credit and teach; or independent readers and writers seeking intellectual growth unrelated to a specific career objective. All MA students are full participants in the community of the graduate department and may enroll in any of its graduate courses or seminars.

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The department also participates in a joint major in English and elementary education. Students interested in this major should consult their advisers for elementary education.

Students who wish certification for 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, including 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, and American literature of the twentieth century. British literature of the nineteenth or twentieth centuries, literature for adolescents, and vocational education. Students are required to take 75-115 English, 75-115, 150, 150, 215 for the major, 348 for the minor, and 319 for the teacher education courses.

Minor in Education

The program meets minimum requirements for programs in education. The department recommends that students who wish to teach English consider additional coursework in English education.
Thesis or Comprehensive Examination

The student may choose to complete the
program by either:

1. **Thesis**: preparing and defending a research paper or developing a creative work, such as a novel or a play. The student must register for the thesis course and enroll in the appropriate seminar, which counts as 6 credit hours.

2. **Comprehensive Examination (CPE)**: preparing and defending a written examination covering the student's coursework. The student must register for the CPE course and enroll in the appropriate seminar, which counts as 6 credit hours.

**Doctor of Philosophy (Ph.D.) Program**

The Ph.D. program is designed to prepare students for a career in teaching, research, and administration. The program consists of coursework, teaching, and research experiences.

**Coursework**: Students must complete a minimum of 60 credit hours of coursework, including core courses and electives. The coursework must be completed within five years.

**Teaching**: Students must teach at least one course per year, starting with their third year.

**Research**: Students must complete a dissertation, which is a significant piece of original research.

**Admission Requirements**

1. **Academic Requirements**:
   - An undergraduate degree in English or a related field with a minimum GPA of 3.0.
   - Letters of recommendation from at least three academic references.
   - Statement of purpose outlining the student's academic and professional goals.

2. **English Proficiency**: Evidence of proficiency in reading, writing, and speaking English.

**Fees and tuition**: depending on the student's financial status and the duration of the program.

**Financial Aid**

The Writing Program is committed to supporting students through scholarships, fellowships, and graduate assistantships. Students are encouraged to apply for these opportunities to fund their studies.

**Graduate Assistantships**

Graduate assistantships are available to qualified students. Assistantships include a stipend and tuition remission.

**Application Process**

Interested students should apply through the university's online application system, which is available starting November 1 for the following academic year. The application deadline is February 1.
American Literature
Major works of American antebellum, Civil War era, and immediate post-Civil War in America. (Prerequisite: ENG 120A)

The American Novel
3
The history of the nation's "voice" in the novel, from the first American writers to the present. (Prerequisite: ENG 120B)

The Novel and the Tradition
3
The novel's history in America, along with the novel's relationship to contemporary American culture. (Prerequisite: ENG 120B)

The American Essay
3
The history of the American essay, from its roots in the colonial period to its development in the modern era. (Prerequisite: ENG 120B)

Literature of the American People
3
Selected works by African American writers, American Indian writers, Asian American writers, and Latin American writers. (Prerequisite: ENG 120B)

Women and Literature
3
Novels and short stories written by women that explore the roles and experiences of women. (Prerequisite: ENG 120B)

Literature and the Arts: Art and Literature
3
A survey of the interaction between art and literature, focusing on the ways in which literature has been influenced by and has influenced the arts throughout history. (Prerequisite: ENG 120B)

Primarily for Undergraduates

English department courses open to all undergraduates who have satisfied the prerequisite requirements. In most cases, undergraduate English courses may be taken by graduate students with the instructor's permission.

Readings
Three specialized discussion courses are intended for English majors, other students with considerable experience in the study of literature, and those interested in a variety of disciplines. The courses are designed to provide an introduction to the methods and techniques of literary study.

Autors

The novel as a form of American imagination
3
An analysis of the novel as a form of American imagination, focusing on how novels have shaped our understanding of American culture and history. (Prerequisite: ENG 120B)

The Course of Greek Vision
3
The study of Greek literature, focusing on the influence of Greek thought on American culture and society. (Prerequisite: ENG 120B)

The Narrative Literature
3
Selected works of American narrative literature, focusing on the ways in which narrative literature reflects the values and beliefs of American society. (Prerequisite: ENG 120B)

The Lyrics Poetry
3
Selected works of American poetry, focusing on the ways in which poetry reflects the personal and social experiences of American society. (Prerequisite: ENG 120B)

Literature of the "Other"
3
Selected works by writers from minority groups, focusing on the ways in which these works challenge traditional notions of identity and culture. (Prerequisite: ENG 120B)

Literature and the Arts: Music and Literature
3
The study of the relationship between music and literature, focusing on how music has influenced and been influenced by literature throughout history. (Prerequisite: ENG 120B)


**Liberal Arts**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>6222 History of Criticism: 1790-1950</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6231 Theatre in Contemporary Literary Criticism</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6265 Political Criticism</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6272 Classical Rhetoric</td>
<td>2-4 a.h.</td>
<td></td>
</tr>
<tr>
<td>6288 Modern Rhetoric</td>
<td>2-4 a.h.</td>
<td></td>
</tr>
<tr>
<td>6297 Introduction to Contemporary Literary Theory</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6301 English 401: Introduction to Shakespeare</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6301 English 402: Introduction to Shakespeare</td>
<td>3 a.h.</td>
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</tr>
<tr>
<td>6304 Studies in Language, Literature, and Culture</td>
<td>3 a.h.</td>
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</tbody>
</table>

**Literary Themes, Genres, and Modes**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>6220 Media in the Literature of Black and White Authors</td>
<td>3 a.h.</td>
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</tr>
<tr>
<td>6229 Law and Lawyers in Literature</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6274 Film Modes</td>
<td>3 a.h.</td>
<td></td>
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<tr>
<td>6276 Narrative Modes</td>
<td>3 a.h.</td>
<td></td>
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<tr>
<td>6277 Studies in Satire</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6288 Topics in Irish Literature</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6294 Theories of American Literature</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6295 Library Genre and Modes</td>
<td>3 a.h.</td>
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**Special Period and Cultural Studies**

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>6310 Modern Studies</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6314 Postmodern Studies</td>
<td>3 a.h.</td>
<td></td>
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</tbody>
</table>

**Comparative and European Literature**

<table>
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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>6213 Comparative Renaissance</td>
<td>3 a.h.</td>
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</tr>
<tr>
<td>6280 Introduction to Comparative Literature</td>
<td>3 a.h.</td>
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**Seminars**

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<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>6002 Seminar: Medieval Literature</td>
<td>3 a.h.</td>
<td></td>
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<tr>
<td>6006 Seminar: Renaissance and Modernist Literature</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6017 Seminar: Renaissance Literature</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6431 Seminar: Shakespeare</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6454 Seminar: 17th-Century Literature</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6451 Seminar: Restoration and Eighteenth-Century Literature</td>
<td>3 a.h.</td>
<td></td>
</tr>
<tr>
<td>6452 Seminar: English Renaissance</td>
<td>3 a.h.</td>
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</table>

**Professional**

For students interested in improving their writing skills.

- 6200 Advanced Reading Comprehension: 3 a.h.
- 6201 Speed Reading: 3 a.h.
- 6202 Practical College Vocabulary: 3 a.h.

Although the following courses are available to all graduate students, their primary purpose is to offer theoretical and practical training to those who plan to teach.

- 6203 Language and Learning: 3 a.h.
- 6205 Modern English: 3 a.h.
- 6210 Seminar in English: 3 a.h.
- 6215 English Composition: 3 a.h.
- 6216 Grammar and Style: 3 a.h.

**Expository Writing**

The following courses may be taken for credit.

- 6210 Expository Writing: 3 a.h.
- 6211 Technical and Scientific Writing: 3 a.h.
- 6212 Grammar for Writers: 3 a.h.
- 6213 Essay and the Art of Writing: 3 a.h.
- 6214 Creative Writing: 3 a.h.
- 6215 Writing for the Arts: 3 a.h.
- 6216 Edited or Revised Texts: 3 a.h.
- 6217 Theory of Expository Writing: 3 a.h.
- 6218 Essay Writing for Teachers: 3 a.h.
- 6219 Critical Writing: 3 a.h.
- 6220 Essay Writing Workshop: 3 a.h.

**Theology and Practice of Writing**

Theory and analysis of expository writing with practical experimentation in writing; for people who listen to public, private, and/or teach expository writing.

- 6210 Theology of the Essay: 3 a.h.
- 6212 Art of the Essay: 3 a.h.
- 6214 Approaches to Teaching Writing: 3 a.h.
FRENCH AND ITALIAN

Chair: John T. Kuhnke
Professor: Charles F. Altman, Jacques A. Bouvier, John Frederick, Richard O'Guinn, Steven Ogden
Associate professor: Janet G. Allen, Wendell Quaranta, E. Ratti Mezzopinto, Geraldine Taylor Assistant professor: Chantel DiVesta, Debora R., Caroline, Mario Lanoit, L. Jeanne
Undergraduate degrees offered: B.A. in French, B.A. in Italian
Graduate degree offered: M.A., Ph.D. in French

Undergraduate Programs

The department introduces students to the cultures of France and Italy, provides an understanding of their countries' historical and contemporary importance, and facilitates development of multilingualism 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 majors in French and Italian and electives for minors with appropriate linguistic skills. They are afforded flexible means to meet the foreign language requirement of the College of Liberal Arts and to fully individualize their needs and interests.

Students majoring in French or Italian may combine their studies with courses in education (see the "College of Education" section of the Catalog) to prepare for jobs in the upper elementary schools. They may go on to graduate study in areas such as French, comparative literature, or history as preparation for college teaching or research in foreign language education. Or, in combination with other skills and studies, a major in French or Italian may prepare students for challenging career opportunities in the internationally oriented areas of government, business, finance, travel, or tourism, where the knowledge of a foreign language is essential.

Bachelor of Arts in French

The undergraduate major in French may be completed with an emphasis in literature, civilization, teaching, or applied French.

Courses taught in English are not counted as credit toward the French major, nor does a grade of D in any required French course fulfill the requirement for bachelor of arts degree.

Literature Track

The literature track is designed for students who are interested in French literature or in combining the study of French literature with a major in another field, such as English, comparative literature, cinema or film arts. It requires a total of 35 semester hours of credit in French, including:

9 105-106 First-Year Composition and Conversation 3 s.h.
9 110-111 Second-Year Composition 3 s.h.
9 118 French Conversation: First Level 2 s.h.
9 116 First-Year Composition and Conversation 3 s.h.
9 117 Advanced French Pronunciation 2 s.h.
9 225 French Pronunciation 2 s.h.
A minimum of four (10-hour) courses in literature (at least two of which must be above the 150 level) plus a fifth 200-level course in a choice of literature, advanced language, or civilization, totaling 15 semester hours.

Civilization Track

The civilization track is designed for students interested in French history, politics, and culture and recommended for students who want to combine studies in French with a major in another area, such as history, political science, pre-law, and journalism and mass communication. It requires 35 semester hours of credit in French, including:

9 105-106 Second-Year Composition and Conversation 3 s.h.
9 110-111 Second-Year Composition 3 s.h.
9 225 Advanced French Pronunciation 2 s.h.
9 210 Italian Composition and Conversation 3 s.h.
9 205-206 Italian Composition and Conversation 3 s.h.
A minimum of four (10-hour) courses in civilization and three (100-level) courses in literature, totaling 15 semester hours and including at least one course in literature below the 150 level.

Teaching Track

The teaching track requires 35 semester hours of credit in French, including:

9 105-106 Second-Year Composition and Conversation 3 s.h.
9 110-111 Second-Year Composition 3 s.h.
9 225 Advanced French Pronunciation 2 s.h.
9 118 French Conversation: Third Level 2 s.h.
9 205 French Composition: Fourth Level 2 s.h.
A minimum of five (10-hour) courses—two at least two in literature and two in civilization—totaling 15 semester hours, and including at least two courses above the 150 level.

The student who plans to acquire a secondary teaching certificate must complete the requirements for teacher certification. See the "College of Education" section of the Catalog.

Applied French Track

The applied French track is designed for students with an interest in areas such as international business, commerce, law, and others in which applied French would be an asset. It requires 39 semester hours in French, including:

9 105-106 Second-Year Composition and Conversation 3 s.h.
9 110-111 Second-Year Composition 3 s.h.
9 118 Business French 3 s.h.
9 118 French Conversation: Third Level 2 s.h.
9 205-206 French Composition: Fourth Level 2 s.h.

EXERCISE SCIENCE

See "Division of Physical Education."
Summer Program in Quebec
The department participates in the Committee on Institutional Cooperation (CIC) Summer French Program in Quebec at the Université Laval. This program is a nonprofit organization whose purpose is to foster cooperation and educational opportunities among the Big Ten universities and the University of Chicago. 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 Franscicaine in the Foreign Language House at Hillsboro. Residence students enjoy cultural and educational programs with the participation of 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, 9.160 Comparative Syntax, and at least four graduate-level (250-level or above) 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 also are suggested: 9.15 French Textual Analysis 3 s.h.

9.155 Commercial and Technical Translation 3 s.h.
9.191 Translation Project 3 s.h.
Two courses each in French civilization and literature 12 s.h.
Electives recommended as adjuncts are courses in French styloics and critical analysis, another language, economics, political science, and/or business administration 12 s.h.

Minor in French
The requirements for a minor in French are 15 semester hours with a grade-point average of 2.00. Twelve of these must be taken at The University of Iowa in courses numbered 10 or above. Courses numbered in the 10s, 150-152, and 158 do not count toward the minor in French.

Bachelor of Arts in Italian
Requirements for the major in Italian include:

18.112 Intermediate Italian 6 s.h.
18.112-114 Advanced Composition and Civilization 7 s.h.
18.105-106 Introduction to Italian Literature 6 s.h.
18.130-132 Medieval and Renaissance Italian Literature 8 s.h.
A 0-600 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 grade-point average of 2.00. Twelve of these must be taken at The University of Iowa in courses numbered 10 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 3.30 overall grade-point average, a 3.5 departmental 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 adviser.

Summer Program in France
The department is cooperator of a summer program in France for students enrolled in the three Iowa Regents universities. Eligibility for the program requires a good knowledge of French (two years of college-level preparation is recommended), but students need not be French majors.

Doctor of Philosophy
To fulfill requirements for the Ph.D. in French, candidates must complete at least five years of study, of which at least one must be spent in residence at The University of Iowa. They must pass a comprehensive examination and make a successful 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.

Graduate students 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 9.271 Thesis. Students writing the dissertation 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. Students 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. Successful completion of the M.A. program, however, does not necessarily qualify a student to proceed to the Ph.D.

For students enrolling in the M.A. at The University of Iowa, the M.A. comprehensive examination committee makes a recommendation concerning admission to the Ph.D. program. Students applying for doctoral candidacy with the M.A. credited at another institution are advised to contact the departmental chair on conditional status when admitted. This status is reviewed after one semester of residence.

Appointments
Teaching and research assistantships and University fellowships and scholarships are available to qualified graduate students (see the "Graduate College" section of the
French Courses
A detailed description of courses offered each semester is available in the department office. All courses are given in French unless otherwise indicated. Courses numbered 150-199 are intended primarily for advanced undergraduates; a graduate student should consult with his or her advisor before registering for these courses. Courses numbered 140-149 are given in English and do not count toward the requirements for the major or minor in French, but may be taken as electives. Consultation with the advisor is recommended prior to registration.

Students who have had significant experience with French through study or foreign residence are required to take placement tests prior to the opening of each term.

A student may not repeat for credit a course that is prerequisite to, or whose equivalent is prerequisite to, a higher-level course that the student has already completed.

Primaryy for Undergraduates

6408 Cooperative Education Internship 4.0 h.
61 Elementary French 6.0 h.
For students who have no knowledge of French. GER: foreign language.
62 Elementary French 4.0 h.
GER: foreign language. Prerequisite: 511 is equivalent.
67 French for Professionals 2.0 h.
Basic conversational French for travelers. Open to anyone, French or English, who has basic French. Prerequisite: 511 or equivalent.
61 Introductory French 3.0 h.
For students who do not plan to continue the study of French after the second year. GER: foreign language. Open only to non-majors. Prerequisite: 511 or equivalent.
6101 Introductory French 3.0 h.
Open to anyone, French or English, who has little or no knowledge of French. Prerequisite: 511 or equivalent.
6102 Conversation 3.0 h.
May be taken concurrently with 511, 510. 511, 61-12
62 French Conversation 2.0 h.
May be taken concurrently with 511, 510. 511, 61-12
61 French Conversation 2.0 h.
May be taken concurrently with 511, 510. 511, 61-12
61 French Conversation 2.0 h.
May be taken concurrently with 511, 510. 511, 61-12
61 French Conversation 2.0 h.
May be taken concurrently with 511, 510. 511, 61-12
62 French Conversation Second Year 2.0 h.
Prerequisite or equivalent.
82 French Special Work 2.0 h.
Prerequisite: 82 or equivalent.
5108 Elementary French Laboratory Course 1.0 h.
First-year French in one semester. GER: foreign language.
61 Second-Year French and Communities 2.0 h.
Recommended for students who intend to study French or who want to improve their written and oral command of French. GER: foreign language. Prerequisite: 511 or equivalent.

French for Undergraduates and Graduates

8001 French for Reading/Research 1.0 h.
For doctoral candidates in other departments who want reading ability in the purposes of research.
8102 French for Reading/Research 1.0 h.
For doctoral candidates in other departments who want reading ability in the purposes of research.
8106 French for Reading/Research 1.0 h.
For doctoral candidates in other departments who want reading ability in the purposes of research.
8001 Introduction to French Literature: Medieval and Renaissance 3.0 h.
Prerequisite: 511 or equivalent.
8009 Introduction to French Literature: Baroque and Eighteenth Century 3.0 h.
Prerequisite: 511 or equivalent. 510 or equivalent.
8009 Introduction to French Literature: Nineteenth Century 3.0 h.
Prerequisite: 511 or equivalent.
8100 Introduction to French Literature: Twentieth Century 3.0 h.
Prerequisite: 511 or equivalent.
8101 Third-Year Compositions 3.0 h.
Prerequisite: 511 or equivalent.
8102 Third-Year Compositions 3.0 h.
Prerequisite: 511 or equivalent.
8123 French Civilization 3.0 h.
Survey of French social history from the Middle Ages to 1950. Prerequisite: 811 or 816 or equivalent.
8114 French Civilization 3.0 h.
Survey of French social history from 1950 to the present. Prerequisite: 811 or 816 or equivalent.
8114 French Civilization 3.0 h.
Survey of French social history from 1950 to the present. Prerequisite: 811 or 816 or equivalent.
8114 French Civilization 3.0 h.
Survey of French social history from 1950 to the present. Prerequisite: 811 or 816 or equivalent.
8114 Business French 3.0 h.
Concentration on building interpersonal and business skills in French. Open to any major. GER: foreign language and business administration.
8115 Summer Program in France 3.0 h.
8129 Internship in France 2.0 h.
Open to French majors and minors who are starting their foreign language program or have completed all required courses. Prerequisite: 811 and either 501 or 511 or 516, or consent of instructor.
82 French Conversation Third Year 2.0 h.
Prerequisite: 511 or equivalent.
8106 French Conversation Fourth Year 3.0 h.
Prerequisite: 516 or equivalent. 511 or equivalent.
8116 Literatures and Society 3.0 h.
8142 French and Francophone Urban and Cultural Boundaries through Literature to Imprison our Perceptions of France and Francophone Societies. Prerequisite: 511 or 516 or equivalent. 511 or equivalent.
8147 French Cinema and Culture 3.0 h.
Open to French majors and minors. Open to non-French majors. 511 or 516 or equivalent. 511 or equivalent.
8150 World History in French Language 3.0 h.
Offered only in 5111, 5115, 5119, 5226, 5251.
8152 French Language and Literature in Foreign Language Documentation 3.0 h.
8151 French Analysis 3.0 h.
Graduate study through analysis of representative texts. Prerequisite: 811 or equivalent.
8152 Commercial Law in Legal Translation 3.0 h.
Theoretical and practical elements of written and oral professional translation. Prerequisite: 8112 or consent of instructor. Observational/consumer regulations in 4113.
8156 Parliaments and Parliaments 3.0 h.
Overview of different aspects of representative bodies. Open to non-French majors. 5113 or equivalent. 5113 or equivalent.
8156 Topics in Foreign Language 3.0 h.
Overview of different aspects of representative bodies. Open to non-French majors. 5113 or equivalent. 5113 or equivalent.
8201 Contemporary France 3.0 h.
Study of selected topics of major importance of the Fifth Republic. Prerequisite: 8111 or equivalent.
8201 Francophone Literature of the African Diaspora 3.0 h.
Survey of African and Caribbean literature written in Francophone Africa or newly translated from African languages. Prerequisite: 8112 or equivalent. Some: 8112, 8115, 8116.
8206 Quebec Literature 3.0 h.
Prerequisite: 8112 or equivalent.
8204 French Civilizations through the Arts 3.0 h.
Prerequisite: 8112 or equivalent.
8207 Advanced French Presentation 3.0 h.
Required for majors. Prerequisite: 8112 or equivalent.
8207 The French Writer and Social Criticism 3.0 h.
Prerequisite: 8112 or equivalent.
8207 Topics in French Literature 3.0 h.
Prerequisite: 8112 or equivalent.
8208 Women Writers 3.0 h.
Prerequisite: 8112 or equivalent.
8210 Women in Literature 3.0 h.
Prerequisite: 8112 or equivalent.
8212 Colloidal Approach to French Literature 3.0 h.
Prerequisite: 8112 or equivalent.
8214 Twentieth-Century French Poetry 3.0 h.
Prerequisite: 8112 or equivalent.
8214 Twentieth-Century French Prose 3.0 h.
Prerequisite: 8112 or equivalent.
8214 The Novel 3.0 h.
Prerequisite: 8112 or equivalent.
8214 Comics and Visuals 3.0 h.
Prerequisite: 8112 or equivalent.
8218 Heroes and Heroines Middle Ages and Renaissance 3.0 h.
Prerequisite: 8112 or equivalent.
8218 French Classical Literature 3.0 h.
Prerequisite: 8112 or equivalent.
8218 French Literature of the Enlightenment 3.0 h.
Prerequisite: 8112 or equivalent.
8218 Nineteenth-Century French Prose 3.0 h.
Prerequisite: 8112 or equivalent.
8218 Twentieth-Century French Novel 3.0 h.
Prerequisite: 8112 or equivalent.
8236 Special Work 3.0 h.
8237 Special Work 3.0 h.
8237 Special Work 3.0 h.
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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 in a prerequisite to, or whose equivalent is a prerequisite to, a higher-level course that they have already completed.

Primarily for Undergraduates
413 Elementary Italian 3 h.
For students who have no knowledge of Italian. GER: foreign language. Prerequisite: 411 or equivalent.

414 Elementary Italian 4 h.
GER: foreign language. Prerequisite: 413 or equivalent.

111 Intermediate Italian 3 h.
GE: foreign language. Prerequisite: 414 or equivalent.

112 Intermediate Italian 3 h.
GE: foreign language. Prerequisite: 414 or equivalent.

30-30 Conventional Italian 4 h.
Prerequisite: 112 or 111.

30-30 Conventional Italian II 4 h.
Prerequisite: 112 or 111.

115 Special Work

For Undergraduates and Graduates
10-10 Introduction to Modern Italian
Prerequisite: 112 or 111.

10-10 Introduction to Modern Italian Literature
Continuation of 10-10. May be taken as an independent study. Prerequisite: 112 or equivalent.

111 Advanced Compensive and Composition
Prerequisite: 112 or equivalent.

113 Advanced Compensive and Composition
Prerequisite: 112 or equivalent.

116 Studies in Italian Literature
Selected topics in the history of the Italian language. May be repeated. Prerequisite: 111 or equivalent.

119 Medieval and Renaissance Italian Literature

123 Medieval and Renaissance Italian Literature

125 Special Work

126 Topes in Italian Civilization

126 Awards in Modern Italy

131 Topes in Italian Literature

131 Medieval and Renaissance Italian Literature

133 Special Work

135 Special Work

136 Special Work

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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 pursuing the B.G.S. program for the 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. adviser. 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. A limited number of substitutions may be allowed, but only if they are clearly consistent with the standards of concentration in the approved plan of study. Students approved to advance by the B.G.S. adviser. Unauthorized substitutions may be designated as elective courses.

Significant changes in the focus of a student’s plan of study may require the resubmission and approval of a revised plan of study. The student’s academic adviser will coordinate the changes.

Forms and guidelines for preparing the plan of study are available in the Baccalaureate of General Studies Interdepartmental Studies Office, 116 12th Avenue South, or in the Office of Academic Programs, 116 12th Avenue South. 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. The total may be toward the 124 semester hours required for graduation, but only 38 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 option 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 below in this section.

The pass/fail 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 with their B.G.S. adviser or with the B.G.S. coordinator. University of Iowa Guided Correspondence Study advanced courses count toward the advanced course work requirements, but the College of Liberal Arts residence requirement must be met by other U.C. 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

No more than 40 semester hours of credit in one academic department may count toward the 124 semester hours required for graduation. The total includes both upper- and lower-level course work, and both U.G. and transfer course work.

Students requiring a B.G.S. degree must earn at least 38 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, satisfactory/fail, and academic standards apply to B.G.S. students.

Advanced Course Numbers 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 2.0 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

4590 Seminar in American Cultural Studies 3 s.h.

Art and Art History

1860 Advanced Painting 3 s.h.

1862 Undergraduate Printmaking 3 s.h.

3717 Undergraduate Sculpture Workshop 3 s.h.

Asian Languages and Literature

3911 Second-Year Sanskrit 3 s.h.

3994 Undergraduate Language Study 3 s.h.

3995 Non-Western Literary Traditions 3 s.h.

Botany

233 Iowa Flora 3 s.h. (accepted as advanced course work only if 2331 Plant Taxonomy also is completed)

Communication Studies

All courses numbered 368-699 and above are acceptable.

Comparative Literature

1440 Major Texts in World Literature 3 s.h.

1461 Major Texts of World Literature I 3 s.h.

3450 Non-Western Literary Traditions 3 s.h.

6911 Undergraduate Seminar 3 s.h.

Computer Science

220-21 Algorithms and Data Structures 3 s.h.

220-23 Programming Language Concepts 3 s.h.

220-31 Digital Systems and Computers 3 s.h.

220-32 Introduction to Systems 3 s.h.

220-51 Computer Graphics 3 s.h.

220-53 Elementary Numerical Analysis 3 s.h.

Arts and Architecture

1180 Advanced Painting 3 s.h.

1862 Undergraduate Printmaking 3 s.h.
Dance
122:59 Independent Study arr.
122:92 Independent Choreography arr.

Dental Hygiene
60:2 Human Histology 4 s.h.

English
All courses numbered above 81.10 except BG courses

Geology
12:41 Mineralogy 4 s.h.
12:52 Elementary Petrology 4 s.h.
12:92 Structural Geology 5 s.h.

Mathematics
22:27 Introduction to Linear Algebra 4 s.h.
22:38 Calculus III 3 s.h.
22:41 Differential Equations for Engineers 3 s.h.
22:42 Vector Calculus for Engineers 3 s.h.
22:50 Elements of Group Theory 3 s.h.
22:55 Fundamental Properties of Spaces and Functions 3 s.h.
22:70 Foundations of Geometry 3 s.h.
22:72 Elementary Numerical Analysis 3 s.h.

Music
25:14 History of Music I 3 s.h.
25:16 History of Music II 3 s.h.

Physical Education and Sports Studies
28:33 Physio-Social Dimesnions of Physical Activity 3 s.h.

Spanish and Portuguese
35:30 Spanish Conversation Junior Level 2 s.h.
35:35 Spanish Conversation Senior Level 2 s.h.

Statistics and Actuarial Science
22:30 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.

Theatre Arts
49:13 Shakespeare 3 s.h.
49:60 Play Script Analysis 3 s.h.
49:65 Basic Playwriting 3 s.h.

Relate Considerations
All courses numbered with the prefix 7 (College of Education) are considered to be in one department.

All courses numbered with the prefix 8 (College of Business Administration) except 85:0 (economics) is also considered a department in the College of Liberal Arts) are considered to be in one department.

Honors
B.G.S. students qualify for membership in the College of Liberal Arts Honors Program by maintaining a cumulative grade-point average of at least 3.25. Graduating with honors usually includes the successful completion of the honors requirements in the particular department. A list of departmental requirements is available from the B.Lit arts honors program or from the B.G.S. coordinator.

Career Considerations
Since the B.G.S. degree affords opportunities outside the traditional degree pattern, students must create programs of study that meet their individual educational and career objectives. Those who plan to seek employment immediately following graduation should familiarize themselves with the educational background and qualifications required by employers and should include appropriate courses in their programs of study.

Students preparing for advanced study should become familiar with the admissions requirements of graduate or professional schools. The easier the student decides on pursuing graduate or professional study, the easier it is for them to complete any necessary prerequisites.

B.G.S. students who wish to pursue a cohesive career program and maintain a competitive grade-point average may be considered equally with students who earn higher undergraduate degrees for employment or admission to some graduate and professional schools.

For More Information
Information about the Bachelor of General Studies program or the Interdepartmental Studies Advisory Office, 113 Schaeffer Hall.

Courses
BS/B.S. Cooperative Education Internship 0-6 s.h.

GENETICS
Chair: George Clines (Microbiology)
Profs: Raymond Crown (Biophysics), John Deaton (Biochemistry), Michael Drew (Microbiology), Joseph Fradette (Biologist), Gary Gaudette (Genetics), Susan Hansen (Pediatrics), Victor Issakson (Pediatrics), Richard Mayer (Physiology and Biophysics), John Messenger (Biology), Roger Mekans (Biology), J. Gordon Miller (Biology), Howard Pelley (Pediatrics), William Rodwell (Pediatrics), David Satt (Biology), Enric Tarr (Microbiology), Mark Strosn (Microbiology), C. Mott (Biochemistry), Choo-Fung Wu (Biology).

Associate professors: Wayne Carser (Botany), Steve Crip (Microbiology), Gordon Gidden (Chemical Medicine), D. Xu-Jing-Ching Lin (Biology), Robert C. Miller (Psychology), Andrew Turek (Pathology), Wei-Wei Wang (Biology).

Assistant professors: Robert Biehn (Bacteriologist), Ian Foster (Biology), Patricia Gauer (Biochemistry), Wayne Johnson (Physiology and Biophysics), Andrew Magda (Bacteriologist), Andrew Munro (Physiology and Biophysics), Ming-Ching Hsieh (Biochemistry), J. B. Stroh (Biology). Graduate degree offered: Ph.D. in Genetics.

Graduate Programs
The interdepartmental Ph.D. program in genetics is designed to promote collaborative investigation and individual interaction among students and faculty participants affiliated with several different departments.

Students who enroll in the program are encouraged to obtain a broad background in genetics ranging from molecular to population genetics. Within this context, course requirements are flexible enough to permit students to tailor their formal course work to their individual needs.

All students enrolled in the program are required to take 99:110 Biochemistry and Molecular Biology I (2.25 credits) Seminar (same as 37:15, 41:25, 99:25), and either 37:171 Molecular Genetics or 14:52 Nanotechnology. In addition, they must earn a total of at least 10 credits in mathematical and microfial genetics, cell and developmental genetics, and quantitative and population genetics.

Even more important than formal course work is the opportunity to begin to conduct research in genetics. Students are encouraged to begin their own research as quickly as possible, research interests of the participating faculty include virtually all areas of genetics, ranging from bacteriophage genetics to human medical genetics. In each area of genetics, there is a group of faculty members who have closely related interests. The University is also strong in several related disciplines, including microbial phylogeny, genomics, virology, genetics, biochemistry, and developmental biology, all of which contribute significantly to the graduate training program.

In addition to completing research and course work, students must pass a comprehensive examination usually within their first two years in the program.

Admission
Prospective doctoral students in genetics should have a strong undergraduate background in science, particularly in general genetics, organic chemistry, introductory physics, and mathematics, as well as a strong commitment to genetic research and teaching. Students can make up deficiencies in a particular area during their first year of graduate study.
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 1, 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 Scientist 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>99:100</td>
<td>Biochemistry and Molecular Biology I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>99:223</td>
<td>Gene Expression</td>
<td>1-2 s.h.</td>
</tr>
<tr>
<td>2104</td>
<td>Genetic and Biogenesis of the Cell</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>215C</td>
<td>Plant Molecular Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>61270</td>
<td>Developmental Biology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>61288</td>
<td>Molecular Biology of Animal Viruses and the Eukaryotic Cell</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>61270</td>
<td>Topics in Molecular Biology</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

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 electives in geography courses as part of a liberal education. The department also participates in interdisciplinary programs involving global, urban, and environmental components.

Bachelor's Degrees

Each student majoring in geography must complete one of the following three concentrations: urban and regional studies, international development studies, or environmental studies.

All 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:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>225C</td>
<td>Introduction to Computing with FORTRAN</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>225C</td>
<td>Introduction to Programming with Pascal</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

Bachelor of Science students must satisfy a mathematics requirement consisting of one of the following two pairs of courses:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>221B</td>
<td>Calculus I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>221B</td>
<td>Calculus II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>221B</td>
<td>Calculus I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>221B</td>
<td>Calculus II</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>
### 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, or 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 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 courses in mathematics, statistics, 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 for details.

#### Introductory Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>44:1 Introduction to Human Geography</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>44:2 Introduction to Physical Geography</td>
<td>4 s.h.</td>
</tr>
</tbody>
</table>

At least one of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>44:11 Introduction to Social Geography</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44:15 Introduction to Political Geography</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Intermediate Courses

At least two of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>44:13 Location Strategy of Firms</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44:12 Industrial Location</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44:13 Introduction to Transportation</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44:15 Urban Geography</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

#### Methods Courses

All of these:

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>44:10 Statistical Methods of Geographical Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44:19 Computer Methods in Urban Geography</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44:150 Undergraduate Seminar in Geography Major</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

#### Advanced Courses

Students are required to take at least one course from each group A and B.

**Group A**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>44:134 Methods of Transportation Analysis</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44:135 Economic Theory of Location</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44:136 Economic Analysis of Urban Spatial Structure</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

**Group B**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>44:106 Contemporary Europe: Interaction and Change</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44:171 Geography of the U.S. and Canada</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>44:175 Locational Conflict</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### International Development Studies

The concentration in international development studies is designed for students interested in the processes of economic, social, and political development, particularly as they affect the countries of the Third World. This concentration gives students a better understanding of regional and national development in international and cross-cultural perspective. Students who are interested in the problems of developing countries and who wish to examine competing theories of development intended to replace international and regional inequalities will find this concentration helpful.

Students concentrating on international development studies are required to complete the following sequence of courses. Prerequisites are listed in course descriptions. See "Courses" at the end of this section for details.

#### Introductory Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>44:1 Introduction to Human Geography</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>44:2 Introduction to Physical Geography</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>44:19 Contemporary Environmental Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>29:5 Chemistry and Physics of the Environment (or a more advanced course in chemistry or physics)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

### Environmental Studies

The undergraduate program in environmental studies is designed for students who have clear expectations of 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 gives students the relationships among these processes and helps students acquire the 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 for details. Students are required to take all summer hours of intermediate and advanced courses.

#### Introductory Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>44:1 Introduction to Human Geography</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>44:2 Introduction to Physical Geography</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>44:19 Contemporary Environmental Policy</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>29:5 Chemistry and Physics of the Environment (or a more advanced course in chemistry or physics)</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

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### Liberal Arts • Geography

44:16 Introduction to Economic Geography | 3 s.h.  |

44:106 Statistical Methods and Regression Analysis | 3 s.h.  |

44:109 Computer Methods in Geographical Analysis | 3 s.h.  |

44:150 Undergraduate Seminar for Geography Majors | 3 s.h.  |

Advanced Courses

44:194 Geographic Perspectives on Development | 3 s.h.  |

At least two of these:

44:102 Planning and Geography of Underdevelopment | 3 s.h.  |

44:103 Geography of the Newly Industrializing Countries | 3 s.h.  |

44:172 Development Planning and Policy | 3 s.h.  |

One of these:

44:181 African Development | 3 s.h.  |

44:184 Geography of the Middle East | 3 s.h.  |

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**Method: Courses**

44:106 Statistical Methods and Regression Analysis | 3 s.h.  |

44:109 Computer Methods in Geographical Analysis | 3 s.h.  |

44:150 Undergraduate Seminar for Geography Majors | 3 s.h.  |

Advanced Courses

44:194 Geographic Perspectives on Development | 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 purposes of study. The beginning-level courses 44.1 Introduction to Human Geography, 44.31 Introduction to Social Geography, 44.43 Introduction to Economic Geography are approved for the General Education Requirements in social sciences and cultural skills. 44.157 Third World Development Support is approved for the General Education Requirement in natural sciences. These courses serve as part of a liberal education. Other courses also may be elective as individual electives. These include 44.15 Introduction to Physical Geography, 44.65 20th Century Cities, 44.125 Water in the Biosphere, 44.128 Drainage Basin Form and Process, 44.165 Geography of the Modern World, and 44.175 Energy in Contemporary Society.

Graduate Programs
The goals of the department's graduate programs are to prepare students to carry on creative and productive research in selected areas, to provide opportunities for students to work in the use and further elaboration of theory, and to prepare students for positions in research, teaching, or some areas of applied geography. Success in achieving these goals has been demonstrated by the strong career placement of University of Iowa graduates. In 61 positions on college and university faculties, in private research organizations, and in business and government.

The department offers specialized instruction through graduate study at the college level for those pursuing master's or doctoral degrees. 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: locational analysis, 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 plan 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 related to urban geography are
included in three subprograms—loca
tional analysis, political geography, and
regional development—while the traditional
emphasis on economic geography is no
longer included in locational analysis and
regional development. The more quantitative
perspectives of regional science are
included in locational analysis and
regional development 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
must be in numbered 500-level courses.

(See below, students must:

Complete at least one course not in
their own subprogram from the following
introductory graduate courses: 44.121, 44.123,
44.125, 44.126, 44.128, 44.134, 44.137, 44.175,
44.187, 44.194, or 44.210.

Enroll in the department's seminar course (44.350)
in research (3 credits) during each semester
in residence.

Satisfy the department's B.S. degree
requirements or their equivalents in
mathematics, statistics, and computer
programming, and

Complete, with a grade of B or better, at least
one 3-semester-hour quantitative
methods course from the two courses
approved by the faculty.

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 6 semester hours of credits
may be earned for thesis work.

Students who elect the M.A. without
thesis must pass a written examination and,
in most sub programs, an oral examination.

For students electing the M.A. with a thesis, the
written examination can be waived and the
thesis defense serves as the oral M.A.
examination.
Students are expected to have an undergraduate background relevant to 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-aptitude orientation of the student's background. This emphasis is placed on the strength and suitability of their prior training; however, studies may be required to pass the qualifying examination for the degree. Each of the M.A. subprograms is designed to be completed in four semesters. Students are advised to use these additional hours to elect graduate courses in other subprograms in geography and 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 breadth knowledge of a field of geography and its literature and special expertise in geographic research. The student usually represents the general area in which the B.S. or B.A. degree is required for the M.A. Each of the M.A. subprograms is designed to be completed in four semesters. Students are advised to use these additional hours to elect graduate courses in other subprograms in geography and other university departments and programs, thereby tailoring their programs of study to their individual interests.

Complete at least one additional quantitative method course (3 semester hours) that is at a level above that required for the B.S. degree and is chosen from a list of courses approved by the faculty (students in the Ph.D. program are required to fulfill M.A. and Ph.D. quantitative methods requirements—see list of 90 semester hours during their first year in residence). Complete one additional research seminar under the direction of a faculty member who is not related to the student's research. The seminar may be completed in the regular or evening division. Complete one additional research seminar under the direction of a faculty member who is not related to the student's research. The seminar may be completed in the regular or evening division. Complete one additional research seminar under the direction of a faculty member who is not related to the student's research. The seminar may be completed in the regular or evening division.

Admission

In addition to the general rules and regulations set forth in the University of Minnesota Graduate School, 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.

Financial Aid

A number of graduate stipends—course work or teaching assistantships—are available. Awards are based on merit. Students usually must have a combined score of at least 1500 on the 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 equipment and a computer cartography and Macintosh work stations, digitizers, and plotters for research. The laboratories support a variety of GIS software packages including ER/ESRI, SURVEY, MAP, MAPINFO, 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 Geographic Information Systems Laboratory in the University's TUYREK broadband communication network which provides high-speed access to graphics, data management, and information systems on 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 plotter.
Total: At least 38 s.h.

*Students may substitute 12/23 Earth History and Resources for 12/24 Introduction to Geology and Evolution and the History of Life for 12/24 Evolution of the Earth.

The geology major requires at least 10 semester hours of college mathematics, including 12/24 Calculus II or 22/236

12/24-25 Geology and Paleontology. Computer science or statistics courses may be counted toward the two-course-hour requirement. Additional mathematics courses are strongly recommended.

Eight semester hours of physics, 8 semester hours of chemistry, and a course in a lab in a biological science are also recommended.

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 fundamentals of geology or in interdisciplinary environmental programs.

General Education Track

The general track provides a background in geology and allied fields applicable for careers in conservation, urban planning, or preprofessional training. With appropriate course work and recommendations for a B.A. program also provides a base for high school or college teaching in earth science. See the "College of Education" section of the Catalog. The following courses are required:

- 12/25 Introduction to Geology 4 s.h.
- 12/26 Historical Geology 4 s.h.
- 12/24-25 Geology and Paleontology 4 s.h.
- 12/23 Principles of Paleontology 3 s.h.
- 12/24 Field Trip (two sections) 4 s.h.
- Computer electives 12 s.h.

Total: 35 s.h.

*Students may substitute 12/23 Earth History and Resources or 12/24 Introduction to Environmental Geology for 12/24 Introduction to Geology, and 12/24 Evolution and the History of Life for 12/24 Evolution of the Earth.

The B.A. in geology requires at least 10 semester hours of college-level mathematics, which may include computer science or statistics. Eight semester hours of chemistry are also required, and courses in other sciences and social sciences appropriate to the student's objectives are recommended.

Environmental Track

Students who are concerned with environmental issues or are interested in career opportunities in solving environmental problems have the option of pursuing a B.A. degree via an environmental geology track. This track is divided into a broader base for those who wish to become informed and fully knowledgeable in environmental issues (e.g., to give seminars, teach environmental courses, and become policymakers) or for those who wish to work as environmental geologists. The environmental track has been further subdivided into engineering geology, environmental geology, geochemistry, and hydrogeology specialization courses. The department encourages students who are interested in either of these options to consult the detailed outline for the environmental track from the geology office, 123 Troshelli Hall, for the Undergraduate Academic Advising Center.

Minor

A minor requires at least 15 semester hours of geology courses with a minimum grade-point average of 2.00. 12/22 Earth History and Resources and 12/21 Introduction to Environmental Geology may be counted as courses in geology.

At least 12 of the 15 semester hours must be taken in advanced geology courses taken at The University of Iowa. All geology courses numbered 100 and above, except 12/103 Physical Geology and 12/107 Historical Geology, may be taken as advanced courses. In addition, 12/41 Mineralogy, 12/51 Elementary Petrology, and 12/52 Structural Geology are considered advanced courses for the baccalaureate degree. College-level courses in mathematics, physics, chemistry, and biology usually are required as collateral work for geology students. Those seeking a minor in geology should be sufficiently prepared in the areas of supporting science before they take advanced courses in geology.

Recommended advanced courses in geology that deal with important areas of Earth sciences and earth processes are:

- 12/41 Mineralogy 4 s.h.
- 12/52 Sedimentary Petrology 4 s.h.
- 12/52 Structural Geology 3 s.h.
- 12/53 Principles of Paleontology 3 s.h.
- 12/52 Sedimentology 3 s.h.
- 12/53 Principles of Stratigraphy 3 s.h.
- 12/80 Solid Earth Geophysics 3 s.h.

Joint Programs

Joint programs can be arranged, usually with chemistry, physics, biology, and anthropology.

Original Research

A junior or senior who is ready to pursue original research for credit in geology may select a faculty member or graduate student with a current research project or may initiate a small-scale project involving a combination of field, laboratory, and library investigation. Independent study and research is encouraged. Undergraduate classes have produced many reports that subsequently were published.

Honors

A degree with honors in geology is offered. Students in the honors program can elect a senior thesis.

Graduate Programs

Students planning to take graduate work in geology should have completed geology and supporting courses equivalent to those 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 11/107 Geologic Orientation. All graduate students in geology must perform teaching, research, or related appropriate services as part of the degree program.

Prospective graduate students in geology should consult "Rules and Regulations" in the "Graduate College" section of the Catalog for general 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.

Earning graduate students are assigned to a general graduate adviser. 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 adviser and any 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 course work. The student is responsible 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 field 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 minor's examination, the candidate must have at least a 3.00 grade-point average on graduate courses that he or she is taking toward the 30-semester-hour minimum requirement for the degree with at least 24 semester hours at residence at The University of Iowa. Additionally, the grade-point average on all graduate geology courses should be at least 3.00. No more than 6 s.h. of graduate work taken before the degree research may be counted toward the 30-semester-hour minimum required 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 similar 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 involved and its value and broader applications and implications. No college credit is granted.

The M.S. degree without thesis requires at least 30 semester hours of graduate coursework, of which at least 8 semester hours must be earned in other departments of the University.

The faculty 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 study 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, following at least two full-time semesters in residence beyond the first 24 semester hours of graduate study.

Departmental language and tool requirements for the Ph.D. degree may be met either by achieving competence in two languages or in one language and one tool, 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 tool areas. In exceptional circumstances, the faculty may approve other languages or tool areas. Courses in related disciplines, such as botany, chemistry, physics, and biology, are not regarded as satisfying tool requirements, although they may provide indispensable background for geological specialization areas.

Course work taken to satisfy language and tool requirements may not be applied to credit requirements for the degree.

The following are the minimum requirements.

Satisfaction of course 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, or courses generally 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 one subdivision in each of 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 geology

Mineral economics

Mineralogy

Crytalllography

Determination of minerals

Crystal structure and mineral chemistry

Igneous and Metamorphic Petrology

Igneous petrology

Migmatitic petrology

Aqueous geochemistry and thermodynamics

Structural Geology

Geosynthetics

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

Pleistocene Studies

Pleistocene geology

Vertebrate paleontology

Quaternary palynology

Palaeoecology

Fossils

Paleontology

Fossilography

General Geomorphology

Glacial and Pleistocene

Remote Sensing

Environmental Geology

Hydrogeology

Remote Sensing Engineering program

Other minor subjects

Analytical chemistry

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 mineralogy/petrology lab (X-ray diffractometer, petrographic, polarizing, petrography, gas chromatograph, spectrophotometer, microscope), sedimentology lab (X-ray diffraction lab, petrographic facilities, cathodoluminescence, palynology facility, inverse elutriate, petrological, including a major repository, quantitative lab, geophysics, granite meter, field and rock magnetometers, susceptibility meter, spectrophotometer, high-purity apparatus), Geological Survey Bureau (located, in some building on the department, with equipment: core repository and remote sensing lab), network of microseismographic stations and magnetometers, in-house terminal for the University of Iowa Computing Center (IBM 310, Prime 70’s, HP1000 computers), trailer-mounted soil probe, scanning electron microscope, microprobe, geology library with 50,000 volumes) journals, and 75,000 maps.

Cooperative Activities

The department has collaborative work with the Geological Survey Bureau, and geology students occasionally work on projects for the survey.

The Departments of Geology, Geography, Anthropology, Chemistry, Botany, and Biology cooperate in sharing equipment, expertise, and graduate programs and degree requirements.

The geology department is an important participant in the Iowa Quaternary Studies group, an interdisciplinary program that
Germanic studies offered in another department (approval of major advisor required). 3 s.h.

"May be taken in either order.

German majors, both graduate and undergraduate, are urged to supplement their degree programs with relevant courses in areas such as German art, history, philosophy, and business.

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 (13100 and above) at The University of Iowa. All courses numbered 100 and above count toward the minor except 13118, 13123, 13124, 13127, 13128, and 13160.

Certification for Teaching Minor

In addition to the basic program requirements for the first and second year, students must take the following courses to qualify for the certification in German:

13191 Introduction to Modern German Literature I 3 s.h.
13192 Introduction to Modern German Literature II 3 s.h.
13193 Composition and Conversation I 3 s.h.
13194 Composition and Conversation II 3 s.h.
13111 Advanced Composition and Conversation 3 s.h.

Honors

Honors in German is open to exceptional 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:

13190 Honors Program in German 3 s.h.
13191 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 faculty director of studies on a regular basis.

The program concludes with presentation of an honors thesis to a faculty committee of at least three members.

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 30 semester hours, or equivalent, of graduate-level work and fulfillment of other requirements of the Department of German and Italian College (see the "Graduate College" section of the Catalog).

Students who have not completed major courses or their equivalents in the department's undergraduate program must take these 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 30 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 28 semester hours of course work and is considered a terminal degree.

The same course requirements qualified for the M.A. with thesis apply to candidates for the M.A. without thesis, with the approval of the graduate advisor. general 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.

Competence may be demonstrated either by submitting proof of having taken the required course work with a grade-point average of 3.00 or higher, or by passing an exam at the fourth-year college level as determined by the appropriate language department.

Doctor of Philosophy

A candidate concentrating in literature 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 German and of a modern Scandinavian language or Dutch.

Conversance 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 Finkler prizes to students of distinction.

Special Facilities

Students have the opportunity to improve their competence and command of German by working with recorded master-tape instruction. The program may benefit from the computer-assisted instruction program.

An extensive collection of books and periodicals in the University Libraries facilitates research and instruction 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 Regents 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 an intensive basis. A second four-week
Language Courses for Graduate Nonmajors

13113 Introductory German I
13115 Introductory German II
13118 Intermediate German I
13120 Intermediate German II
13122 Advanced German Reading I
13123 Advanced German Reading II
13127 Accelerated German Reading I
13128 Accelerated German Reading II

For Graduates

15988 Advanced Studies
15989 Special problems of German literature and language
15989 Introductory German I
15990 Introductory German II
15991 Introductory German III
15992 Introductory German IV
15993 Introductory German V
15994 Introductory German VI
15995 Introductory German VII

15995 Introductory German VIII

15995 Introductory German IX
15996 Introductory German X

15997 Introductory German XI
15998 Introductory German XII

15999 Introductory German XIII

15999 Introductory German XIV

15999 Introductory German XV

15999 Introductory German XVI

15999 Introductory German XVII

15999 Introductory German XVIII

15999 Introductory German XIX

15999 Introductory German XX

15999 Introductory German XXI

15999 Introductory German XXII

15999 Introductory German XXIII

15999 Introductory German XXIV

15999 Introductory German XXV

15999 Introductory German XXVI

15999 Introductory German XXVII

15999 Introductory German XXVIII

15999 Introductory German XXIX

15999 Introductory German XXX

15999 Introductory German XXXI

15999 Introductory German XXXII

15999 Introductory German XXXIII

15999 Introductory German XXXIV

15999 Introductory German XXXV

15999 Introductory German XXXVI

15999 Introductory German XXXVII

15999 Introductory German XXXVIII

15999 Introductory German XXXIX

15999 Introductory German XL

15999 Introductory German XLI

15999 Introductory German XLII

15999 Introductory German XLIII

15999 Introductory German XLIV

15999 Introductory German XLV

15999 Introductory German XLVI

15999 Introductory German XLVII

15999 Introductory German XLVIII

15999 Introductory German XLIX

15999 Introductory German L

15999 Introductory German LI

15999 Introductory German LII

15999 Introductory German LIII

15999 Introductory German LIV

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15999 Introductory German LXXXVI

15999 Introductory German LXXXVII

15999 Introductory German LXXXVIII

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15999 Introductory German XC

15999 Introductory German XCI

15999 Introductory German XCII

15999 Introductory German XCIII

15999 Introductory German XCIV

15999 Introductory German XCV

15999 Introductory German XCVI

15999 Introductory German XCVII

15999 Introductory German XCVIII

15999 Introductory German XCIX

15999 Introductory German C

15999 Introductory German CI

15999 Introductory German CII

15999 Introductory German CIII

15999 Introductory German CIV

15999 Introductory German CV

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15999 Introductory German CXI

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15999 Introductory German CXIV

15999 Introductory German CXV

15999 Introductory Germa
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 undergraduate to different fields 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 foreign language in order to develop an appreciation of a language that fits their interests in history.

The general major is for students with a general interest in history. The program requirements are:

A minimum of 42 semester hours in courses offered by the Department of History numbered 1105 or higher, of which at least 21 semester hours must be in non-U.S. history, this limitation is imposed to assure acquaintance with some form of history that is not one of the forms of history.

Three semester hours in 1611 Colloquium for History Majors. A colloquium consists of a small number of students collectively studying problems in ways that may develop 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 16 to 18 semester hours of course work in related areas, such as anthropology, economics, fine arts (including studio courses), geography, literature (including world literature courses), philosophy, political science, psychology, religion, and sociology, or a second major in one of these areas. Courses taken to satisfy General Education Requirements will be counted toward the related-areas requirements.

Dr. 26 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 are encouraged to consult the General Education Requirement in Historical Perspectives by taking any of the following courses taught by members of the history faculty: 15 in 216 Problems in Human History, 1651 Western Civilization to 1750, 1652 Western Civilization Since 1750, and 1656 Civilization of Asia. To receive any of these courses, be included in the 26 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 requirements of the American History Concentration, 26 hours

Courses in U.S. history (excluding 1611, Colloquium for History Majors) 30 s.h.

Courses in related areas 24 s.h.

Students must select 12 semester hours of U.S. course work in one of the related areas chosen from economics, geography, world history (non-U.S.), political science, or sociology.

Students also must meet a special requirement in a non-Empire history by taking a 10-hour course covering a period prior to 1750. This course also may be selected 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 non-U.S. history (including 1611, Colloquium for History Majors and a 100-level course covering a period prior to 1750) 30 s.h.

Courses in related areas 24 s.h.

Students must select 12 semester hours of course work in each of two related areas chosen from economics, geography, African history, political science, or 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 related area.

Graduate Programs

The graduate programs in history prepare students for: (a) teaching positions in secondary schools, at the college level, or in community colleges, and government or business service; (b) specialized training, studies of history, and careers in social work, library work, museum work, or historical research and writing. Some students enter the joint program leading to degrees in both law and history (see the "Joint Law and Graduate Degree Program" in the "College of Law" 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 understand the honors major in history, students must be admitted to the College of Liberal Arts Honors Program by the director of that program, or be honors program in history by the department. Applications 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, a minimum of 16.5 semester hours in related courses (see general major in history), at least 4 semester hours in the department's honors courses, which may include 6 to 8 semester hours of honors essay credit.

Successful defense of an honors essay.

Junior honor in history minor.

Honors seminar, honors tutorial, and supervised honors research.

Successful completion of the honors major in history.

Minor

Any major may be served by any student who completes at least 11 semester hours in a major with a grade-point average of 3.00. Twelve of the 15 semester hours must be advanced courses taken at The University of Iowa. Faculty members of the honors program will serve as a committee of the faculty members will serve as examiners. The honors minor is usually in the final semester of the student's final semester.
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 36 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 takes as an honor's thesis for the student in the major division and is completed following the fall semester under the guidance of the supervisor, when the student is enrolled in 16.205 Individual Study. Graduate. The finished product should entail the collection of articles in learned journals, just as the Ph.D. dissertation takes on the form of a full-length scholarly monograph.

The alternate plan for the M.A. is designed for students who do not intend to pursue the doctorate in history. The basic course requirements are the same as those for the Ph.D.-track M.A. They are 36 semester hours over two years in history, 12 in one particular area, including a minimum of 12 in one readings or seminar course. The two plans differ only in respect to concentrations: in the Ph.D. track emphasis is placed on the development of research capabilities while in the alternate plan emphasis is placed on breadth of learning. Students are the alternate plan must plan to take at least 6 semester hours in the fall and 6 semester hours in the spring, included in these 12 are the 12 semester hours must be of at least one readings or seminar course in history. After completing these requirements, or during the semester in which they are to be completed, the M.A. candidate must take at oral and written comprehensive examination in the major division.

Doctor of Philosophy

Students who earn the M.A. with a research essay are admitted to the Ph.D. program on the favorable recommendations of the examining committees. Students who earn an M.A. at another university must meet the general requirements for admission to the Graduate program (see the "Graduate College" section of the Catalog) and must present a specimen of their writing, which is a seminar paper or an M.A. thesis. They must take a research seminar during their first two semesters in residence at Iowa.

The candidate must earn at least 72 semester hours of credit, including credit for work done toward the master's degree. The 72 semester hours must include at least 22 semester hours (12 hours in 200 level history courses, 6 hours in 300 level history courses, or 3 hours toward the Ph.D. degree) of 300 level history courses. At least 9 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 this 32-hour requirement. The candidate also must earn 21 semester hours in the field of the philosophy 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 fluency in the use of either study tools. The candidate may complete the comprehensive examination without having been instructed in the following divisions:

- Ancient world
- Medieval Europe
- European, including Great Britain, 1550 to 1600
- Europe, including Great Britain, 1600 to 1815
- Rome and the Soviet Union
- United States history
- Latin American history
- Chinese history
- Japanese history
- History of India
- Economic history
- Military history

The third field need not be in a division outside the candidate's major division or in a related division. The written part of the comprehensive examination, which may take the form of a syllabus, a critical bibliography, a topical paper, or an essay, will be composed of forms of examinations, the committee deems suitable. The oral portion of the comprehensive examination will focus on issues and problems arising from the examination paper.

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 written work in history, department, such as term papers, seminar papers or a thesis. All materials must be submitted by April 15 for admission in the fall semester, or by November 15 for spring semester. The applications for graduate awards forms is separate, with a February 15 deadline.

A new student applying for admission must submit the application for admission when they apply for aid, or earlier. Those failing 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 year 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 40,000 monographs and related collections, as well as other unique materials. In addition, the university's special libraries are in French and English and other languages. The Iowa State Historical Department in Iowa City and the Herbert Hoover Presidential Library in West Branch possess additional valuable research materials.

Courses

Courses numbered 161 through 162 are introductory courses. They have been designed to satisfy the General Education Requirements in historical perspectives. They cannot be taken for credit even when they are taken in the summer. History majors must have prior approval for any substitution in order to enroll in 161 or 162. Other courses numbered below 200 are open to freshmen who have already satisfied the General Education requirements in historical perspectives. Most courses numbered below 200 are offered alternate years. The courses numbered 200 and above usually are offered as occasion demands.

100-600 Graduate Education Internship

114 World Civilization to 1700

118 Women Civilization to 1792

119 Women Civilization to 1792

107 Civilization of Asia

119 Women civilization and culture, historical perspectives

146 Civilization of Asia

195 Women civilization and culture, historical perspectives

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semester hours after entering the program, 15 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 must be approved by the committee that agrees to the plan of study of the student's academic advisor.
A description of the requirements is given in 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. 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 for graduation.
Advanced courses typically are those numbered 100 or above. At the discretion of the department, courses numbered below 100 but taught at an advanced level may also be used to satisfy this requirement. Approved courses are listed later in this section.
The music, musicology, and music theory at Iowa are designed to meet the requirements of the College of Liberal Arts.

ISP Requirements
In addition to having an approved plan of study, students must complete the following requirements for the BLA 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 Courses Numbered below 100
The following courses are approved as part of the 36 semester hours of advanced course work required under the ISP 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 are taken before spring semester 1998 are not considered advanced-level course work. Some of the courses taken pre-1998 may require prior permission or require special permission signatures.

American Studies
4590 Seminar in American Studies 3 s.h.

Art and Art History
1542 Advanced Painting 3 s.h.
1552 Undergraduate Printmaking 3 s.h.
1557 Undergraduate Sculpture Workshop 3 s.h.

Asian Languages and Literatures
2300 Japanese Literature 3 s.h.
2304 2nd-Year Japanese 3 s.h.
2304 2nd-Year Sanskrit 3 s.h.
1304 Non-Western Literacy Traditions 3 s.h.

Botany
2305 Iowa Flora 2 s.h.
8221 Advanced Course work only if 2301 Plant Taxonomy is also completed.

Communication Studies
All courses numbered 336-399 and above. All courses numbered 366-399 are approved.

Comparative Literature
4637 Literature in World Literature I 3 s.h.
4641 Literature in World Literature II 3 s.h.
4650 Non-Western Literacy Traditions 3 s.h.
4655 Undergraduate Seminar 3 s.h.

Computer Science
2371 Algorithms and Data Structures 3 s.h.
2372 Programming Language Concepts 3 s.h.
2391 Digital Systems and Computers 3 s.h.
2395 Introduction to Systems Software 3 s.h.
2395C1 Computer Graphics 3 s.h.
2395C5 Elementary Numerical Analysis 3 s.h.

Interdepartmental Studies • Liberal Arts 147
Dance
137:11 Independent Study 4 s.h.
157:01 Independent Choreography 4 s.h.

Dental Hygiene
60.2 Human Histology 4 s.h.

English
All courses numbered above 8.10 except 85 courses 4 s.h.

Geology
12.41 Mineralogy 4 s.h.
12.52 Elementary Petrology 4 s.h.
12.92 Structural Geology 4 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.
22M:50 Elements of Group Theory 3 s.h.
22M: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
15:141 History of Music I 3 s.h.
15:142 History of Music II 3 s.h.

Physical Education and Sports Studies
28:85 Psychosocial Dimensions of Physical Activity 3 s.h.

Spanish and Portuguese
35:30 Spanish Conversation Junior Level 2 s.h.
35:35 Spanish Conversation Senior Level 2 s.h.

Statistics and Actuarial Science
22S:35 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.

Theatre Arts
40:63 Shakespeare 3 s.h.
40:90 Play Script Analysis 3 s.h.
40:92 Musical Theatrics 3 s.h.

Related Considerations
All courses numbered with the prefix 7 (College of Education) are considered to be in one department.
All courses numbered with the prefix 6 (College of Business Administration) except 6:120 (Business Information) are considered to be in one department.

Honors
BF 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 IP coordinator.

IP students should consult with honors advisors about the requirements for admission to the College of Liberal Arts Honors Program and the Honors Program at the University House Honors Center. Students are encouraged to enroll in their junior year to allow time for foundation coursework. The honors director offers suggestions for contacting a supervising faculty member or committee from time to time in several appropriate departments.

Career Considerations
Since the B.A. degree in Interdepartmental Studies affords opportunities beyond the traditional degree pattern, students must create programs of study that meet their individual educational and career objectives. Those who wish 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 curriculum should be designed to prepare the student for graduate study or professional study. The easier it is for the student to learn the more graduate work the student will be required to take.

BF students who design a cooperative program and maintain a cumulative grade-point average of at least 3.0, earn a minor in another undergraduate degree in business or in public policy and government.

For More Information
Information about the Interdepartmental Studies Program is available from the College of General Studies/Interdepartmental Studies Office, 113 Schaeffer Hall.

Courses
145:010 Cooperative Education Internship 0 s.h.

IOWA LAKESIDE LABORATORY

The Iowa Lakeside Laboratory is a biological field station comprising approximately 180 acres of grassland and gallery forest along the west shore of Lake West (Stebbins) in northwest Iowa.

The laboratory was established in 1859 under the leadership of Thomas H. MacRae, whose residence as a University of Iowa botanist and geologist from 1878 to 1914 was recognized by his appointment as University president from 1914 to 1916. The lab site was the first area of land reserved for the laboratory and study of the rich flora and fauna of the northwestern corner of Iowa.

Since 1947, the University of Iowa has cooperated with Iowa State University and the University of Northern Iowa in the lab program. Representatives of these three universities make up an advisory board, which determines the scientific and educational policies of the lab.

The Iowa Lakeside Laboratory offers courses in two six-week terms during the summer season. Enrollment is limited to one student per term, for 3 semester hours of credit.

The laboratory offers advanced undergraduate and graduate students the opportunity to study plant and animal life in its natural setting. Laboratory, field, and classroom activities include a variety of courses.

The university offers advanced degrees and excellent opportunities to develop scientific research skills.

Teaching and research facilities include a laboratory, a library, and a lecture hall. Living accommodations include dormitories, and a large mass hall.

Financial Aid
The University of Iowa has several financial aid programs for undergraduate and graduate students. These scholarships cover all of the state’s undergraduate and graduate students. The scholarships are offered on a competitive basis. Students are encouraged to apply for these scholarships.

Registration
Current or former students of The University of Iowa, the University of Northern Iowa, and Iowa State University may enroll in these institutions with the registration forms in the Lakeside Laboratory bulletin. Students from other institutions must apply for admission to one of the three cooperating universities; each has a provisional admission policy for students who wish to register for summer

IOWA LAKESIDE LABORATORY

IOWA LAKEKITE LABORATORY

IOWA LAKEKITE LABORATORY

IOWA LAKEKITE LABORATORY
work only. The admission and registration forms can be submitted at the same time.

Early registration is advisable. Students are urged to submit applications before May 1 for the following summer session.

Courses

Permission of the instructor is required for all courses. Enrollments are limited to eight students in most courses. Classes meet daily for five days, five hours a day. Courses vary from year to year (see annual Iowa Lakeside Laboratory Bulletin); the offerings are representative.

1129 Field Natural History 3 h.
Biological diversity and biotic communities of Iowa, lake, forest, and prairie habitats. Tours include monitoring the environment, sampling and identifying organisms, comparing them with the ecotones, assessing species communities, and appreciating differences in plant and animal communities and geohistorical events in natural ecosystems of the region. Prerequisite: completion of the course. L124 Plant Taxonomy 3 h.
Introduction to the natural history of Iowa plants. Emphasizes the sampling, distribution, diversity, and ecological significance of Iowa's native flora. Prerequisites: Plant Biology I-II and laboratory work, reading, discussion. Prerequisites: basic course in botany.
1125 Aquatic Ecology I 3 h.
Basic concepts of aquatic ecology. Analysis and interpretation of data. Emphasis is on field and experimental methods. Prerequisite: completion of the course. Prerequisites: Introduction to Aquatic Ecology and laboratory work.
1126 Aquatic Ecology II 3 h.
Basic concepts of aquatic ecology. Analysis and interpretation of data. Emphasis is on field and experimental methods. Prerequisite: completion of the course. Prerequisites: Introduction to Aquatic Ecology and laboratory work.
1127 Field Ecology 3 h.
Study of the basic systems that maintain physical and biological gradients of climate, soil, vegetation, and animal communities. Prerequisites: basic principles in Biology I and II. L132 Prairie Ecology 3 h.
Study of the basic systems that maintain physical and biological gradients of climate, soil, vegetation, and animal communities. Prerequisites: basic principles in Biology I and II. L128 Neurobiology 3 h.
Behavioral, comparative, integrative studies of organisms. Emphasis on laboratory and field work, opportunity to work on my study animal, roosting behavior. Prerequisite: completion of the course. Prerequisites: Introduction to Aquatic Ecology and laboratory work.
1129 Fish Ecology 3 h.
Basic principles of fish ecology with the basic and advanced elements of the fishery, field work, methods, and theory needed to provide sampling in taxonomy and the biology of freshwater fish. Prerequisites: completion of the course. Prerequisites: Introduction to Aquatic Ecology and laboratory work.
1131 Field Zoology 3 h.
Study and laboratory investigation of representative organisms and major structural, functional, and behavioral characteristics, emphasis on invertebrates, ornithology, and herpetology. Prerequisite: completion of the course. Prerequisites: Introduction to Aquatic Ecology and laboratory work.
1137 Field Entomology 3 h.
Study and laboratory investigation of representative organisms and major structural, functional, and behavioral characteristics, emphasis on invertebrates, ornithology, and herpetology. Prerequisite: completion of the course. Prerequisites: Introduction to Aquatic Ecology and laboratory work.
1140 Fish and Wildlife Management 3 h.
Study and laboratory investigation of representative organisms and major structural, functional, and behavioral characteristics, emphasis on invertebrates, ornithology, and herpetology. Prerequisite: completion of the course. Prerequisites: Introduction to Aquatic Ecology and laboratory work.

Undergraduate Program

The Iowa undergraduate program prepares students for careers in journalism and mass communication by providing them professional training as part of a strong liberal arts education. The program integrates the development of professional skills with theoretical consideration of the role of the media in society.

Major: Prepare for careers as journalists for newspapers, magazines, radio, and television and as public relations specialists. As public relations, publication design, photographers, cable television, and media research.

The undergraduate program builds on the University's commitment to a liberal arts education. Majors are required to take both professional and academic courses in the school and must complete at least 24 academic credits outside of the school. Students earn the B.A. or B.S. degree. The school is accredited by the Accrediting Council on Education for Journalism and Mass Communication.

Selective Admissions

To preserve the quality of its programs, the School of Journalism and Mass Communication has a selective admissions program. Thus, students with declared interest in journalism are classified as journalism majors and they are admitted to major status. Before applying for admission to the program as majors, students must take two prerequisite courses, 1015 Introduction to Journalism and 1911 Historical Influences of Communication, and complete all required prerequisite courses. Students may apply for admission to major status during the semester in which they will have completed the prerequisite requirements and at least 80 semester hours. Students in the professional program who have been granted major status may apply for admission to minor status in the semester during which they will have completed the minor requirements and 45 semester hours. Information is available from the School of Journalism and Mass Communication office.

The primary criteria for admission to major status is overall academic performance. All students are considered to be potential journalism majors and all students admitted to the major program without regard to the number of applicants already in the program, availability of faculty, or students' previous academic performance. Students admitted to the major program and who have not already been admitted as journalism majors are generally admitted to the major program on the basis of their overall academic performance, and a limited number of applicants are admitted to the major program if the specific courses required for the degree program can be completed. Students admitted to the major program are generally admitted to the major program on the basis of their overall academic performance, and a limited number of applicants are admitted to the major program if the specific courses required for the degree program can be completed. Students admitted to the major program are generally admitted to the major program on the basis of their overall academic performance, and a limited number of applicants are admitted to the major program if the specific courses required for the degree program can be completed.
Curriculum

Majors must complete a minimum of 30 and no more than 36 semester hours in 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 19.111: Advanced Reporting and Writing class or a media workshop (19.130:19.132). Every major must complete 19.141: Legal and Ethical Issues in Communication and one advanced concentration 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 adviser.

Required Courses
Minimum of 30 semester hours, maximum of 36 semester hours

Premajor Foundation
19.30 Social Scientific Foundations of Communication 3 s.h.
19.91 Cultural and Historical Foundations of Communication 3 s.h.

Journalism Laboratory
19.141: Advanced Reporting and Writing course (19.120:19.125) 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
19.149: Ethical and Legal Issues in Communication 3 s.h.
A conceptual course numbered 19.150 or higher 3 s.h.

Electives
Quantum 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 36 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 from another discipline, view the world, or develop a combination 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 areas. Students who do not complete second session 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 advisor; each student must have his or her advisor'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 must 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 work must include 15 or more academic hours of work in upper-level courses and should be designed by the student in consultation with an advisor; the advisor 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 must fulfill the school's second area of concentration requirement in one of two ways:
- Complete a B.S. major in a natural, mathematical, or social science; or
- Complete the following:
  - A 24-semester-hour concentration of related courses in the social sciences (economics, geography, political science, psychology, sociology) and/or the natural and mathematical sciences; at least 15 of these 24 semester hours must be in upper level courses and should be designed by the student in consultation with an advisor; the student must have within approval at the second area of concentration by a journalism advisor in order to graduate; and
  - An overall major grade point average of 3.0 or better in the required concentration.

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

reputable work under the guidance of a faculty mentor.

A major with an overall grade-point average of 3.20 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 include a statement of the project or study topic and propose the student might pursue in completing the honors project. The student also consults with the head of undergraduate studies to identify a faculty member with whom he or she will develop the 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 format and topic of the project in a written proposal, which must be accepted by a faculty mentor. Once the proposal is accepted, the student enrolls in 19.130 Honors Project under the faculty mentor's written number. Students become official honors candidates at that stage.

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: 12 of the 15 semester hours must be in journalism and mass communication. At least two courses must be numbered 19.150 or higher.

Concentration
Students may pursue 19.130:19.132.

The minor 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 submit 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 have completed at least 60 semester hours (including those from The University of Iowa and other institutions) and two rhetoric requirements, 19.09 Social and Cultural Foundations of Communication, and 19.51 Cultural and Historical Foundations of Communication. Neither of these premajor course requirements may be waived on the basis of transfer credits from 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 semester hours toward a major in journalism and mass communication at Iowa. Some journalism coursework taken elsewhere might be applicable toward fulfilling elective and/or second area of concentration requirements. Any transfer credits intended to meet School of Journalism and Mass Communication requirements should 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 preparation, mass communication, and development support. The program coordinator would indicate the emphasis for which they seek admission. Each emphasis requires 30 semester hours of approved course work, the completion of a major, and the satisfactory completion of the final examination. The specific requirements of each emphasis are listed below.

Professional Program in Journalism

This program is for individuals who wish to improve their technical and analytical skills as a vehicle to broaden their understanding of the role and nature of mass communication in contemporary society, but who do not plan to engage in Ph.D. work.

It serves the student who has a background in a field other than journalism and has just completed an undergraduate degree in another field or has worked in a career unrelated to journalism (see "Group 1 Requirements," below). It also serves the student who wishes to work in some area of mass communication (see "Group 2 Requirements") below.

The program is designed for individuals who have just completed an undergraduate program in journalism and have no subsequent work experience in mass communication.

Group 1 Requirements

19.15 Journalistic Reporting and Writing (does not count toward degree) 3 s.h.
19.20 Master's Seminar 3 s.h.
Two advanced reporting and writing courses (19.208-19.250) 6 s.h.
A third advanced reporting and writing course or one 3 s.h.
media workshop (19.248-19.249) 3 s.h.
Electives 15 s.h.
19.293 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 from other courses offered by other departments.

Group 2 Requirements

19.202 Master's Seminar 3 s.h.
19.203 Master's Research (thesis) 3 s.h.
Journalism and Mass Communication electives 9 s.h.
Other electives 15 s.h.
Electives require consent of the advisor. The 15 semester hours of "other electives" may be selected from either School of Journalism and Mass Communication courses or 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 individual 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 advisor.

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:

19.206 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.
19.291 Communication Research: Historical Approaches 3 s.h.
19.292 Communication Research: Behavioral Approaches 3 s.h.
19.293 Communication Research: Phenomenological Approaches 3 s.h.
19.299 Master's Research (thesis) 3 s.h.

Every student in the mass communication and communication emphasis must complete an M.A. thesis (19.294) 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 course work outside the School of Journalism and Mass Communication; the nature and extent of the work is determined by the student and the faculty advisor.

Development Support Communications Emphasis

This multidisciplinary emphasis involves the cooperation of the Department of Geography and Political Science. It is intended 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.

In addition, the 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 phenomena within cultural and historical perspectives. Approaches include philosophical, ethical, and critical inquiry. The program's substantive nature is defined by the scholarly interests of faculty who have most frequently to investigations of historical, legal, economic, social, and cross-cultural aspects of communication, both verbal and visual.

The Ph.D. program is highly individualized. Drawing on the School of Journalism and Mass Communication as well as other academic units, each student develops a specific, course of study that reflects his or her academic background, experience, professional goals, and intellectual preferences. Applicants should be interested in the opportunity to join a small group of students working to understand mass communication in 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.
19:31 Law and the American Media 2.5 h
Historical perspective and selected topics in current communication law. Prerequisite: 15:940 for seniors, 15:949 otherwise.

19:32 Communication and Public Relations 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:33 History of Books and Writing 3.0 h
Historical perspective and selected topics in current communication law. Prerequisite: 15:940 for seniors, 15:949 otherwise.

19:34 Cinema and Society 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:35 Special Projects in Mass Communication 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:36 Reporting in Communication Media 2.5 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:37 History of Books and Writing 3.0 h
Historical perspective and selected topics in current communication law. Prerequisite: 15:940 for seniors, 15:949 otherwise.

19:38 Cinema and Society 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:39 Special Projects in Mass Communication 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:40 Reading in Communication Media 2.5 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:41 History of Books and Writing 3.0 h
Historical perspective and selected topics in current communication law. Prerequisite: 15:940 for seniors, 15:949 otherwise.

19:42 Cinema and Society 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:43 Special Projects in Mass Communication 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:44 Reading in Communication Media 2.5 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:45 History of Books and Writing 3.0 h
Historical perspective and selected topics in current communication law. Prerequisite: 15:940 for seniors, 15:949 otherwise.

19:46 Cinema and Society 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:47 Special Projects in Mass Communication 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:48 Reading in Communication Media 2.5 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:49 History of Books and Writing 3.0 h
Historical perspective and selected topics in current communication law. Prerequisite: 15:940 for seniors, 15:949 otherwise.

19:50 Cinema and Society 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:51 Special Projects in Mass Communication 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:52 Reading in Communication Media 2.5 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:53 History of Books and Writing 3.0 h
Historical perspective and selected topics in current communication law. Prerequisite: 15:940 for seniors, 15:949 otherwise.

19:54 Cinema and Society 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:55 Special Projects in Mass Communication 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:56 Reading in Communication Media 2.5 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:57 History of Books and Writing 3.0 h
Historical perspective and selected topics in current communication law. Prerequisite: 15:940 for seniors, 15:949 otherwise.

19:58 Cinema and Society 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:59 Special Projects in Mass Communication 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:60 Reading in Communication Media 2.5 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.

19:61 History of Books and Writing 3.0 h
Historical perspective and selected topics in current communication law. Prerequisite: 15:940 for seniors, 15:949 otherwise.

19:62 Cinema and Society 3.0 h
American and international theory and practice of public relations; emphasis on communication theory and research development of international commercial journalism.
LATIN AMERICAN STUDIES PROGRAM

Chair: Charles Ruiz

Program Directors: Thomas Charlier (Anthropology), Noé Englen (Anthropology), Ruby Jones (Spanish and Portuguese), Socorro Pacheco (Spanish and Portuguese), Charles Ruiz (History), Peter Schmid (English and American Studies)

Associate Professors: Flavio Gallo (Anthropology), Mariangel Gutierrez (Spanish and Portuguese), Christopher Hansman (Spanish and Portuguese), Thomas Lewis (Spanish and Portuguese), Douglas Meléndez (Anthropology), Benjamin Middlebrook (Spanish and Portuguese), Rebecca Murillo (Spanish and Portuguese), Katherine Ruffin (English and American Studies), Sandra Shapley (Spanish and Portuguese), Lara Shapley (Spanish and Portuguese), Mary Stock (Spanish and Portuguese), Robert Speck (Anthropology), Gregory Stuebe (Anthropology), Adriana Vazquez (Spanish and Portuguese), Armando Vives (Spanish and Portuguese), Laura Vives (Spanish and Portuguese), Leonor Wurman (Spanish and Portuguese)

Latin American studies is an interdisciplinary undergraduate program that focuses on the history, politics, social organization, economics, geography, art, and literature of Latin America. Students enrolled in this 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.

Programs

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 earn at least 27 semester hours of credit courses selected from the following categories:

1. At least 6 academic hours in each of at least three of the following departments: anthropology, geography, history, political science and international affairs, and Spanish and Portuguese. LASSP-approved courses that are also offered in another department of The University of Chicago and that may also be applied toward the LASSP certificate.

2. At least 6 academic hours in each of at least three of the following departments: anthropology, geography, history, political science and international affairs, and Spanish and Portuguese. LASSP-approved courses that are also offered in another department of The University of Chicago and that may also be applied toward the LASSP certificate.

3. At least 6 academic hours in each of at least three of the following departments: anthropology, geography, history, political science and international affairs, and Spanish and Portuguese. LASSP-approved courses that are also offered in another department of The University of Chicago and that may also be applied toward the LASSP certificate.

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6. At least 6 academic hours in each of at least three of the following departments: anthropology, geography, history, political science and international affairs, and Spanish and Portuguese. LASSP-approved courses that are also offered in another department of The University of Chicago and that may also be applied toward the LASSP certificate.

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8. At least 6 academic hours in each of at least three of the following departments: anthropology, geography, history, political science and international affairs, and Spanish and Portuguese. LASSP-approved courses that are also offered in another department of The University of Chicago and that may also be applied toward the LASSP certificate.

9. At least 6 academic hours in each of at least three of the following departments: anthropology, geography, history, political science and international affairs, and Spanish and Portuguese. LASSP-approved courses that are also offered in another department of The University of Chicago and that may also be applied toward the LASSP certificate.

10. At least 6 academic hours in each of at least three of the following departments: anthropology, geography, history, political science and international affairs, and Spanish and Portuguese. LASSP-approved courses that are also offered in another department of The University of Chicago and that may also be applied toward the LASSP certificate.

Courses concerned in part with Latin America are occasionally used as electives to satisfy the requirements for the certificate. Students should consult the Latin American studies advisor.

Minor

Swarms enroll in Latin American Studies Seminar (30,15), 30,15, 44,16 (or 133,132), a 3-semester laboratory course focused on problems that pertain specifically to Latin America. The seminar is usually taught by two faculty members from the participating departments.

Minor

To earn a minor in Latin American studies, students complete 15 semester hours in approved Latin American Studies Program (LASSP) courses, with a minimum
grade-point average of 2.00. Twelve of the 15 semester hours must be in courses numbered above 331 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**

- 113.115 Ethnology of South America 3 s.h.
- 113.115 Ethnology of Mexico 3 s.h.
- 113.118 Social Anthropology of the Classics 3 s.h.
- 113.136 Latin American Econocmics and Society 3 s.h.
- 113.132 Latin American Studies Seminar 3 s.h.
- 113.133 Anthropology of Mexico 3 s.h.

**Art**

- 110.105 Art of Pre-Columbian America 3 s.h.

**Geography**

- 44.167 Patterns of Urbanization and Development in Latin America 3 s.h.

**History**

- 16.130 Topics in Latin American History 3 s.h.
- 16.131 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**

- 30.100 Latin American Government 3 s.h.
- 30.145 Major Stares of Latin America 3 s.h.
- 30.163 Inter-American Relations 2-3 s.h.

**Portuguese**

- 36.101 Brazilian Literature I 3 s.h.
- 36.102 Brazilian Literature II 3 s.h.
- 36.114 Culture and Civilization of the Portuguese-Speaking World (taught in English) 3 s.h.
- 36.159 Latin American Studies Seminar 3 s.h.

**Spanish**

- 35.20 Contemporary Latin American American literature (taught in English) 3 s.h.
- 35.21 Contemporary Spanish American Fiction 3 s.h.
- 35.322 Spanish American Poetry I 3 s.h.
- 35.333 Spanish American Drama 3 s.h.
- 35.72 Spanish American Short Story 3 s.h.
- 35.170 Literature of the Discovery and Conquest of Spanish America 3 s.h.
- 35.175 Cultural Identity in Caribbean Literature 3 s.h.
- 35.176 Latin American Studies Seminar 3 s.h.
- 35.179 Twentieth Century Literature in Latin America 3 s.h.

**Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>190.130</td>
<td>Contemporary Latin American News Media</td>
</tr>
<tr>
<td>393.110</td>
<td>Comparative Literature in the Latin-American Contexts, and in other data on politics and economics of IRSC. (Same as 113.133)</td>
</tr>
</tbody>
</table>

**LEISURE STUDIES**

See "Division of Physical Education."

**PROGRAMS IN LETTERS**

**LEIBER STUDIES**

Degree offered: B.L.S.

The Bachelor of Liberal Studies (B.L.S.) program is offered by each of the three Iowa Regents universities (The University of Iowa, Iowa State University, and the University of Northern Iowa) to serve adults whose job, family, geographic location, or other personal circumstance prevents them from enrolling college 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 courses, correspondence and independent study courses, on campus courses at other colleges and independent study courses during the day. Courses finalized by any of the three Iowa Regents universities may be applied toward the degree at any appropriate courses from other accredited institutions.

The University of Iowa, the B.L.S. is awarded by the College of Liberal Arts and administered by the Division of Continuing Education. Since the B.L.S. is a general undergraduate degree with no traditional major, B.L.S. students may not earn minors. However, the requirements are sufficiently flexible to allow students, with the assistance of a B.L.S. 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
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/Regents Articulation Agreement, with a minimum grade-point average of 2.90; 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 2.0 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 62 must be earned in four-year colleges in courses defined as upper-level at the institution where the credit was earned (in the College of Liberal Arts at The University of Iowa, primarily courses numbered 100 and above). At least 45 must be completed in courses offered by the Iowa Regalia University, and 20 must be earned after admission to the B.L.S. program. 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 sections 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 the following distribution areas:

- Humanities (e.g., literature, history, philosophy, art, music)
- 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 45 semester hours of upper-level course work required if applicable.

At The University of Iowa, upper-level courses are numbered 100 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 (but taught at an advanced level) may be used to satisfy the 45-semester-hour upper-level requirement. Approved courses are listed in the Internedepartmental Studies section of the Catalog.

Graduation requires a minimum grade-point average of 2.00 in 40 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 404 Cooperative Education Internship 1-4

Library and Information Science

Bovington, Carl D., Professor emeritus; Walker, Susan S., Assistant professor; White, Linda M., Assistant professor; Schall, Thomas; Yager, Joseph

The School of Library and Information Science offers a program of professional and academic preparation for careers in all types of libraries and information centers - public, school, academic, and special. It seeks to recruit and prepare librarians and information professionals who reflect the diversity of society through research, and to provide public service. The program is accredited 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 by society and individuals; to enable its 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 information service they need.

Instructional Objectives

Upon completion of the program, students are able to:

- Demonstrate an understanding of the history and theory of library and information science sufficient to recognize 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.

- 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 information services in the process.

- Demonstrate an appreciation for the responsibilities of the information profession, and learning can make to the richness of life, and the library's contribution to this appreciation to others.

- Master 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; to be broad range of useful literatures 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.

- City and evaluate research that helps improve the advancement of the profession and city and evaluate the community to the librarian made by related disciplines; and
• Demonstrates 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 programs 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 (102 level). No courses numbered 100 or above may be taken by freshmen or sophomores. No courses numbered 200 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 allowed, 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 disciplines may take a course only with approval of the director and the instructor of the course.

Master of Arts
Professional and academic preparation for careers in all types of libraries is provided by the school's Master of Arts program. Each graduate holds 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 as 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 to be applied to the 33-semester-hour program must be approved by the advisor.

Required Core Courses
Required of all M.A. candidates, 15 s.h.
2111 Information Sources
2112 Computer Systems
2113 Information Organization and Management
2115 Foundations and Collection Development
2131 Management of Libraries and Information Centers
2146 Introduction to Information Science

Electives
Total: 18 s.h.
For suggested electives, see "Public Library Work," "College and University Library Work," "Work in Special Libraries," and "Library School Media Work" in the section of the Catalog.

Elective courses in other University departments must be shown to be an integral part of the student's preparation for library and information science. Although many disciplines offer cultural and intellectual support in preparation for librarianship, they do not warrant replacement of needed courses in a brief one-year program. To be applied toward the degree, elective courses outside the department must be taken following approval by the School of Library and Information Science and must exceed the 6 semester hours for students having no previous courses in library science or 9 semester hours for those with previous library science courses. Only courses taken for graduate credit may be counted toward the University's 33-hour requirement.

Thesis Option
The purpose of the thesis option is to provide the facility for graduate students to conduct research in order to contribute original work of substance to the profession. The thesis is intended to replace basic preparation courses.

Transfer Credit
Up to 6 semester hours of graduate credit may be accepted as transfer from another institution, provided that the work taken was taken in residence in a library and information 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, currency, and applicability 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 greater employment, may find it difficult to carry the maximum course load. The maximum load for graduate students is 15 semester hours during regular semesters and 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 informational, 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 often are supported by grants from federal, state, and local governments.

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. Library skills often are needed in professional positions.

Plan of Study
Required Core Courses
15 s.h.
2111 Information Sources
2112 Computer Systems
2113 Information Organization and Management
2131 Management of Libraries and Information Centers
2146 Introduction to Information Science

Electives
18 s.h.
2115 Foundations and Collection Development
2121 Information Search
2126 Information Sources
2131 Management of Libraries and Information Centers
2132 Practicum in Libraries

Courses related to service to children and young adults
2126 Literature and Storytelling for Children
2127 Service to Youth

College and University Library Work
The option is open to students, whether in a community college, a two-year college, or a four-year college, who wish to prepare for leadership positions in academic and public service libraries of the parent institution. These services include

College and University Library Work
The option is open to students, whether in a community college, a two-year college, or a four-year college, who wish to prepare for leadership positions in academic and public service libraries of the parent institution. These services include
Plan of Study
Required core courses 15 s.h.
Suggested electives 18 s.h.
21532 The College of Liberal Arts 3 s.h.
21540 Philosophy 3 s.h.
21547 Information Storage and Retrieval 3 s.h.
21548 Library Automation 3 s.h.
21549 Research Methods 3 s.h.
21551 Advanced Reference 3 s.h.
21552 Description and Organization of Materials I 3 s.h.
21553 Technical and Serial Services Management 3 s.h.
21555 Government Publications 3 s.h.
21564 Medical Librarianship and Bibliography 3 s.h.
21565 Law Librarianship, Bibliography, and Research Techniques 3 s.h.
21566 Practicum in Libraries 2-3 s.h.

Work in Special Libraries
Special librarianship includes careers in libraries and information centers serving both profit and not-for-profit organizations in government, law firms, research institutions, and industries. The ability to design services suitable to the client organization, the possession of such skills and competencies as critical thinking, effective communication, systems analysis, and organizing information, is of primary importance. The professional competence is of substantial subject expertise, which must be continually updated and expanded in library work. Information brokers and entrepreneurs are also special librarians.

Plan of Study
Required core courses 15 s.h.
Suggested electives 18 s.h.
21510 Special Libraries 3 s.h.
21510 Bibliography 3 s.h.
21547 Information Storage and Retrieval 3 s.h.
21549 Research Methods 3 s.h.
21551 Advanced Reference 3 s.h.
21552 Description and Organization of Materials II 3 s.h.
21555 Government Publications 3 s.h.
21564 Medical Librarianship and Bibliography 3 s.h.
21565 Law Librarianship, Bibliography, and Research Techniques 3 s.h.
21566 Practicum 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 services. 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 school library 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. This includes 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:

21514 Reference 3 s.h.
21515 Descriptive and Organization of Materials I 3 s.h.
21555 Foundations and Collection for Media Program 3 s.h.
21561 Management of Libraries and Information Services 3 s.h.
21562 School Library Media Center Administration 3 s.h.
21564 Library Materials for Children 3 s.h.
21565 Library Materials for Adolescents 3 s.h.
21566 School Library Media Center Practicum 2-3 s.h.
TW102 Introduction to Instructional Design and Technology 3 s.h.
TW135 Survey of Computer Applications to Instruction 3 s.h.
21492 Research Methods 3 s.h.
TP220 Educational Research Methodology 3 s.h.
TW222 Instructional Strategies 3 s.h.
21585 Consultation Theory and Practice 3 s.h.
21222 Multi-Media Concepts in Libraries 2 s.h.
TW105 Design and Production of Media for Instruction 2 s.h.

Total 38 s.h.

Students who complete 29 of the above semester hours in a designated sequence are eligible for single-level endorsement, that is elementary school media specialist (K-6) or secondary school media specialist (7-12).

Iowa Community College Certification
The school offers an approved program for librarianship, reference specialists and in area vocational school or community college. Students receive the 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 must first complete the proper coursework 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 overtime 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 at the School of Library and Information Science to ensure the benefits of integration.

Objectives of a joint program must be consistent with the goals stated above, and since they vary from student to student, they are a matter of advising. For instance, a student who seeks a career in a law or business environment, who will not need a significant 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.

To enroll in a joint program, students must apply to the appropriate College of Law or Business Administration and the School of Library and Information Science and the other college. Up to 9 semester hours of such study may be applied toward the M.A. in library and information science and up to 9 semester hours toward the M.B.A. or 12 semester hours toward the J.D. In addition to these formal joint programs, arrangements can be made for joint programs between departments on an ad hoc basis.

In no case can a student receive two degrees with fewer than 60 semester hours of graduate work, and joint programs usually require substantially more than this.

Facilities and Resources
The School of Library and Information Science is located conveniently in the southwest wing of the University’s Main Library, providing facilities for the varied instructional and research activities of the school.
Computer Facilities
A multipurpose, occupying laboratory, provides student access to microcomputers. Equipment is available for CD-ROM systems, online searching, use of bibliographic utilities, and line of terminal 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 analyses.

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 materials for research or for course work.

Media Lab
A media lab contains equipment and space for slide-lecture production, videotape production, super 8 filmmaking, filmmaking production, film trim previewing, single film editing, and VCR mounting.

Statewide Reference Service
The school serves as one seat of a state network of libraries. In cooperation with the State Library of Iowa, students provide a slide-lecture service to libraries throughout the state, and, using their skills to perform bibliographic verification and to answer reference questions. The service helps students resolve and integrate classroom instruction and provides valuable 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 twenty million volumes in the Main Library and 11 departmental branch libraries. More than two thousand monographic volumes were acquired in 1990. The serial collection is extensive, with more than twelve thousand current serial subscriptions. The Gladys M. Oakes Main Library houses the government publications, map, and special collections rooms 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 Weog 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 Grinnell, Cornell, and Grinnell college libraries, and the Herbert Hoover Presidential Library in West Branch, The Iowa City Public Library, located only four blocks from the Main Library, was one of the first public libraries in the nation to convert to a totally computerized catalog. Its service philosophy and contemporary management practices provide students with an innovative public library model.

Other Resources
The Library Center, located across the street from the Main Library, houses the Learning Resources Center of the College of Education and the Weog Computing Center. The resource center consists of the VHS Lab, Computer Production Lab, Audiovisual Production Lab, and Curriculum Resources Lab. The Curriculum Resources Lab contains an extensive collection of books and textbook instructional materials for children in preschool through grade 12. It is especially valuable for students interested in school or public library work.

Weog Computing Center provides instructional and research-computing facilities and services for the University community. All University students, staff, and faculty may use the computer center's computers for University-related research, thesis preparation, and class work. Each graduate student is provided with a small bonded account by the Graduate College.

Faculty Advising
Each graduate student is assigned an advisor who administers assignments and is encouraged to discuss career objectives and problems with the advisor whenever possible. The relatively small size of the school allows faculty members to get to know students individually and to take an interest in their professional development. All courses are to be applied to the 30-semester-hour program and 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 national conferences allow people frequent exposure to contemporary developments in library and information science, as well as an opportunity to meet with practicing librarians from across the state and nation.

The Library and Information Science Student Organization (LISOS) is composed of all students accepted into the M.A. program. The Executive Committee of LlOS 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 has a representative to faculty meetings. The 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 professional 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 is 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 qualifications and academic preparation, 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 2.30 on a 4.00 scale, and at least 36 semester hours of study in the liberal arts and sciences.

A combined verbal/quantitative score of 1050 on the combined verbal/quantitative score of 850 on the Graduate Record Examination (GRE) General Test.

Performance on the GRE in the verbal section is the primary potential are assessed by means of letters of recommendation and an oral on-campus interview with the school director and other members of the faculty. Alternative interviews are arranged when necessary and are available for students from other countries.

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A combined verbal/quantitative score of 1050 on the combined verbal/quantitative score of 850 on the Graduate Record Examination (GRE) General Test.

Performance on the GRE in the verbal section is the primary

foreign students whose native or official language is not English are required to take 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 fulfills the basic admission requirements, the school will schedule a personal interview.

Prospective students are urged to begin application procedures early enough to ensure their admission by the deadline given below. Applicants must meet the minimum admission requirements by the deadline, and may be accepted only if the Graduate Record Examination (GRE) General Test has not been taken.

Complete 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 clipping retrain people with linguistic disabilities. Some help design school programs for minority Americans or intelligence and achievement tests that avoid discrimination against subjects who are not first or second. Linguistics also work in law, in the computer industry, and in foreign language translation.

Undergraduate Program

High scores on verbal, analytic, and quantitative aptitude tests are indicators of success in linguistics. Although few aspects of the field deal with numbers, students must be able to reason logically and explicitly and deal with formulas and abstract symbols. Depending on the goals, prospective linguistics students should consider growing their studies either through the M.A. in linguistics with a specialization of focus or through the doctorate; or they should take a second major. Appropriate undergraduate fields include foreign languages, English, anthropology, sociology, speech pathology, psychology, mathematics, computer science, philosophy, and elementary, secondary, and special education.

Bachelor of Arts

The Bachelor of Arts degree in linguistics prepares students to do basic language analysis and study sentence patterns and their relation to meanings and phonology (second pattern). Elective courses in linguistics will enable students to tailor the program to their own interests. The major in linguistics requires 32 semester hours of course work. Majors must take an introductory linguistics course (101:100), courses in phonetics (101:105), phonology (101:115), and syntax (101:125) and a course in language history. The net requirement can be satisfied by taking 101:120 Historical and Comparative Linguistics, or a course in the history of some language or language family (e.g., 101:131, 101:135), or a course in an old language (e.g., Classical Greek, Latin, Swaxian, Old English). Remaining electives are chosen with the undergraduate advisor.

Minor

The undergraduate minor in linguistics requires 15 semester hours of linguistics courses (may be cross-listed), at least 12 of which must be in courses numbered 100 or above. A minimum grade point average of 2.66 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.

Graduate Programs

The graduate programs emphasize theory and research. Students interested in non-university careers also may take courses in applied linguistics and other fields, either in connection with doctor's work or as an option in the M.A. program.

Master of Arts

All students take a required set of core courses and comprehensive examinations in phonology and syntax. The required core courses are:

101:110 Articulatory and Acoustic Phonetics
101:111 Syntactic Analysis
101:112 Phonological Analysis and Theory
101:120 Historical and Comparative Linguistics
101:131 Syntactic Theory
101:132 Psycholinguistics

One of the following:

101:133 Linguistic Field Methods
101:210 Linguistic Structures
101:217 Language Universals and Linguistic Typology

Students who write a thesis take at least 9 semester hours of elective courses, exclusive of thesis hours, and receive up to 6 semester hours of thesis credit. Students who take a degree without thesis complete a focus area consisting of 12 semester hours of course work plus at least 6 semester hours of elective courses. The focus may be designated in advance by the student (subject to departmental approval) or may be selected from a set of predesignated options (e.g., teaching English as a second language).

All electives must be approved by the student's adviser or chosen from a departmental list. Students who write a thesis may take at least 30 semester hours of course work, those who choose the non-thesis option must take at least 30 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., 101:131 Syntactic Theory and 101:132 Advanced Syntactic Theory), three upper-level phonology courses (e.g., 101:132 Phonological Theory), and at least two seminars, for a total of 18 semester hours. An approved 18-semester-hour specialty area also is 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 special area. An oral Defense of the dissertation and three years of residence are required. In addition, all candidates are required to gain supervised experience in teaching and research.

Admission

To be considered for admission to the graduate program in linguistics, prospective students must complete an application form, submit GRE General Test scores, and 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 opportunities are available to qualified graduate students. Applications are considered after January 15, but earlier submission is encouraged. Applications for teaching assistantships are considered only for students whose admission for application is complete.

English as a Second Language

ESL is offered in three distinct, but related, programs: the ESL credit support courses, the intensive English Program (IEP), and the Transitional and Preparation in English Program (TAP). 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. The IEP provides intensive instruction for students who must raise their English proficiency to gain admission to a university or college. The TAP program prepares students to enter in American classrooms.

ESL Credit Support Courses

These courses bridge the gap between full-time language instruction and full-time academic work, serving students whose
TOEFL scores range from 530 to 599. ESL courses are offered to increase proficiency in six skill areas: reading, writing, speaking, listening comprehension, pronunciation, and grammar. Each course grade counts three semester hours of credit, which counts 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 proficiency in spoken and written English, which is crucial to college and university work. Grammar and the basic language skills of reading, writing, 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 operates throughout the year and is open to both traditional and non-traditional students.Admittance to the IEP is based on an interview and language assessment tests arranged by the ESL Program Office.

**Teaching Assistant Preparation in English (TAPE)**

The TAPE program is designed for graduate students, including foreign students who are English, who need additional work on English language instruction and classroom presentation techniques, and who will hold teaching assistantships while at the University of Iowa. Only students who need the program and who have a sufficient command of English to profit from it are eligible. TAPE courses are open to graduate students who have had the TA certification evaluation and in whose area it is available. Instruction is by full-time professional ESL instructors.

**Facilities**

The Department of Linguistics has limited acoustic equipment consisting of a sound spectrograph, a studio-type tape recorder, and an audiovisual chamber. There is also a remote terminal and a personal computer available to students.

The departmental 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**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>102000</td>
<td>Cooperative Educational Internship</td>
<td>3 h.</td>
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<td>103111</td>
<td>Language and Society</td>
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<td>103112</td>
<td>Language and English</td>
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<td>103120</td>
<td>Introduction to Language and Linguistics</td>
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**For Undergraduates and Graduates**

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<td>103100</td>
<td>Introductions to Linguistics</td>
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<td>103101</td>
<td>Language, Society, and Education</td>
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**103150 Historical and Comparative Linguistics** 3 h.

Principles of linguistic change: comparative method and grammatical relationships of languages. Instructed in English and language terminology. Prerequisite: 103110. Same as 103120.

**103151 Syntactic Theory** 3 h.

Principles of syntactic change: generative theory and grammatical relationships, critical analysis of research. Prerequisite: 103110. Same as 103121.

**103152 Phonological Theory** 3 h.

Basic principles of phonological theory of language and phonetic system. Prerequisite: 103113. Same as 103122.

**103153 History of the English Language** 3 h.

Development of geographical and cultural structure of English. Historical periodization: Latin, Inflectional, and Influenzae. Prerequisite: 103114 or equivalent. Same as 103123.

**103154 Elementary Old English** 4 h.

Critical edition of Old English in the Middle English period of language: selected texts. Same as 103124.

**103155 Medieval Historical Philology** 3 h.

Same as 103125.

**103156 The Structure of English** 3 h.

Critical analysis, including topics of interest to speakers of a foreign language. Prerequisite: 103115.

**103157 Modern English Grammar** 3 h.

Topics of traditional grammar applied to contemporary spoken and written English usage. Same as 103126.

**103158 Methods of Teaching English as a Foreign Language** 3 h.

Method and materials for teaching English as a foreign or second language: classroom model for curriculum development, and utilization of instructional materials for the various aspects of language, including pronunciation, vocabulary, grammar, and reading. Prerequisites: 103116 and 103117.

**103159 Pedagogy of Language** 3 h.

Course work required. Same as 103127.

**103160 Language Structure and Development** 3 h.

Prerequisites: 103118 and 103119 or consent of instructor.

**103161 Anthropological Linguistics** 3 h.

Prerequisites: 103120 and 103121 or consent of instructor.

**103162 Phonetic Anthropology** 3 h.

Prerequisites: 103122 and 103123.

**103163 Applied Linguistics** 3 h.

Prerequisite: 103124. Consent of instructor.

**103164 Introduction to Semiotics** 3 h.

Introduction to semiotics, using basic conceptual concepts essential for English and other languages.

**103165 Phonological Theory and Analysis** 3 h.

Introduction to phonological theory, principles in phonological analysis, making use of data from a variety of languages. Prerequisites: 103116 and 103120.

**103166 Linguistic Field Methods** 3 h.

Field methods, including reference consultation, research design, data collection, and analysis. Prerequisite: 103112. Same as 103128.

**103167 Comparative Linguistics** 3 h.

Prerequisite: 103114. Consent of instructor.

**103168 Modern Languages Development** 3 h.

Prerequisites: 103125 and 103126 or consent of instructor.

**103169 Narrative Processes of Speech and Language** 3 h.

Prerequisites: 103127 and 103128 or consent of instructor.

**103170 Text Analysis** 3 h.

Prerequisites: 103119 and 103120 or consent of instructor.

**103171 Foreign Language Development** 3 h.

Prerequisites: 103129 and 103130 or consent of instructor.
101:109 Special Projects
Selected theoretical and applied topics in linguistics
3 s.h.

101:201 History of Linguistics
Topics in the history of linguistic theory.
3 s.h.

101:204 Stylistics
Structure and the use of English in a variety of genres and contexts.
3 s.h.

101:210 Advanced Structural Theory
Recent developments in analysis of the nature of linguistic structure. Prerequisites: 101:204 or equivalent. 3 s.h.

101:217 Sociolinguistics
The theory and methodology of sociolinguistic research and its application to the study of language use and change, with emphasis on the sociolinguistics of race, ethnicity, and gender. 3 s.h.

101:220 Cultural and Linguistic Anthropology
The study of language and culture. Includes an examination of cultural anthropological theory and research methods. 3 s.h.

101:221 Psychological Linguistics
Prerequisites: 313 or consent of instructor. Same as 312. 3 s.h.

101:260 Prehistoric and Proto-Indo-European Linguistics
Introduction to the study of the languages of the Indo-European family. 3 s.h.

101:261 Historical and Comparative Linguistics
Introduction to the study of the languages of the Indo-European family. 3 s.h.

101:277 Learning, Memory, and Cognition
Prerequisites: 112 and 115 or consent of instructor. 3 s.h.

101:301 Early Modern English
The English language from 1500-1625. 3 s.h.

101:302 Shakespearean Linguistics
Select topics in Shakespearean language. 3 s.h.

101:310 Special Topics
Selected topics in linguistics. Consent of instructor required. 3 s.h.

101:320 Sociolinguistics
Instructor Consent Required. 3 s.h.

101:325 Modern English
The structure of the modern English language. 3 s.h.

101:350 Modern English
Select topics in modern English. 3 s.h.

101:394 Special Projects
Selected theoretical and applied topics in linguistics. 3 s.h.

101:401 Advanced Structural Theory
Recent developments in analysis of the nature of linguistic structure. Prerequisites: 101:204 or equivalent. 3 s.h.

101:410 Historical Linguistics
Theoretical, descriptive, and thematic aspects of historical linguistics. 3 s.h.

101:420 Comparative Linguistics
Prerequisites: 101:210 or equivalent. 3 s.h.

101:426 Advanced Structural Theory
Recent developments in analysis of the nature of linguistic structure. Prerequisites: 101:204 or equivalent. 3 s.h.

101:427 Sociolinguistics
The theory and methodology of sociolinguistic research and its application to the study of language use and change, with emphasis on the sociolinguistics of race, ethnicity, and gender. 3 s.h.

101:428 Sociolinguistics
The theory and methodology of sociolinguistic research and its application to the study of language use and change, with emphasis on the sociolinguistics of race, ethnicity, and gender. 3 s.h.

101:430 Language Acquisition
A study of the acquisition of language by humans, with an emphasis on the behaviorist and cognitive perspectives. 3 s.h.

101:440 Language and Culture
A study of the relationship between language and culture, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:450 Language and Society
A study of the relationship between language and society, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:460 Language and Politics
A study of the relationship between language and politics, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:470 Language and the Law
A study of the relationship between language and the law, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:480 Language and Gender
A study of the relationship between language and gender, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:490 Language and Disability
A study of the relationship between language and disability, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:500 Language and Technology
A study of the relationship between language and technology, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:510 Language and Environment
A study of the relationship between language and the environment, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:520 Language and Economics
A study of the relationship between language and economics, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:530 Language and Religion
A study of the relationship between language and religion, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:540 Language and Law
A study of the relationship between language and law, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:550 Language and Politics
A study of the relationship between language and politics, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:560 Language and Social Change
A study of the relationship between language and social change, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:570 Language and Identity
A study of the relationship between language and identity, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:580 Language and Health
A study of the relationship between language and health, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:590 Language and Education
A study of the relationship between language and education, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:600 Language and Technology
A study of the relationship between language and technology, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:610 Language and the Law
A study of the relationship between language and the law, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:620 Language and Economics
A study of the relationship between language and economics, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:630 Language and Religion
A study of the relationship between language and religion, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:640 Language and Law
A study of the relationship between language and law, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:650 Language and Social Change
A study of the relationship between language and social change, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:660 Language and Identity
A study of the relationship between language and identity, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:670 Language and Health
A study of the relationship between language and health, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:680 Language and Education
A study of the relationship between language and education, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:690 Language and Technology
A study of the relationship between language and technology, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:700 Language and the Law
A study of the relationship between language and the law, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:710 Language and Economics
A study of the relationship between language and economics, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:720 Language and Religion
A study of the relationship between language and religion, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:730 Language and Law
A study of the relationship between language and law, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:740 Language and Social Change
A study of the relationship between language and social change, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:750 Language and Identity
A study of the relationship between language and identity, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:760 Language and Health
A study of the relationship between language and health, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.

101:770 Language and Education
A study of the relationship between language and education, with an emphasis on the behavioral and cognitive perspectives. 3 s.h.
Literature beyond General Education Requirements: 3 s.h.
Fine arts: 3 s.h.
Foreign language: one semester beyond second year: 3 s.h.
Foreign literature courses in the original language may also be used to satisfy the requirement in literature: 3 s.h.
Students considering an LSA major should consult with the program chair before the end of their sophomore year.

Honors
Superior students who undertake a further program of independent study may earn the Bachelor of Arts degree with honors. To be admitted as candidates for honors, students must have the endorsement of the chair of the Interdisciplinary Program in Literature, Science, and the Arts and meet the requirements for the College of Liberal Arts Honors Program. Honors students submit an honors project and present its results to an Honors Committee.

Courses
2101 Myths and Reason 3-4 s.h.
Romanticism: myth and reason as significant poles in Western thought: readings from Sophocles, Plato, Aristotle, Xenophon, and various medieval saints.
2102 The Good Society 2-4 s.h.
History, ethics, and the potential of man's life in society, as seen by writers from Plato, Aristotle, Machiavelli, Montesquieu, Voltaire, Diderot, Rousseau, Jane Austen, Robert Louis Stevenson, and Mark Twain.
2103 Great Books of Politics 2-4 s.h.
Political philosophy as presented in grammatical and constitutional works.
2103 Citizen and Constitution 2-4 s.h.
Social, political, and legal aspects of crime and punishment as reflected in fiction, literature, and social theory.
2103 The Family in Law and Society 2-4 s.h.
Family viewed from social, political, economic, legal, and social dimensions: historical, societal, and cultural changes in a diverse and complex society.
2102 Values in the Contemporary World 2-4 s.h.
Current liberal and conservative theories examined through writings of contemporary ethical theorists and movements.
2103 Hard Cash: Science Policy and Values 3 s.h.
Investigation of major issues in practical ethics through critical case studies in fields such as law, medicine, politics, science, and philosophy; in classic authors; such as Plato, Aristotle, Bacon, and Mill; and recent contributions from several disciplines.
2114 Human Nature and the Impact of Science 3 s.h.
Relationships of scientific, humanistic, social, and religious thought: 16th and 17th centuries. Same as 1131.
2115 Law, Medicine, and Society 3 s.h.
History, ethics, and political issues relevant to the intersection of contemporary law, medicine, and science.
2115 What We Know and Why in the Arts 3 s.h.
Everyday human experience and critical evaluation, personal interpretation, and ethical, close examination of concrete and theoretical evidence, specific works of the arts, and graphic art. 1201 humanities.

164 Literatures of Science in America 3 s.h.
Exploration of relations, goals, dreams, and lifestyles of individuals in the world of science, as encountered in works of literature fiction, fact, and nonfiction (from the 1890's to the 1990's). 2104 Books of Modern Culture 3 s.h.
Literary and social movements of modern humanities.
2105 Poetry and Song 2-4 s.h.
History of literature, song, and dance; a range of serious contemporary compositions of literary and music and movements. Historical and critical concepts in a wide range of movements and, of its performance, origin, and evaluation; the litera and value of the arts.
2109 Special Projects 2-4 s.h.

DIVISION OF MATHEMATICAL SCIENCES

Undergraduate degrees offered: B.A., B.S. in Mathematical Sciences

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 program. Beginning in 1989, the mathematics sciences degrees are closed to new majors. The courses already in the programs must complete the degree requirements by August 1993. For a description of the program requirements, see the 1988-89 General Catalog.

APPLIED MATHEMATICAL SCIENCES

Chair: Herbert W. Hughes
Fawaz: Kenneth J. Attarian (Mathematics), Dennis L. Bridger (Industrial and Management Engineering), Gregory H. Curran (Chemical and Biochemical Engineering), Chung-Ho Chen (Mechanical Engineering), Donald E. Dorfman (Physics), Peter A. Gans (Psychology) and Economics), Edward J. Lepkow (Mechanical Engineering), Herbert W. Rietz (Mathematics), William J. Rost (Physics and Astronomy), Richard O. Korte (Management Science), George E. Kocar (Physics and Astronomy), Karl C. Lanne (Electrical and Computer Engineering), and Roger B. Shults (Computer Science), George Woodburn (Chemistry and Chemical Science)
Graduate degrees offered: Ph.D. in Applied Mathematical Sciences

Applied mathematicians formulate scientific concepts and problems in mathematical terms, solve the resultant mathematical problems, and interpret, evaluate, and implement the solutions. They explore ideas for new areas and applications and develop mathematical theories and methods in new areas.

Career opportunities for applied mathematicians include faculty positions in colleges and universities, research positions in industrial and governmental laboratories, and professional consulting positions.

Program
The Program in Applied Mathematical Sciences at The University of Iowa is an autonomous, broad-based interdisciplinary program leading to the Doctor of Philosophy degree. The program helps students achieve a command of theoretical and applied aspects of a mathematical science (mathematics, statistics, or computer science) and obtain basic knowledge of at least one scientific (engineering, biological, physical, or social) science. The program is flexible, so students can concentrate on applied mathematics, such as differential equations, dynamical systems, to computer science.

Applicants should have a strong background in a mathematical science and a desire to apply a mathematical science to relevant scientific problems in another science. Students may enter with either a bachelor's or master's degree.

Plan of Study
Faculty members help each student plan a course of study that is consistent with the student's background, interests, and goals. They also help the student find a suitable thesis problem and supervisor.

Students' individual programs are designed to help them develop expertise in methods of applying a mathematical science. build a good foundation in a relevant topic in the theoretical mathematical sciences, or computer science, and provide sufficient knowledge of a particular science so that students can use mathematical science techniques in that science. Students can arrange their study plans so that they can complete a master's degree or a mathematical science or a mathematical science degree after they complete part of their plan.

Comprehensive Exam
Ph.D. comprehensive examinations cover those areas of theoretical foundations in a mathematical science, methods of application, and the chosen scientific area. One program objective is to have each student's dissertation research include many of the activities of an applied mathematical scientist. For example, a student might formulate a model, do a quantitative analysis of the model, and interpret the results.

164 Liberal Arts • Literature, Science, and the Arts
Computer Science • Liberal Arts 165

Assistantship, Application for Admission
Research and teaching assistantships are available to qualified applicants. Support for students as research assistants is available during the academic year, and for financial support should be received by March 1. For application forms and more information, address your correspondence to the Chair of the Program in Applied Mathematical Sciences, The University of Iowa, Iowa City, Iowa 52242.

Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>42C:07</td>
<td>Seminar in Applied Mathematical Sciences</td>
<td>3.00</td>
</tr>
<tr>
<td>42A:80</td>
<td>Reading and Research</td>
<td>1.00</td>
</tr>
</tbody>
</table>

Computer Science

Chair: Arthur C. Black
Professor: Donald C. Albin, Donald L. Eppler, Arthur C. Black, Geoffrey W. Moore (Psychology)
Associate professors: Robert J. Banas, Steven C. Brilli, Halbert Ulehla, Douglas W. Jones, Tadeo Roa

Assistant professors: Marc Armstrong, (Geography), Brian C. VanDam, Joseph K. Krasnoff, Oleg A. Kurg, Moreau Mardel, Myong-Ho Park, Maniruzzaman Shar, Hang Zhang, Jennifer Lechner, Walter C. Wersinger

Visiting lecturer: Robert Christiansen

Undergraduate 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 must also explore at least one area of potential computing applications through a required elective program. Students have great flexibility in their choice of areas, but specific courses are required for all areas of emphasis. Students should consult a computer science advisor for more detailed information. The Computer Science Undergraduate Advisor is available for the Iowa Memorial Union Bookstore, suggests possible elective areas, and discusses the Cooperative Education Program and student groups such as the University's chapter of the Association for Computing Machinery.

Pre-Computer Science

Existing students who were major in computer science are designated pre-computer science majors until they have met the entry requirements of the computer science majors. Students continue in pre-computer science status until they complete the first four courses of the major.

22C:16 Introduction to Programming with Pascal
22C:17 Programming Techniques and Data Structures
22C:18 Computer Organization and Assembly Language Programming
22C:19 Discrete Structures I
22C:20 Discrete Structures II
22C:21 Data Structures
22C:22 Programming Language Concepts
22C:23 Digital Systems and Computers
22C:24 Introduction to Systems Software

Total: 38 hours

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 related to their major.
Completion of "25-120 Probability and Statistics" or another probability and statistics course with a calculus prerequisite, as approved by the computer science advisor.
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
22C:55 Elementary Theoretical Analysis
22C:56 Elementary Mathematics II
22C:56 Topics in Computer Science
22C:59 History of Computer Science

Bachelor of Arts

The General Education Requirements for this degree are stated in the "College of Liberal Arts" section of the Catalog.

For the B.A. degree, the following computing science core courses are required:

22M:25 Calculus I
22M:35 Engineering Calculus I
22M:45 Calculus I
22M:26 Calculus II
22M:36 Calculus II
22M:46 Calculus II
22M:27 Introduction to Linear Algebra

4 s.h.
4 s.h.
4 s.h.
4 s.h.
4 s.h.
4 s.h.
4 s.h.
4 s.h.

Advanced Courses

22C:15 Software Engineering I
22C:16 Operating Systems
22C:22 Concurrent Programming
22C:22 Advanced Software Engineering II
22C:23 Advanced Computer Organization and Architecture
22C:23 Programming Language Foundations
22C:23 Data Abstractions, Types, and Structures
22C:23 Introduction to Computer Construction

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.

For the B.A. degree, the following computer science core courses are required:

4 s.h.
4 s.h.
4 s.h.
4 s.h.
4 s.h.
4 s.h.
4 s.h.
4 s.h.
4 s.h.

22C:152 Parallel Programming 3 s.h.
22C:155 Introduction to Computation Theory 3 s.h.
22C:144 Database Management Systems 3 s.h.
22C:145 Artificial Intelligence I 3 s.h.
22C:146 Computer Vision and Robotics 3 s.h.
22C:153 Design and Analysis of Algorithms I 3 s.h.
22C:181 Algorithms and Graphs 3 s.h.
22C:178 Computer Communications 3 s.h.
22C:185 Computer Engineering 3 s.h.
22C:116 Topics in Computer Science (if repeated, may be counted only once as an advanced course) arr.
22C:198 Individual Programming Project (if repeated, may be counted only once as an advanced course) arr.
22M:160 Numerical Analysis I Nonlinear Equations and Approximation Theory 3 s.h.
22M:171 Numerical Analysis II Differential Equations and Linear Algebra 3 s.h.
22M:174 Optimization Techniques 3 s.h.
22M:176 Topics in the Numerical Solution of Partial Differential Equations 3 s.h.

These courses cannot be taken pass/no-credit. 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 area 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 complement a major in natural science. General Education Requirement. Some possible courses are listed below, and the computer science advisor may approve others.

Astronomy
201J General Astronomy (GER, lab) 4 s.h.
201L General Astronomy (GER, lab) 4 s.h.

Botany
413 Principles of Botany 3 s.h.
373 Principles of Animal Biology (GER, lab) 5 s.h.

Botany
211 Life Functions in Botany (GER, lab) 5 s.h.
2100 Land Plants: An Evolutionary Survey (not a "world" science) (GER) 4 s.h.

Botany
413 Principles of Botany 3 s.h.

414 Principles of Chemistry II (GER) 3 s.h.
415 Principles of Chemistry Lab II (GER, lab) 3 s.h.

Graduate Programs
Master of Science
Graduate work in computer science must complete the following courses or acquire equivalent proficiency:
22C:18 Operating Systems and Concurrent Programming 3 s.h.
22C:122 Advanced Compiler Organization and Architecture 3 s.h.
22C:123 Advanced Language Foundations 3 s.h.

Required Elective Program
For the B.A. or B.S. degree, students must take at least 12 semester hours of electives in a thematic area with potential computing application, such as business, engineering, physics, or another field in which they plan to apply the computer science degree. These courses must be approved by the student's computer science adviser and cannot be taken pass/credit. See the Computer Science Undergraduate Handbook for more details and examples of approved elective programs.

Honors
Any University of Iowa student with a cumulative grade-point average of 3.20 or higher may enter the College of Liberal Arts Honors Program. Interested students should contact the honors program office in the Shambaugh House Honors Center. To graduate with honors in computer science, students must complete 4-5 semester hours of 22C:99 Honors in Computer Science and submit an acceptable honors thesis (22C:99 can count as one out of both of the two advanced courses for the B.S.). To take 22C:99, students must have the consent of a computer science faculty member. The honors student must know the nature of the intended project for the honors thesis, a plan or timetable for the work, and the nature of the thesis itself. Students are responsible for finding a faculty member willing to supervise their honors project. See the Computer Science Undergraduate Handbook for more details.

Minor
To earn a minor in computer science, students must complete a minimum of 15 semester hours of computer science courses, at least 12 of which must be taken in advanced University of Iowa course work. For the minor only, the following courses are considered advanced: 22C:9 and 22C:99a courses numbered higher than 22C:16, excluding 22C:109-22C:109. All of the advanced courses have prerequisites, so a typical minor will consist of 22C:15, 22C:16, 22C:18, one additional course numbered higher than 22C:16; or 22C:19, 22C:15, 22C:17, 22C:18, and one additional course numbered higher than 22C:18.

Graduate Programs
Master of Science
Graduate work in computer science must complete the following courses or acquire equivalent proficiency:
22C:18 Operating Systems and Concurrent Programming 3 s.h.
22C:122 Advanced Compiler Organization and Architecture 3 s.h.
22C:123 Advanced Language Foundations 3 s.h.

Required Elective Program
For the B.A. or B.S. degree, students must take at least 12 semester hours of electives in a thematic area with potential computing application, such as business, engineering, physics, or another field in which they plan to apply the computer science degree. These courses must be approved by the student's computer science adviser and cannot be taken pass/credit. See the Computer Science Undergraduate Handbook for more details and examples of approved elective programs.

Honors
Any University of Iowa student with a cumulative grade-point average of 3.20 or higher may enter the College of Liberal Arts Honors Program. Interested students should contact the honors program office in the Shambaugh House Honors Center. To graduate with honors in computer science, students must complete 4-5 semester hours of 22C:99 Honors in Computer Science and submit an acceptable honors thesis (22C:99 can count as one out of both of the two advanced courses for the B.S.). To take 22C:99, students must have the consent of a computer science faculty member. The honors student must know the nature of the intended project for the honors thesis, a plan or timetable for the work, and the nature of the thesis itself. Students are responsible for finding a faculty member willing to supervise their honors project. See the Computer Science Undergraduate Handbook for more details.

Minor
To earn a minor in computer science, students must complete a minimum of 15 semester hours of computer science courses, at least 12 of which must be taken in advanced University of Iowa course work. For the minor only, the following courses are considered advanced: 22C:9 and 22C:99a courses numbered higher than 22C:16, excluding 22C:109-22C:109. All of the advanced courses have prerequisites, so a typical minor will consist of 22C:15, 22C:16, 22C:18, one additional course numbered higher than 22C:16; or 22C:19, 22C:15, 22C:17, 22C:18, and one additional course numbered higher than 22C:18.

Doctor of Philosophy
Doctoral students are expected to complete 88-90 semester hours of graduate work, including the thesis. Students must have a master's degree when beginning the Ph.D. program, and need not acquire one. Course
requirements or equivalent proficiency for the discipline include:

224.010 Operating Systems and Concurrent Programming 3 s.h.
224.012 Advanced Computer Organization and Architecture 3 s.h.
224.103 Programming Language Foundations 3 s.h.
224.105 Data Abstractions, Types, and Design 3 s.h.
224.112 Introduction to Compiler Construction 3 s.h.
224.113 Introduction to Computer Organization Theory 3 s.h.
224.144 Database Management Systems 3 s.h.
224.145 Artificial Intelligence I 3 s.h.
224.153 Design and Analysis of Algorithms I 3 s.h.

Students also must complete at least 18 semester hours of 200- and 300-level computer science coursework in addition to 224.119 Research for Dissertation.

In addition to the coursework in computer science, students must complete at least three courses, with grades of A or B, in one of these outside areas: algebra, analysis, logic and set theory, operations research, statistics and probability, and numerical analysis.

At least one course in the outside area must be at the 200 (advanced) level, except in statistics and probability, where the advanced course may be at the 100 level.

After students pass the qualifying examination, they select a faculty adviser to direct their research. Students and their advisers select the dissertation committee.

In consultation with the adviser and dissertation committee, students prepare a proposal that specifies the area of specialization for the M.S. comprehensive examination. The dissertation committee administers the specialty examination after most of the research for the dissertation is completed.

Examinations are described in the Computer Science Graduate Handbook. Students prepare a written proposal for research and present it and defense to the dissertation committee. They must demonstrate expertise in the area of specialization. The written proposal is defended in terms of originality and significance.

Students must make a final oral defense of the completed dissertation.

The department is highly selective in admitting doctoral students and usually considers only applicants with a grade-point average above 3.50.

Graduate Service Courses

Competence and excellence in the use of a digital computer in problem solving is useful for all science programs, and advanced study and research in many disciplines.

For these students, the following courses are recommended: Introduction to Programming with Pascal and 224.102 Programming Techniques and Data Structures, recommended Students in 100's to which other programming languages are heavily used may find 224.150 Intro to Data Structures with FORTRAN or 224.151 Programming with COBOL more appropriate.

Courses

Primarily for Undergraduates

224.060 Cooperative Education Training Assignment 5 s.h.

An on- or off-campus work experience with a selected company or university that provides students with job experience before they enter the job market. Students develop skills, learn the role of the industry, and expand their knowledge of computer science while earning credit. This course cannot be repeated for credit in the major.

224.123 Python 3 s.h.

Introduction to computer programming using Python language. Prepares students for software engineering or computer science, education, and other careers where programming is a key tool. Topics include programming concepts, data structures, algorithm design, problem solving, and software development. 224.123 is a prerequisite for 224.150.

224.124 Java Programming 3 s.h.

Introduction to computer programming using Java language. Prepares students for software engineering or computer science, education, and other careers where programming is a key tool. Topics include programming concepts, data structures, algorithm design, problem solving, and software development. 224.124 is a prerequisite for 224.150.

224.125 C++ Programming 3 s.h.

Introduction to computer programming using C++ language. Prepares students for software engineering or computer science, education, and other careers where programming is a key tool. Topics include programming concepts, data structures, algorithm design, problem solving, and software development. 224.125 is a prerequisite for 224.150.

224.126 Programming in Python 3 s.h.

Introduction to computer programming using Python language. Prepares students for software engineering or computer science, education, and other careers where programming is a key tool. Topics include programming concepts, data structures, algorithm design, problem solving, and software development. 224.126 is a prerequisite for 224.150.

224.131 Introduction to Computer Science 3 s.h.

An introduction to computer science, including computer systems, programming languages, algorithms, and problem-solving techniques. Includes basic concepts and principles of computer science, such as data structures, algorithms, and problem-solving techniques. 224.131 is a prerequisite for 224.150.

224.150 Intro to Data Structures 3 s.h.

Introduction to computer programming using data structures and algorithms. Prepares students for software engineering or computer science, education, and other careers where programming is a key tool. Topics include programming concepts, data structures, algorithm design, problem solving, and software development. 224.150 is a prerequisite for 224.151.

224.151 Programming with COBOL 5 s.h.

Introduction to computer programming using COBOL language. Prepares students for software engineering or computer science, education, and other careers where programming is a key tool. Topics include programming concepts, data structures, algorithm design, problem solving, and software development. 224.151 is a prerequisite for 224.150.

224.152 Introduction to Database Systems 3 s.h.

Introduction to database systems, including database concepts, relational database models, SQL, and database design. Prepares students for software engineering or computer science, education, and other careers where programming is a key tool. Topics include programming concepts, data structures, algorithm design, problem solving, and software development. 224.152 is a prerequisite for 224.150.
Mathematics • Liberal Arts 169

MATHEMATICS

Chair: William A. Wick
Professor: Daniel O. Schreiner, Raymond E.
Asthana, Thomas Stevens, Norman P. Caw, Victor
Morawetz, Melvin M. Roth
Associate Professors: Peter G. Harrison, Fred
Coombs, Herbert H. Helwig, E. O. Wensinger,
James Stach, William J. Adams, Mark K. Karp, Victor
Brett, Robert A. Karp, Robert J. Anderson
Instructors: Sue E. Toth, John H. Chang, John
Matthews, Richard J. Stach, John W. M.
Holden, Brian W. Mathews, Babette M.
McKee, Marcia E. L. Johnson, James D.
Keim, John R. Keim, J. E. Keim
Tutors: Mary A. Karp, John W. Karp

Program in Mathematics

The program in mathematics is designed
for students who wish to pursue a career in
commerce, industry, government, or business
or who plan to pursue graduate study in
mathematics. Program B is intended primarily
for students seeking

Program B Requirements

22M 25-26 Calculus I-II
22M 35-36 Engineering Calculus III-IV
22M 45-46 Accelerated Calculus I-II

22M 21 Introduction to Linear Algebra
22M 28-30 Calculus B
22M 190 Introduction to Ordinary Differential Equations
22M 500 Elements of Group Theory
22M 55 Fundamental Properties of Spaces and Functions

3 hrs.
3 hrs.
3 hrs.
4 hrs.
4 hrs.
3 hrs.
3 hrs.
3 hrs.

Higher level courses may be substituted for
the above, if approved by the Department of
Mathematics.

Any additional semester-hour upper level courses in
mathematics exclusive of 22M-89, 22M 90, or 22M 195,
12-13 s.h.

The computer laboratory sequence 22M 30-32 may count as one of these
courses. The following computer science and
statistics courses may also be used to fulfill this requirement.

22C 16 Introduction to Programming with Pascal
22C 17 Programming Techniques and Data Structures
22C 21 Algorithms and Data Structures
22C 186 Introduction to Computation Theory
22S 113 Design and Analysis of Algorithms
22S 116 Algorithmic Mathematics I
22S 116C Algorithmic Mathematics II
22S 333 Quality Control and Engineering Statistics
22S 232 Regression Analysis
22S 232 Introduction to Probability
22S 234 Introduction to Mathematical Statistics
22S 306 Applied Time Series Analysis
22S 264 Introduction to Discrete Probability Models
22S 267 Introduction to Stochastic Processes

Total 37-38 s.h.

Restrictions

The program must include a two-semester sequence from the following list.

22M 100/140 Introduction to Ordinary Differential Equations/Continuous Mathematical Models
22M 210/212 Introduction to Ordinary Differential Equations/Intermediate Differential Equations
22M 214/216 Introduction to Ordinary Differential Equations/Introduction to Partial Differential Equations I
22M 216/218 Introduction to Analysis I-II
22S 120/122 Algebra I-II

22M 271 Introduction to Linear Algebra
22M 123/124 Foundations of Set Theory/Foundations of Logic
22M 3690 Calculus III/Introduction to Differential Geometry I
22M 119/119 Complex Variables/Complex Variables Applications
22M 201/201 Elements of Group Theory/Abstract Algebra I
22M 19/199 Foundations of Geometry/Workshop in Mathematics
22M 251/251 Introduction to Probability/Introduction to Mathematical Statistics
22S 115/117 Introduction to Probability/Introduction to Stochastic Processes

Or any two courses chosen from one of the following
groups.

22M 237/237 Elements of Numerical Analysis/Elements of Numerical Analysis/Approximation Theory/Approximation Theory/Approximation Theory
22M 250/250 Elements of Functional Analysis/Functional Analysis
22M 255/255 Elements of Computer Science and Statistics/Computer Science and Statistics

Computer science and mathematics courses are encouraged, with the approval of the students, to substitute higher level courses in the same area for any of these requirements. The student handbook offers further advice on the selection of courses.

Program B Requirements

This program is intended primarily for students seeking secondary school teaching certification. It includes "Technology Education" in the "College of Education" section of the catalog.

22M 25-26 Calculus III
22M 35-36 Engineering Calculus III-IV
22M 45-46 Accelerated Calculus I-II

22M 21 Introduction to Linear Algebra
22M 28-30 Calculus B
22M 210/212 Introduction to Differential Equations/Intermediate Differential Equations
22M 214/216 Introduction to Ordinary Differential Equations/Introduction to Partial Differential Equations I
22M 216/218 Introduction to Analysis I-II
22S 120/122 Algebra I-II

22M 271 Introduction to Linear Algebra
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:107 or higher are required. The statistics and computer science courses listed in the program B degree requirements for the B.S. degree may also be used to fulfill this requirement.

General Education Requirements

Candidates 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 enrolled toward the major requirements must be taken at the University of Iowa.

Double Major In the Division of Mathematical Sciences

Students wishing to combine a degree in mathematics with one in computer science, statistics, or actuarial science must satisfy the requirements of program A or program B. Both degrees must be taken in the same major, R.S. The College of Liberal Arts requires that students seeking a mathematics double major earn a minimum of 56 semester hours in courses taken outside the division.

Minor

The minor in mathematics requires:

A minimum of 15 semester hours credit earned in Department of Mathematics courses; at least 2 of these 15 semester hours must be taken at The University of Iowa in advanced courses; neither transfer credit nor credit by examination is accepted toward the 12 semester hours of advanced work; advanced courses are 22M:17, 22M:2A, and all courses numbered 22M:50 or higher except 22M:81, 22M:104, and 22M:105. A grade-point average of at least 2.00 in all work attempted in the Department of Mathematics.

No course counted toward the minor may be taken pass/no credit.

Honors

Any undergraduate student with a cumulative grade-point average of 3.50 or higher may join the College of Liberal Arts Honors Program; interested students should contact the Dean's office in the Stouffer-House Honors Center. In order to graduate with honors in mathematics, a student must be recommended for graduation by the College of Liberal Arts Honors Program, must complete the regular requirements for an undergraduate major in mathematics with a grade-point average of at least 3.40, and must complete either an honors project or an approved 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:107 for at least 3 semester hours. For more information, contact the Mathematics Department honors advisor.

Graduate Programs

Master of Science

Students earn the M.S. through course and comprehensive examinations. There is no M.S. thesis.

There are four programs leading to a M.S. degree in mathematics. The requirements (courses and comprehensive examination areas) may be modified with the consent of the department.

Program I

This program prepares students for further study of pure and applied mathematics and for employment in government and industry. Students must take a two-semester sequence in analysis (either 22M:115-116 or 22M:121-122) or a course in topology (22M:123); and a two-semester sequence in abstract algebra (either 22M:125-126 or 22M:120-121). The student must also complete 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 courses numbered 22M:110 or higher.

Computer Science

22C:122 Advanced Computer Organization and Architecture

22C:123 Programming Language Foundations

22C:124 Introduction to Computation Theory

22C:145 Artificial Intelligence

Any courses numbered 22C:100 or higher

Statistics

22C:133 Introduction to Probability

22C:154 Introduction to Mathematical Statistics

22C:167 Introduction to Stochastic Processes

Any courses having any of the above three courses as prerequisites

Any course numbered 22C:200 or higher
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 22180/100 or higher 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 three core courses and two comprehensive examinations, one in differential equations (22M144, 22M145) and one in numerical analysis/optimization (22M170, 22M171, 22M174). The required courses are:

22M144 Introduction to Partial Differential Equations I
22M145 Intermediate Differential Equations
22M140 Continuous Mathematical Models
22M151 Discrete Mathematical Models
22M174 Optimization Techniques
22M170 Numerical Analysis: Numerical Equations and Approximation Theory
22M171 Numerical Analysis: Differential Equations and Linear Algebra

Two additional courses from the following:
22M116 Elementary Probability
22M118 Concepts of Analysis
22M160 Continuous Mathematical Models
22M161 Discrete Mathematical Models
22M154 Theory of Graphs
22M164 Operating Systems and Concurrent Programming

22M155 Design and Analysis of Algorithms
22M157 Introduction to Probability
22M166 Introduction to Mathematical Statistics
22M157 Introduction to Stochastic Processes

The program requires a minimum of 30 semester hours of graduate credit, including at least 24 semester hours in the Designated Program. Students who have taken one of the courses below are required to substitute electives.

Program IV
This program is designed for nondepartmental students working toward Ph.D. degrees in areas that require mathematical knowledge. The program has no required courses. Course distribution requirements are the same as those for program I.

Students in program IV are considered to have passed the comprehensive examination for the master's degree in mathematics if they have maintained a minimum grade point average of 3.00 in all mathematics courses taken for the master's degree in mathematics and have substantially completed the Ph.D.

comprehensive examination in the chosen area. Students in program IV are assigned a mathematics adviser, who works with them and whose major advice is to plan an appropriate curriculum for the master's degree in mathematics. A suitable program of study should be approved by a mathematics adviser before the student takes the Ph.D. comprehensive examination, and the number of the mathematics faculty should serve on the Ph.D. comprehensive examination committee.

Admission
Admission to a Ph.D. degree (program I-III) is based on a student's undergraduate coursework and grades, letters of recommendations, and GRE General Test scores (also TOEFL, scores for foreign students). The following guidelines are current although exceptions may be made. Numerical standards are reset each 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 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 grades of B or higher in other courses.

- Students must submit three letters of recommendation to support their applications.

- Students must score at least 500 on the quantitative section of the GRE General Test. Applicants are encouraged to submit scores for the mathematics area examination as well. In particular, students who need financial support whose credentials may show some gaps.

- 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 emphasizes the interdependence between "pure" and "applied" mathematics. It cooperates in interdisciplinary doctoral programs with the College of Education and 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 at least three years of graduate residence, including at least one year at The University of Iowa. While there are no specific regulations regarding the Ph.D. comprehensive examination (see below), students should give these high priority.

- To further encourage mathematical breadth, students must earn at least 18 semester hours of graduate credit in regular courses equivalent to or more advanced than the Ph.D. comprehensive examination, or a number of the mathematics faculty should serve on the Ph.D. comprehensive examination committee.

- The Ph.D. comprehensive examination consists of three parts, each with a three-hour written exam, all taken over a two-week period. The three areas are chosen by the student from the department's list of comprehensive examinations and must be taken in the following terms or any term subsequent to them.

- The comprehensive examination in analysis/optimization consists of five areas: three areas of the preceding part. The Ph.D. comprehensive examination in linear algebra consists of eight areas. The Ph.D. comprehensive examination in algebra consists of at least one area of the preceding part. The Ph.D. comprehensive examination in Algebra consists of at least one area of the preceding part. The Ph.D. comprehensive examination in Algebra consists of at least one area of the preceding part.

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Spring Semester
225.102 Actuarial Mathematics I
225.104 Introduction to Mathematical Statistics
225.106 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:

17C Introduction to Computing with R
225.15 Introduction to Programming with Python
225.26-28 Calculus I-III
225.45-46 Introduction to Probability
225.154 Introduction to Mathematical Statistics
225.156 Analysis and Design of Experiments I
At least two of the following:
63.163 Introduction to the Design of Sample Surveys
225.156 Applied Time Series Analysis
225.161 Application of Multivariate Statistical Techniques
225.163 Nonparametric Statistical Methods
225.180 Introduction to Stochastic Processes
225.181 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, bioinformatics, or science. Students also are 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:
225.126 Actuarial Mathematics I
225.154 Introduction to Mathematical Statistics
225.156 Methods of Statistical Inference

Business Requirement

Honor Requirements

Qualifying 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 3.5 in all departmental courses numbered 120 and higher, pass certain professional exams, and complete at least 35 credits in all required 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

Statistics can earn a minor in statistics by taking 15 semester hours in statistics courses, 12 of which must be in courses taken at The University of Iowa numbered 225.105 and above. Students can earn a minor in actuarial science by completing 15 semester hours in Department of Statistics and Actuarial Science courses, including 225.120, 225.126, 225.153, and 225.154. For either minor, the grade-point average in department courses must be at least 2.0. 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 research programs, the committee's recommendations usually are based on (1) 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 accrue 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 225-165-166, 225-175-176, and 229-141-142.

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

Every graduate course is required. These courses are:

225-153 Introduction to Probability
225-154 Introduction to Mathematical Statistics
225-155 Math. of Actuarial Science
225-175 Stochastic Processes
225-177 Numerical Analysis for Actuaries
Four courses from:

225-176 Casualty Actuarial Mathematics I
225-182 Life Actuarial Mathematics I
225-178 Advanced Credibility Theory
225-180 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

21M-115 Introduction to Analysis I
21M-133 Introduction to Probability
21M-154 Introduction to Mathematical Statistics
225-157 Introduction to Stochastic Processes
225-201 Theory of Statistics I
At least two of these:
225-169 Introduction to Discrete Probability Models
225-172 Topics in Statistics
225-232 Theory of Statistics II
225-233 Introduction to the Theory of Nonparametric Statistics
225-253-254 Advanced Inference I-II
225-260 Linear Models
225-266 Multivariate Analysis
225-264-265 Theory of Probability I-II

Applied Statistics

Without Thesis

225-162 Regression Analysis
225-153 Introduction to Probability
225-174 Introduction to Mathematical Statistics
225-156 Analysis and Design of Experiments I
225-173 Data Analysis
At least two of these:
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 advisers in developing programs of study tailored to their specific interests. If the student's interest in a particular applications area is strong, a program in another department may be more appropriate, for example, educational measurement and statistics (education), operations research (industrial and management engineering), and biostatistics (preventive medicine and environmental health).

With Thesis

225-153 Introduction to Probability
225-154 Introduction to Mathematical Statistics
At least two of these:
225-162 Regression Analysis
225-156 Applied Time Series Analysis
225-158 Analysis and Design of Experiments I
225-163 Application of Multivariate Statistical Techniques
225-159 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 adviser. When the adviser approves, 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.

Theoretical Thesis is a statistical presentation 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 Departments 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.

225-160 Probability and Statistics
225-162-164 Introduction to Probability-Introduction to Mathematical Statistics
225-262 Operations Research M.B.A.
156-982 Quality Control and Engineering Statistics
225-152 Regression Analysis
156-460 Theory and Practice
452-394 Production Management
225-253 Forecasting
225-154 Analytic and Design of Experiments I
225-420 Organizational Design, Change, and Transformation
225-256 Engineering Administration II

Students also must take at least 2 semester hours of seminar and/or practicum. Students are required to have a grade-point average of at least 2.00 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
225-158 Analysis and Design of Experiments I
225-167 Introduction to Stochastic Processes
225-202 Data Analysis
225-261-262 Theory of Statistics I-II
225-263 Advanced Inference I
225-265 Linear Models
The qualifying examination covers intrinsically probability, mathematical statistics, and regression analysis. These topics generally are covered in 225:190, 225:153, 225:155, and 225:156; study guides are available from the department. Students who are unsuccessful in their first attempt may repeat the qualifying examination only one time.

Students take a comprehensive examination after completing most of the course work on their approved plan of study, typically during the third year.

The comprehensive examination consists of a written core examination and an oral examination on statistical inference, linear models, and probability. These topics are generally covered in 225:202, 225:255, and 225:294. Study guides for the core examination are available from the department.

A program that does not conform to the prescribed requirements but is of high quality may be approved by the department thereafter.

Special Features

Because statistics is often taught with other sciences as research projects, it is important that students gain experience in group efforts. The department tries to provide this experience in several courses.

In addition, the department houses the Statistical Consulting Center, which offers assistance to members of the University community in obtaining expertise in statistical problems by carrying out the analysis of experimental data. Under the auspices of this program, students may participate in these activities as part of their training.

The majority of the Statistical Consulting Center projects involve statistical problems resulting from research conducted by students in other departments; the center also seeks involvement in larger research projects and proposal writing.

Courses

Primarily for Undergraduates

Students may not receive credit for a Department of Statistics and Actuarial Science course numbered below 110 after receiving credit for one numbered above 110. Students may receive credit only for one of these courses: 225:212, 225:225, 225:255, 225:294.

225:115 Statistics and Society 3.0

3.0 credits. An introduction to general principles of statistics, and to the social, health, and psychological sciences, focusing on making and interpreting estimates of statistical relevance. GEP requirement or liberal arts requirement. Prerequisite: 225:101 or equivalent in general statistics.

225:294 Advanced Probability 4.0

4.0 credits. Random variables, distribution functions, characteristic functions, and expected values, with emphasis on the normal and binomial distributions. Prerequisite: 225:293 or equivalent.

For Undergraduates and Graduates

225:290 Cooperative Education Internship 4.0

4.0 credits. For coordinated undergraduate, graduate, and advanced undergraduate students. Arrangements are made in cooperation with employing organizations to provide students with experience in professional activities. Prerequisite: 225:156 or equivalent. See appropriate advisor for procedures.

225:295 Geostatistics Seminar 3.0

3.0 credits. Statistical techniques useful in the study of the earth sciences, including spatial data analysis, geostatistics, computer simulation, and statistical software. Prerequisites: 225:255 or equivalent. See appropriate advisor for procedures.
Laboratories, research laboratories, and industrial laboratories (Food, Drug,
chemical, pharmaceutical, and general engineering companies).

Students who continue beyond the bachelor's degree have career opportunities
in these same areas plus college and university teaching, with greater
responsibilities and commensurately higher salaries.

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 69.118, 69.117, or 69.112, and 1 semester hour of 69.496/498 Seminar in Microbiology may count toward this requirement.

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 requires the fulfillment of the microcourse requirements specified above for the B.S. degree.

Microbiology Seminar (69.116) should be taken to credit only once during the senior year. Students are encouraged to take the course for 0 semester hour credit during other semesters after they have taken 69.115. Microbiology majors must take the following courses in addition to required microcourses.

141 Principles of Chemistry I 5 s.h.
142 Principles of Chemistry II 3 s.h.
141 Organic Chemistry I 5 s.h.
142 Organic Chemistry II 3 s.h.
99.122 Biochemistry and Molecular Biology I 4 s.h.
99.123 Biochemistry and Molecular Biology II 3 s.h.
21M.104 Introduction to the Biological Sciences 3 s.h.
or
21M.25 Calculus I 4 s.h.
or
21M.35 Engineering Calculus I 4 s.h.
29.11-12 College Physics 5 s.h.
373 Principles of Animal Biology 5 s.h.

Recommended courses include the following:

AW.16 Expository Writing 3 s.h.
or
49.112 Writing for the Sciences 3 s.h.
22C.7 Introduction to Computing with FORTRAN 3 s.h.
or
22C.16 Introduction to Programming with Pascal 4 s.h.
and
22C.17 Programming Techniques and Data Structures 3 s.h.

Honors Program

The honors program is open to juniors and seniors who have a grade-point average of at least 3.00 overall and 3.20 in microbiology courses. The honors program in microbiology requires 25 semester hours of course work in microbiology, including 6 semester hours of 69.117/112 Honors Microbiology. These two courses comprise 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 undergraduate minor in microbiology requires at least 15 semester hours of credit in microbiology courses, with a minimum grade-point average of 2.00. Of these 15 semester hours, at least 12 must be taken at The University of Iowa in courses numbered 69.110 and above.

Graduate Programs, Faculty Roster, Courses

See "Microbiology" in the College of Medicine section of the Catalog.

MILITARY SCIENCE (ARMY ROTC)

Militia Leadership Colony: Perry V. Roberts
Head, Department of Military Science: Robert L. Hahn
Head, Department of Military Science: John W. Griesie
Assistant commanders: Mark A. Croft (Captain), Richard Lebeau (Major), Frank C. Miller (Captain), Steven M. W. Maitre (Captain), John A. Nowak (Captain)

Instructor: William T. Jackson (Staff Sgt.), Curley W. Zion (SGT)

The Military Science Department is a nondegree-producing academic department that administers the Reserve Officers Training Corps (ROTC) programs. The department provides students with education in the role of the military and leadership in personnel training which provides those students who desire to serve in the armed forces, 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 10 semester hours may be applied toward graduation.

Undergraduate Program

Basic Course

The ROTC basic course is designed primarily for freshmen and sophomores. It presupposes the fundamentals of leadership and 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.

23H.1 The Profession of Arms 1 s.h.
23H.2 The Military in a Modern Society 1 s.h.
23H.3 Military Survival Skills 2 s.h.
23H.4 Principles of Modern Warfare 2 s.h.

Students who plan to pursue a commission as an officer should take 23H.5 Leadership Laboratory with 23H.6. 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 cadet camp during the summer. Students with prior military training may be exempt from the basic course requirements.

Advanced Course

The ROTC advanced course, though open to seniors, freshmen, and sophomores, is designed primarily for students who wish to pursue a commission as a lieutenant in the U.S. Army upon graduation. It is open to both undergraduate and graduate students. Most students in the advanced course incur an obligation with the military that can be satisfied in the regular army or the reserve army.

A grant of 15 per month is provided to students who agree to serve in the armed forces. Additional financial assistance may be provided through participation in training with an army reserve unit.

To enter the advanced course, students must satisfy the basic course requirements, be academic sophomores and have at least a 2.86 grade-point average. A 1-week paid camp, normally taken the summer before the senior year, is required for all students wishing to become army officers. The following courses satisfy the advanced course requirements for completion of the academic program.

23H.5 Advanced Military Fitness Training 3 s.h.
(taken with the same instructor with 23H.6)
23H.6 Advanced Leadership 3 s.h.
23H.11 Field Operating Unit Tactics 5 s.h.
23H.16 Military Management 5 s.h.
23H.19 Service Orientation 3 s.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 course work 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, too, are available in music education and music therapy.

General Requirements

At undergraduate levels require School of Music approval. Entering undergraduate students wishing to major in music are expected to either audition in person or by tape recording in advance of registration. Transfer students also must provide evidence of acceptable levels of performance and must commit with a representative from the theory area to organize their level of competence 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 Musicianship and Theory

16 s.h.

25-11 Group Instruction in Piano

4 s.h. (for the successful completion of proficiency exams I and II)

25-11 History of Music I

3 s.h.

25-12 History of Music II

3 s.h.

25-15 Group Recital

1 s.h.

(To complete the senior recital, students must have achieved preparation level status or been enrolled in upper-division applied music courses. See "Applied Music" in this section of the Catalog.)

At least four semester hours of electives from those:

25-16 Composition

3 s.h.

25-17 Arranging for Band

2 s.h.

25-145 Counterpoint before 1600

3 s.h.

25-147 Counterpoint after 1600

3 s.h.

25-148 Analysis of Music Literature

1600-1750

3 s.h.

25-150 Analysis of Music Literature

1750-1825

3 s.h.

25-151 Analysis of Music Literature

1826-1880

3 s.h.

25-152 Analysis of Music Literature

Special Topics

25-153 Keyboard Harmony

5 s.h.

25-157 Orchestration

2 s.h.

25-160 Chamber Music I

3 s.h.

25-161 Chamber Music II

2 s.h.

25-162 Chamber Music III

1 s.h.

25-163 Jazz Improvisation I

1 s.h.

25-164 Jazz Improvisation II

1 s.h.

25-165 Jazz Improvisation III

1 s.h.

25-164 Jazz Improvisation IV

1 s.h.

(These combinations of courses 25-145 and 25-147 or courses 25-161 and 25-162 or courses 25-163 and 25-164 may not be used exclusively to fulfill less than four-semester-hour requirements.)

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 academic recital. Determination of readiness for passing into upper-level applied music is determined in the student's last hour 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 maximum allowable lower-level registration must do so under the upper major category.

Ensemble Requirements

Students must also participate in a major instrumental ensemble of their choice. During the summer semesters, students must be available for instrumental participation as needed. Ensemble assignments are made at the discretion of the major teacher and ensemble director. String students participate in University Orchestra and Chanters Orchestra. Keyboard majors must substitute accompanying for major ensemble participation for two semesters during their junior and/or senior years, with the consent of their advisors. Any requests for adjustment of this requirement should be submitted in writing to a review committee consisting of the College of Music faculty advisor, the applied teacher, the major teacher, and a representative from the director's office. The committee meets regularly at the end of each major registration period.

Major ensembles are:

25-162 Chamber Singers

1 s.h.

25-164 Symphony Band/Concert

Band/University Band

6 s.h.

25-162 University Chorus

arr.

25-165 Kozelek/University Choir

arr.

25-162 University Choir

arr.

25-162 Student may take advanced electives in performance (including chamber music and piano performance), theory, composition, music education, music history, music literature, orchestration, and conducting.

MUSIC

Interim Director: John D. Hill

Professor: Terence Agnew.

Tenure: Walter T.


Professor emeriti:


Associate professor emeriti:

Theresa Matroni, Helen Vamos, Elizabeth Judary, Richard J. Rios, Joseph Catoi, Michael Totscher, Carl Schreiber, Don E. Hayes, William Hatcher, Morgan Jones, George E. Fazio, Marilyn Mor, Kirk Strickland, Carol Thomas, Robert B. Poe

Assistant professor emeriti:

Diana Baier, Carl Colman, Kenneth Phillips, Vern Shafer, Mary Wagner, Mark Singer, Ed Zadoian

Adjunct professor emeriti:

Robert Meyer, Paul Mace, John T. Aronov

Graduate degrees offered:

M.A., M.F.A. in Music, D.M.A.

Graduate degrees offered M.A., M.F.A. in Music, D.M.A.

A primary function is a fine arts community of one university. The University of Iowa School of Music has long been recognized as one of the most university-based schools of music in the United States. The school's on-campus enrollment of approximately 500 students in music is large enough to support strong programs in all areas of specialization, yet small enough to maintain a high level of personal attention essential to each student's development.

The faculty consists of highly trained artist-teachers in each area of specialization. Faculty ensembles in residence include the St. Diarmuid String Quartet, Iowa Wind Quintet, and the Iowa Brass Quintet. Open to students faculty members are offered in all band and orchestra instrumental instruction, piano, and organ. At the minimum level, the school's curricula offer all qualified students the opportunity for full study of music toward either professional or avocational goals. The curricula are designed primarily as preparatory for teaching in secondary schools, colleges, and universities in music education, as performance. The school is a charter member of the National Association of Schools of Music.
Performance Major
Performance majors are available in each of the orchestral areas—administered courses in woodwinds, and percussion—and in voice and music education. Students must take at least 17 additional semester hours beyond the upper-division Music General course requirements, to be chosen from a list of electives unique to each performance major area. Course listings for each of the respective areas are available from the music college 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 adviser in addition to their regular faculty adviser. Senior recital and recital attendance requirements are the same as those 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 D or better) of 25.111 Orientation to Music Therapy, 25.299 Music Therapy Laboratory I, specific courses in music therapy listed below, specific courses are required, and satisfactory grades in psychology, social work, and human development.

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 professional registration with the NAOMT (National Association for Music Therapy) and are qualified to sit for the board certification examination. To increase their job opportunities in the profession, students are encouraged to complete music teacher certification requirements. Complete information on the program is available in the music education office.

Course requirements for the major in music therapy are as follows:
25.095 Music Therapy Practice 3.0 s.h.
25.111 Orientation to Music Therapy 2.0 s.h.
25.144 Psychology of Music 2.0 s.h.
25.148 Behavioral Research in Music 2.0 s.h.
25.158 Music Therapy Techniques: Abnormal Children 3.0 s.h.
25.179 Music Therapy Techniques: Adult Clients 3.0 s.h.
25.180 Internship in Music Therapy 2.0 s.h.

Composition Major
Applicants should submit examples of creative work for evaluation by the composition faculty. Upon admission to the program, students are assigned a faculty adviser.

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, experimental music, music theory, music history, and applied music. An appropriate plan of study is designed by the students in consultation with the adviser.

The Bachelor’s Thesis (25.99) replaces the recital/recording requirement for 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 present proofs (and other evidence of scholarly preparation) of evaluation by the theory faculty. Upon admission to the program, students are assigned a faculty adviser.

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 adviser.

The Bachelor’s Thesis (25.99) replaces the recital required 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 academic and musical studies, is offered in addition to the core requirements listed under the B.M. degree as well as history and composition. The B.A. is not available in the music therapy, voice, or jazz emphasis programs. Students may earn teacher certification if they complete the curriculum listed for the appropriate certification program (e.g., strings, brass, woodwinds, and percussion; vocal and keyboard; see Teacher Certification (Music Specialties), below). Specific course requirements vary for each of the available majors under the B.A. degree, although all College of Liberal Arts General Education Requirements must be met for each student. Students should check with their advisers, 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, and music in special education. In addition to the B.A. or B.M. requirements in music and liberal arts, certification to teach music in Iowa schools requires satisfactory completion of specific requirements in the area of concentration. Requirements in the instrumental and vocal areas are listed below. The general requirements listed under “Secondary Education” in the “College of Education” section of the Catalog.

String Majors
Instruction in performance (violin and viola) takes place in one of two 25.23 (cello) and bass major settings.

25.100 Basic Strings (violin, viola, and bass) 2.0 s.h.
75.145 Instrumental Techniques (violin, viola, and bass) 2.0 s.h.
25.106 Instrumental Conducting 2.0 s.h.
75.20 String Methods and Materials 4.0 s.h.
25.36 Introduction to Teaching Music 2.0 s.h.
25.146 Methods and Materials: Elementary School Instrumental 2.0 s.h.
25.191 Observation and Laboratory Practica in the Secondary School 6.0 s.h.
25.196 Special Area Student Teaching 6.0 s.h.
25.187 Seminar: Curriculum and Student Teaching 1.0 s.h.

String majors preparing for music teacher certification must take all examinations in 25.71-72 Group Examinations in Piano III.

Brass, Woodwind, and Percussion Majors
Knowledge, skills, and perception majors in music education participate in a concert band each semester and in marching band for four or more years during their four years in residence at the University. Placement in these bands is optional, and all music education majors are encouraged to participate in music education courses that involve special areas of interest and opportunity.

Courses required include the following.
75.143 Instrumental Techniques 4.0 s.h.
25.106 Marching Band Techniques 1.0 s.h.
25.106 Jazz Band Techniques 1.0 s.h.
25.146 Methods and Materials: Elementary School Instrumental Music 2.0 s.h.
75.96 Introduction to Teaching Music 2.0 s.h.
25.187 Practicum: Band Instrument Care and Repair 1.0 s.h.
75.146 Band Methods and Materials 3.0 s.h.
75.125, 126, 128 Instrumental Conducting 3.0 s.h.
75.13 Observation and Laboratory Practica in the Secondary School 6.0 s.h.
25.192 Special Area Student Teaching 1.0 s.h.
25.187 Seminar: Curriculum and Student Teaching 1.0 s.h.

Students preparing for music teacher certification must take all of the above courses and take the auditions for special areas of interest and opportunity in 25.71-72 Group Examinations in Piano III.
Vocal and Keyboard Majors

Vocal performance majors should consult the music office for recommendations.

17.10 Child and Adolescent Voice Production
2 s.h.
17.147 Choral Methods
3 s.h.
17.148 Choral Conducting and Literature
3 s.h.
25.115-116 Electives for Singers III
4 s.h.
37.09 Introduction to Teaching Music
2 s.h.
37.148 Methods and Materials: Elementary School General Music
3 s.h.
37.148 Methods and Materials: Secondary School General Music
3 s.h.
37.151 Observation and Laboratory Practice in the Secondary School
2 s.h.
47.151 Special Area Music Teaching
6 s.h.
67.151 Seminar: Curriculum and Student Teaching
1 s.h.

Vocal and Machine majors preparing for music teacher certification must pass the proficiency examination of 25.71-72 Group Instruction in Piano III. In addition, keyboard majors should register for 25.17 Non-Major Piano. Vocal majors should register for 25.14 Non-Major Piano for two semesters.

Keyboard Majors (Nonvocal)

Keyboard majors who wish to teach in the nonvocal area must complete the prerequisites in either the brass-wind-percussion or string areas and pass the proficiency examination of 25.71-72 Group Instruction in Piano III. In addition, keyboard majors should register for 25.17 Non-Major Piano for two semesters. Vocal majors should register for 25.14 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):

25.120 Music education and Theory I
5 s.h.
25.209 Music education and Theory II
2 s.h.

Students who have studied music in a public school or have taken music courses in the Elementary School of Music are eligible for these courses. The requirements for these courses are:

- A grade of B or better in each course.
- A minimum of 75% in each course.
- A minimum of 85% on the final examination.

Minor

Students may minor in music by completing 12 semester hours in the School of Music. A complete list of advanced courses is available at the music office.

Graduate Programs

In order to graduate, students must complete the School of Music major requirement in music theory (24 hours), at least 12 of which must be at the graduate level. A complete list of required courses is available at the music office.

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
- 25.147 Counterpoint after 1600
- 25.230 Observation and Teaching in Theory
- 25.230 Methods and Techniques of Teaching Music Theory

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 1st year of a written thesis. The Master of Arts without thesis is offered in music education. Both theses and theses require a minimum of 30-33 hours of graduate work. Information about specific admission and curriculum requirements for each degree is available from the School of Music. All curricula must include the requirements listed below.

General Requirement

32.211 Introduction to Graduate Study
2 s.h.
Music Theory
25-240 Introduction to Contemporary Analysis and Theory 3 s.h.

Music History
25-100 Advanced History and Literature of Music 4-5 s.h. satisfactory examination score:
If exempted from 25-201 and/or 25-202 as a result of the advisory examination, students elect another course from the music history sequence 25-330-339, 25-313-314, 25-316-317, 25-323-324, 25-330-332, and may elect other musicology courses.

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 senior year, students must be available for ensemble participation as needed. Ensemble assignments are made by the major teacher and for the ensemble director. Keyboard majors may substitute accomplishment as a member of an ensemble, at the advisor's discretion. Theory: composition, musicology, and music education majors may, with their advisor's permission, substitute other ensembles.

Requests for adjustment of this requirement must be submitted in writing to a review committee consisting of the ensemble director (soprano), the advisor, the major teacher, and a representative from the director's office. The committee meets regularly at the end of each academic registration period.

Admission
Minimum requirements established for admission to the School of Music are as follows:
Composition—representative musical scores
Theory—analyses or research papers or written submission
Performance (including conducting)—audition
Pedagogy—contact School of Music

Information about specific admissions 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 opera theater directing. It requires a minimum of 60 semester hours of graduate work.

In addition to the entrance and curricular requirements for the Master of Arts degree, students also must present at least two full-length recitals or programs (25-240) M.F.A. Thesis, for which a minimum of 6 semester hours of credit are 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 "Graduate College" section of the Catalog for further details.

Doctoral Degrees
General Requirements
All doctoral study in music includes:

1. Minimum course requirements listed under the M.A. degree.
2. One or more additional electives from the following: 25-245, 25-147, 25-148, 25-152, 25-11.
3. One or more additional courses in the History of music chosen from those listed in the major's degree requirements.
5. 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 their first term of registration unless excused by their advisors (see list of major ensembles in this section of the Catalog). During the summer semester, students should be available for ensemble participation as needed. Keyboard majors may substitute 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 already have achieved a professional level of musical performance. They are required to audition in their major performance area.

Information about specific admissions and curricular requirements for each area is available from the director's office.

Doctor of Musical Arts
Requirements for the D.M.A. degree in performance and pedagogy are the general doctoral requirements of the school, except that the D.M.A. dissertation consists of three full-length recitals or two recitals and a concert performance with orchestra or other appropriate ensemble. Vocational may require an ensemble of one or more major roles in a large-scale work for one of their recitals. Co-directors present two preliminary examinations.

D.M.A. candidates also must complete a scholarly investigation of limited scope in a written thesis.

Admission
Before students are considered for admission to a doctoral program, they must have demonstrating elementary proficiency in their intended area of concentration, as follows:
Composition—representative musical scores
Theory—analyses or research papers
Music education—research papers
Music literature—research papers and audition
Musicology (including conducting)—audition
Music theory and musicology—research papers, thesis
Graduate Awards
Qualified graduate students are invited to apply for teaching and research assistantships. Inquiries should be directed to the School of Music.

Music for Nonmajors
Courses particularly recommended for students who are not majoring in music but who have an avocational interest in it include: 25-13-14 Masterpieces of Music, 25-180 Late Eighteenth- and Nineteenth-Century Composers, 25-160 Nineteenth- and Twentieth-Century Composers; the sequence 25-130-134 World Music I & II for students interested in non-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 performance 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. Begun in 1966, it’s a grant from The Rockefeller Foundation, the center provides a forum for skilled resident musicians who form a junior ensemble for the purpose of performing twentieth-century music. As a vital component of the School of Music's composition program, the Center for New Music functions as both a research and performance laboratory for staff and students, and as a repertory ensemble for
35.37 Principles of Conservation and Maintenance of Historical Instrument 3 s.h.
35.38 Introduction to Musicology 3 s.h.
35.39 Introduction to Conductors Study 2 s.h.
35.40 Advanced Bibliography and Reference Materials 3 s.h.
35.41 Historical Musicology I 3 s.h.
35.42 Historical Musicology II 3 s.h.
35.43 Historical Musicology III 3 s.h.
35.44 Ear Training 2 s.h.
35.45 Conducting: Orchestral Literature 3 s.h.
35.46 Conducting: Vocal Literature 3 s.h.
35.47 Conducting: Jazz Literature 3 s.h.
35.48 Conducting: Media Literature 3 s.h.
35.49 Conducting: Ethnic Literature 3 s.h.
35.50 Conducting: World Literature 3 s.h.
35.51 Conducting: Musical Theatre 3 s.h.
35.52 Conducting: Musical Theatre 3 s.h.
35.53 Composition II 3 s.h.
35.54 Composition III 3 s.h.
35.55 Composition IV 3 s.h.
35.56 Musical Theatre 3 s.h.
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35.181 Musical Theatre 3 s.h.
35.182 Musical Theatre 3 s.h.
Major Field
Instruction in the student's minor field of performance or for nonmajors 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 instructor. All nonmajor courses are subject to availability only. No minor grades may be given.

Undergraduate Nonmajor
2517 Non-Major Voice 0.5 a.h.
2518 Non-Major Piano 0.5 a.h.
2519 Non-Major Strings 0.5 a.h.
2520 Non-Major Harpsichord 0.5 a.h.
2521 Non-Major Organ 0.5 a.h.
2522 Non-Major Trombone 0.5 a.h.
2523 Non-Major Percussion 0.5 a.h.
Graduate Nonmajor
2511 Non-Major Voice 1 a.h.
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 undergraduate degree. 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 classes, projects, 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 or
6E.164 The Political Economy of Socialism
One course on issues in microeconomics, chosen from:
6E.111 Labor Economics
6E.139 Environmental Economics
6E.171 Applied 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 or
6E.166 The Political Economy of Socialism
One course on issues in macroeconomics, chosen from:
6E.112 Money and Banking
6E.139 Economic Policy of the Government Sector
6E.123 Political Economy of the Military Industrial Complex
6E.125 International Economics
6E.128 Economic Development

Underserved Areas

6E.121 Agricultural and Food Policy
6E.125 Regional and Urban Economics
6E.141 Economics of American Industries
6E.173 Advanced International Economics
6E.174 Monetary Economics

Philosophy

26.124 Philosophy and Human Nature
26.102 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 Twentieth-Century Philosophy
26.22 American Philosophy
26.41 Continental Philosophy
One course on ethical issues, chosen from:
26.104 Introduction to Philosophy of Science
26.102 Political Philosophy
26.103 Philosophy of History
26.107 Epistemology
26.168 Philosophy of the Human Sciences

Political Science

30.30 Introduction to Political Thought and Political Action
One course on methods of political analysis, chosen from:
30.116 Law and Social Change
30.125 Introduction to Positive Political Theory
30.180 Seminars 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:
30.166 Ostrowski on Unproprietary Thought
30.120 Current Political Theory
30.139 Political Issues

Law

Liberals 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:
91.288 or 144.281 Jurisprudence
91.330 or 144.330 Issues in Law and Philosophy
91.352 or 144.200 Social Science in the Law
91.337 or 141.205 Legal Reasoning

Ethics

26.102 Introduction to Ethics
One course in the history of ethics, chosen from:
26.130 Political Philosophy
26.180 Analytic Ethics
76.182 History of Ethics
76.184 Morality, Princeton, and Ross
One course on issues in ethics, chosen from:
26.132 Political Philosophy
26.180 Analytic Ethics
32.159 Religious Ethics: Moral Character and Religious Faith
32.159 Political Theology and Social Ethics
32.160 Christian Ideas of Church
32.161 History of Religious Ethics
32.163 Introduction to Bioethics

Politics

30.30 Introduction to Political Thought and Political Action
One course on the history of political theory, chosen from:
166.165 Marx
30.113 Foundations of Political Theory
30.122 Modern Political Theory
30.122 Postmodern Political Theory
30.134 American Political Theory
One course on issues in political theory, chosen from:
30.166 Ostrowski on Unproprietary Thought
30.120 Current Political Theory
30.139 Political Issues

Students interested in enrolling in the PEOPLE program should contact the Office of Academic Programs, College of Liberal Arts.
One course on the history of legal theory, chosen from:
144.114 or 144.296 Foundations of Anglo-American Law
144.120 American Constitutional Law and Politics
144.309 or 144.110 Law in American History I
144.294 or 144.111 Law in American History II
144.601 or 144.296 Legal History Seminar
144.607 or 144.207 Modern Constitutional History
One course on issues in legal theory, chosen from:
30.118 Law and Social Change
30.117 The Politics of Civil Rights and Liberties
30.114 or 131.180 Women and the Law
30.120 or 144.290 Human Rights in the World Community: Problems of Law and Policy
30.307 or 144.209 Legal Control of Sexuality and Sexual Conduct
34.345 or 144.210 Hard Cases: Science Policy and Values
34.139 or 144.211 Native American Law
34.601 or 144.221 Law, Medicine, and Public Policy
36.050 or 144.299 Law and Lawyers in Literature
Integration
The following are required.
Theory of Inquiry
One course chosen from:
20.104 Introduction to Philosophy of Science
20.100 Philosophy of the Human Sciences
20.100 Honors Seminar on the Study of Politics
Senior Seminar
144.144 Seminar: Philosophies and Ethics of Politics, Law, and Economics
Courses
144.110 Seminar: Philosophies and Ethics of Public, Law, and Economics
2.0 h.
Principles and values that cross the boundaries between philosophy, political science, law, and economics. Open only to seniors in the PEOPLE program.
144.161 Independence
3.0 h.
Examine the themes of non-coercion, autonomy, and liberty in the work of philosophers. Emphasis on political philosophy.
144.162 Issues in Law and Philosophy
2.0 h.
Topics such as conflicts of law and objective in law and in morals, theories of language, legal reasoning, legal knowledge, legal responsibility, reasoning and legal reasoning. Same as 36.100.
144.163 Social Science to the Law
2.0 h.
The use of statistical and experimental methods is widespread in the social sciences. This course will examine the use of these techniques in the development of new theories of social science.
144.165 Legal Reasoning
2.0 h.
Recent theories, philosophical underpinnings, recent philosophical work on the theory of reason, knowledge, language, identity, and law. Same as 10.217.
144.295 Legal History Seminar
Same as 144.111.
144.207 Modern Constitutional History
2.0 h.
Civil rights and civil liberties issues in American law and constitutional history from World War I to the 1990s. Research papers. Same as 144.601 or consent of instructor. Same as 144.601
144.209 Legal Control of Sexuality and Sexual Conduct
2.0 h.
Theoretical and experimental methods and techniques in the study of sexuality and sexual conduct. Same as 144.210.
144.200 Legal Casebook: Science Policy and Values
2.0 h.
Well-known cases in the field of science policy. Same as 144.100.
144.205 Native American Law
3.0 h.
The specialized body of law that has grown up around Native American peoples and their relationships with local government, justice, property law, and family rights and traditions. Same as 144.211.
144.225 Law, Medicine, and Public Policy
2.0 h.
Public policy issues that have both medical/fundamental and legal aspects. Focus on the changing legal framework for organization and regulation of health care. Same as 20.100.

PHILOSOPHY
Chair: Richard Famersing
Professors: Landis Akuba, Pardell Bachehman, Philip Currency, Joannis Evangelou, Richard Famersing, John MacFarlane, Scott MacDonald
Associate professors: Evan Folsom, Scott MacDonald
Assistant professors: Gregory Landis, David Stump, Gaunter Taffler
Undergraduate degree offered: B.A. in Philosophy
Graduate degrees offered: M.A., Ph.D. in Philosophy

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—for any situation requiring clear, systematic thinking. A graduate degree is necessary for college teaching in philosophy. The B.A. degree requires at least 27 semester hours of credit in courses numbered from 20.102 through 26.196 and must include 26.101 Introduction to Symbolic Logic; 20.111 Ancient Philosophy, and either 26.114 Seventeenth-Century Philosophy or 26.116 Eighteenth-Century Philosophy. The first 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 student’s academic background and aptitude are taken into account in the evaluation of a student’s ability to meet the requirements and are subject to the approval of the instructor and the Department of Philosophy. 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 25 semester hours in philosophy courses with a 2.00 minimum grade-point average. Of these, a minimum of 12 semester hours must be in courses that are numbered above 100 and are taught in the Department of Philosophy at The University of Iowa. The director of undergraduate studies can provide more information.

Honors 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 taken and passed at least three philosophy courses for the major. In order to graduate with honors in philosophy, the student must complete the regular requirements for a major in philosophy with a grade-point average of at least 3.60 in philosophy courses and must write an acceptable honors thesis on a significant philosophical topic. The thesis must be approved by the student’s advisor. The director of undergraduate studies can provide more information.

Graduate Programs
The graduate program is designed to train teachers and scholars in philosophy. The main areas in the graduate curriculum are the history of philosophy, ethics, logic, and philosophy of science. The Ph.D. 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.

Certificate for the doctoral program in philosophy 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 is the writing of a comprehensive examination consisting of a minimum of thirty-six hours of instruction, 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 offices, 200 English/Philosophy Building. Shortly before early registration.

For Undergraduates Only

261 Philosophy of Mental Reasoning 3 sh.
Philosophical introduction to ethical thought, emphasizing on its implications for contemporary moral controversies.

263 Problems of Political Philosophy 3 sh.
Philosophical study of the political activity and the role of the individual in the state.

268 Philosophy and Human Nature 3 sh.
Philosophical and historical treatment of recent theories of human nature and its relation to society, knowledge, religion, science, and freedom. GE: Historical perspectives.

269 Philosophy and Human Nature 3 sh.
The nature of human nature and the obligations they must incur, functions examined in the framework of moral and political issues within which the world and men find themselves historically.

270 Principles of Philosophy 3 sh.
Introduction to study of logic and applications. GE: Quantitative or formal reasoning.

271 Introduction to Philosophy 3 sh.
Philosophical theory and methods: philosophical issues and arguments. Topics may include: classical belief modernism, the self, causation, and the perspectivalism of religions. GE: Foundation.

For Undergraduates and Graduates

Open to freshmen.

292 Introduction to Ethics 3 sh.
Analytical and historical introduction to ethical theories shaped through personal moral codes. GE: Humanities.

293 Introduction to Social and Legal Logic 3 sh.
Symbolic and basic techniques in modern symbolic logic.

294 Introduction to Philosophy of Science 3 sh.
New issues in contemporary philosophy of science.

295 Ancient Philosophy 3 sh.
Major works and major figures such as Plato and Aristotle.

296 Medieval Philosophy 3 sh.
Major works and major figures such as Augustus and Aquinas.

297 Seventeenth-Century Philosophy 3 sh.
Major works and major figures such as Bacon and Descartes to Leibniz and Locke.

298 Eighteenth-Century Philosophy 3 sh.
Major works, central arguments, and major positions from Berkeley to Kant.

299 Nineteenth-Century Philosophy 3 sh.
Major works and major figures from nineteenth-century analytic philosophy.

300 Twentieth-Century Philosophy 3 sh.
Major works and major figures from twentieth-century analytic philosophy.

301 American Philosophy 3 sh.
A survey of American philosophy, including works of Emerson, Thoreau, and James, three leading authors.

302 Aesthetics 3 sh.
Major positions in philosophy of the arts.

303 Political Philosophy 3 sh.
Major problems in political philosophy.

304 Philosophy of History 3 sh.
Major problems in philosophy of history.

305 Philosophy of Religion 3 sh.
Major issues in philosophy of religion. Same as 3612, 3610.

306 Philosophy of Literature 3 sh.
Philosophical development of theories and literary figures.

308 Philosophy of Science 3 sh.
Major issues in philosophy of science.

309 Philosophy of Mind 3 sh.
Major problems in philosophy of human consciousness.

310 Existentialist Philosophy 3 sh.
Study of existentialism, examining Kierkegaard, Nietzsche, Heidegger, and Sartre.

311 Philosophy East and West 3 sh.
Comparative analysis of ideas in Eastern and Western philosophy.

312 Indian Philosophy 3 sh.
Major issues and major texts.

313 Buddhist Philosophy 3 sh.
Introduction to the major ideas of Buddhist philosophy.

314 Theology 3 sh.
Preparation for further study. May be repeated for a maximum of 3 sh.

319 Undergraduate Seminar in Philosophy 3 sh.
Intensive small group discussion of selected philosophical problems. Consent of instructor required.

321 Topics in Analytic Philosophy 3 sh.
In-depth study of a major area of philosophy or philosophical problems. Consent of instructor required.

322 Topics in Philosophical Logic 3 sh.
Analytical and historical introduction to philosophical logic. Consent of instructor required.

323 Aristotle 3 sh.
Analysis of major ideas and major texts. Consent of instructor required.

325 Aquinas, Suarez, Tolnay 3 sh.
Philosophical positions, concepts, and arguments. Consent of instructor required.

329 Existentialism 3 sh.
Major works such as Eschaton on Method, as well as major works such as The World, Consent of instructor required.

330 Science and the Social Sciences 3 sh.
Analysis of major ideas and major texts. Consent of instructor required.

332 Locke 3 sh.
An in-depth study of Locke's metaphysical and ethical positions in both historical context. Consent of instructor required.

333 Berkeley 3 sh.
Philosophical and ethical positions. Consent of instructor required.

334 Hume 3 sh.
Major works in a variety of areas, including epistemology, metaphysics, ethics, and philosophy of religion. Consent of instructor required.

335 Kant 3 sh.
Analytic of major ideas and major texts of Kant's metaphysics and epistemology. Consent of instructor required.

336 Hegel 3 sh.
Analytic of major ideas and major texts of Hegel's metaphysics and epistemology. Consent of instructor required.

337 Breton, Heidegger, Husserl 3 sh.
Analysis of major ideas and major texts. Consent of instructor required. Consent of instructor required.

338 Peirce, Nietzsche, Husserl 3 sh.
Analysis of major ideas and major texts. Consent of instructor required. Consent of instructor required.

339 Analytic Ethnics 3 sh.
Selected topics in contemporary ethics. Consent of instructor required.

340 History of Ethics 3 sh.
Selected topics in the history of ethical ideas. Consent of instructor required.

341 Modern Philosophy 3 sh.
Selected topics in contemporary philosophy of mind. Consent of instructor required.

342 Philosophy of Mind 3 sh.
Selected topics in contemporary philosophy of mind. Consent of instructor required.

343 Philosophy of Language 3 sh.
Selected topics in contemporary philosophy of language. Consent of instructor required. Same as 3152, 3153.

349 Mathematical Logic 3 sh.
Philosophical and logical issues related to mathematical logic and logical theory, treatment of second-order logic. Consent of instructor required.

350 Model Logic 3 sh.
Philosophical and logical issues related to model theory and applications in linguistics and mathematics. Consent of instructor required.

351 Philosophy of Science 3 sh.
Selected topics in contemporary philosophy of science—topics such as logic, scientific methodology, and the meaning of scientific theories. Major philosophical problems in these areas. Consent of instructor required.

352 Philosophy of the Human Sciences 3 sh.
Philosophical and logical issues related to model theory and applications in linguistics and mathematics. Consent of instructor required.

353 Topics in Philosophy 3 sh.
Selected topics in philosophy. Consent of instructor required.

360 Seminar in Social and Legal Logic 3 sh.
Selected topics in social and legal philosophy. Consent of instructor required.

361 Seminar in Social and Legal Logic 3 sh.
Selected topics in social and legal philosophy. Consent of instructor required.

362 Seminar in Social and Legal Logic 3 sh.
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366 Seminar in Social and Legal Logic 3 sh.
Selected topics in social and legal philosophy. Consent of instructor required.

367 Seminar in Social and Legal Logic 3 sh.
Selected topics in social and legal philosophy. Consent of instructor required.
EXERCISE SCIENCE

Chair: Jerry A. Meyendorf

Professors: James G. Andrews, Gene M. Agey, Donald R. Candy, Carl V. Giordi, James G. Hay, Jerry A. Meyendorf

Associate professors: Leslie E. Alley

Assistant professors: Gary F. Hansen, David K. Leslie, Kenneth E. Maty

Assistant professors emeriti: Richard Holmanger, Donald D. Knels, Arthur J. Winder

Assistant professor: Thomas W. Balke, Emily J. Coll, Warren G. DeTill

Assistant in Instruction: Diane B. Banks, Gary E. Davis, Danette T. Fuster, Mark A. Johnson, Robert Loll, Paul T. Lupio, Glenn S. Patton, Victoria G. Siben, Theodore S. Wheeler

Clinical assistant professors: Ann M. Batiste, Joseph N. Haynie, James E. Price, Larry J. Levinson

Undergraduate degree offered: B.S. in Exercise Science, Physical Education

Graduate degrees offered: M.A., Ph.D. in Physical Education, Ph.D. in Physical Education (Exercise Science)

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/or 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 4-15-14 Chemistry and 37.3 Principles of Animal Biology. The social sciences General Education Requirement should be satisfied by taking 31:2 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 4-7 Chemistry 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: 201 and 102, or 103 and 110, 225H or M or 225, 31:1, and 37:3.

Exercise science majors must complete the following core courses plus 17 semester hours in their elected sub-specialty.

4-14 Principles of Chemistry II

79:11 Introduction to Statistical Methods

225:102 Introduction to Statistical Methods

225:110 Biostatistics

225:117 Introduction to Computing with FORTRAN

86:20 Computer Analysis

29:11 College Physics

29:12 College Physics

37:3 Principles of Animal Biology

72:140 Human Physiology

72:150 Introduction to Physiology

The following courses should be completed prior to the senior year.

225:150 Cross Anatomy for Exercise Science

225:152 Exercise Lab for Exercise Science

27:197 Biomechanics of Human Motion

27:191 Exercise Physiology

27:192 Exercise Physiology Laboratory

27:193 Motor Control I

37:101 Pharmacology

Course electives for the 17 semester hours in the sub-specialties in exercise science are listed below.

Anatomy Specialization

27:133 Advanced Anatomy

27:134 Advanced Anatomy and Embryology

27:135 Skeletal Muscle Biology

27:137 The Qualitative Analysis of Human Motion

27:196 Exercise Science Senior Seminar

28:112 Cell, Tissue, and Organ Biology

27:251 Laboratory in Advanced Anatomy

Preprofessional students should take the following in place of 27:251 Advanced Anatomy Laboratory.

35:10 Introductory Endocrinology

PHYSICAL EDUCATION SKILLS PROGRAM

Chair: Terry Hargrave

This program offers courses that satisfy a portion of the General Education Requirements of the College of Liberal Arts. These requirements are discussed in the Catalog. Also see "Interdepartmental Courses" in the same section of the Catalog. The faculty of this program is drawn from departments within the Division of Physical Education.

Courses

141:42 Physical Education Skills

This course is designed for personal and community fitness and offers a variety of sports and activities. The credit taken may be used for physical education or recreational activities. Credit for this course may be used for other courses that may be used for physical education.

16:15 Fitness and Wellness for Life

This course is designed to provide a general 6-week program in introducing fitness and wellness programs in the community.

16:21 Physical Education for the Physically Challenged

This course is designed to provide a general 6-week program in introducing fitness and wellness programs in the community.

DIVISION OF PHYSICAL EDUCATION

Chair: Alice M. Homer

Undergraduate degree offered: B.A., B.S.

Graduate degree offered: M.A., Ph.D.

The Division of Physical Education consists of three academic departments—exercise science, sport studies, and physical education and sports studies—and two programs within physical education skills and teacher preparation. Each department has a separate section in the Catalog that describes its program requirements and course offerings.
<table>
<thead>
<tr>
<th>Exercise Science</th>
<th>Liberal Arts</th>
<th>193</th>
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</thead>
</table>

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>37:112</td>
<td>Exercise Physiology</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>37:115</td>
<td>Biomechanics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>37:116</td>
<td>Introduction to Exercise Science</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>37:118</td>
<td>Exercise Science I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>37:119</td>
<td>Exercise Science II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>37:120</td>
<td>Exercise Science III</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>37:121</td>
<td>Exercise Science IV</td>
<td>3 s.h.</td>
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<td>37:124</td>
<td>Exercise Science VII</td>
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<td>37:125</td>
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<tr>
<td>37:127</td>
<td>Exercise Science X</td>
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<tr>
<td>37:128</td>
<td>Exercise Science XI</td>
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<tr>
<td>37:129</td>
<td>Exercise Science XII</td>
<td>3 s.h.</td>
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<tr>
<td>37:130</td>
<td>Exercise Science XIII</td>
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<tr>
<td>37:131</td>
<td>Exercise Science XIV</td>
<td>3 s.h.</td>
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<tr>
<td>37:132</td>
<td>Exercise Science XV</td>
<td>3 s.h.</td>
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<tr>
<td>37:133</td>
<td>Exercise Science XVI</td>
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<tr>
<td>37:134</td>
<td>Exercise Science XVII</td>
<td>3 s.h.</td>
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<td>37:135</td>
<td>Exercise Science XVIII</td>
<td>3 s.h.</td>
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<td>37:136</td>
<td>Exercise Science XIX</td>
<td>3 s.h.</td>
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<tr>
<td>37:137</td>
<td>Exercise Science XX</td>
<td>3 s.h.</td>
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<tr>
<td>37:138</td>
<td>Exercise Science XXI</td>
<td>3 s.h.</td>
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<tr>
<td>37:139</td>
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<td>37:140</td>
<td>Exercise Science XXIII</td>
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<td>37:141</td>
<td>Exercise Science XXIV</td>
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<td>37:142</td>
<td>Exercise Science XXV</td>
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<td>37:143</td>
<td>Exercise Science XXVI</td>
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<td>37:144</td>
<td>Exercise Science XXVII</td>
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<tr>
<td>37:145</td>
<td>Exercise Science XXVIII</td>
<td>3 s.h.</td>
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<tr>
<td>37:146</td>
<td>Exercise Science XXIX</td>
<td>3 s.h.</td>
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<tr>
<td>37:147</td>
<td>Exercise Science XXX</td>
<td>3 s.h.</td>
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</tbody>
</table>

**General Major**

Students who elect the general major in physical education must complete the core requirements listed above and the following courses:

<table>
<thead>
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<tbody>
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<tr>
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<td>3 s.h.</td>
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<td>37:114</td>
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<td>37:130</td>
<td>Exercise Physiology X</td>
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</tbody>
</table>

**Athletic Training Program**

The athletic training program provides concentrated studies and clinical experiences leading to National Athletic Training Association certification in athletic training. The program is designed for students who plan to enter the physical education field or who wish to supplement their major program with a unique minor in athletic training.

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</table>

**Minor in Exercise Science**

The minor in exercise science requires at least 15 semester hours and must be taken in addition to the major in physical education. The minor is offered to students who wish to supplement their major program with a minor in exercise science.

<table>
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</table>

**Graduate Programs**

**Master of Arts without Thesis**

The program leading to the M.A. degree without thesis is designed as a terminal level of advanced study for physical education teachers and athletic coaches. The program focuses on developing teaching and counseling skills in physical education and related areas.

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</tbody>
</table>
hours. At least 24 must be in physical education, including 27.301 Non-Thesis Seminar, and at least one course must be chosen from each of these three groups:

**Group 1**
- 27.105 Physical Education for the Handicapped 3 s.h.
- 27.107 Measurement and Evaluation in Physical Education 1 s.h.

**Group 2**
- 27.227 Public School Curriculum in Physical Education 2.5 s.h.
- 27.242 Supervision of Physical Education 3 s.h.

**Group 3**
- 27.140 Exercise Physiology for Practitioners 3 s.h.
- 27.150 Gross Anatomy for Exercise Science 3 s.h.
- 27.151 Gross Anatomy Lab for Exercise Science 2 s.h.
- 27.157 The Qualitative Analysis of Human Motion 3 s.h.
- 27.160 Motor Control 3 s.h.
- 27.202 Non-orthopedic Diet 3 s.h.
- 27.141 Exercise Physiology 3 s.h.
- 27.142 Exercise Physiology Laboratory 1 s.h.
- 27.153 Advanced Anatomy and Kinesiology 2 s.h.
- 27.197 Biomechanics of Human Motion 4 s.h.
- 27.260 Adapted Physical Education, Special Topics and Research 3.5 s.h.
- 27.227 Public School Curriculum in Physical Education 2.5 s.h.
- 27.242 Supervision of Physical Education 3 s.h.
- 27.267 Advanced Measurement and Evaluation in Physical Education 3 s.h.
- 3 courses related to basic research tools, from the following:
  - 7P.163 Introduction to Statistical Methods 3 s.h.
  - 63.161 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:
  - 27.404 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 therapeutic exercise, 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, 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 therapeutics.

The thesis program for the M.A. degree, together with the Ph.D. core courses, provides students with foundational preparation for the Ph.D. candidate's specialization. Candidates must complete a minimum of 75 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 expected that an appropriate manuscript of the dissertation will be submitted to 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 frequently serves 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 16 semester hours of independent research exclusive of the thesis requirement; the intent of the independent study to provide students with additional opportunities to conduct research projects; enable them to complete such completed projects for publication; at least 72 semester hours of graduate credits beyond the B.A. degree. Ph.D. degree in exercise science typically exceeds 96 semester hours.

**Core Course Requirements**
Two approved courses in statistics
One approved computer science course
27.212 Seminar in College Teaching (minimum of 3 s.h.)
27.345 Research Methods (10 s.h.)
27.405 Thesis: Ph.D. (12 s.h.)

In order to ensure that exercise science majors develop a minimal breadth of knowledge over the key scientific areas that constitute the basis of the major, the following scientific area course requirements must be satisfied:

Students specializing in anatomy, biomechanics, exercise physiology, and motor control must select one course from each of the four areas below. Three must be in each area.

- Students specializing in other areas must select one course in three 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 the sciences courses listed below, provided that the substitute course meets both a lecture and a laboratory format.

Anatomy
First-level: 27159 and 27165 (4.5 h)
Second-level: 27153 (4.5 h)

Biomechanics
First-level: 27162 (3 h)
Second-level: 27197 (4 h)

Motor Control
First-level: 27188 (3 h)
Second-level: 27225 (4 h)

Exercise Physiology
First-level: 27174 and 27142 (4 h)
Second-level: 27274 and 27303, or 27175 and 27304, or 27276 and 27305 (4.5 h)

Osteopathic 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 start of the graduate student (pro-ten) fellowship year. The annual examination should be taken following the completion of the fourth semester of graduate study (sixth year for 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
72130 Exceptional Physical Education Special Topic and Practicum 3.5 h
72154 Human Anatomy 4 h
27253 Laboratory in Advanced Anatomy 4 h

Administration, Curriculum, and Supervision
27242 Supervision of Physical Education 3 h
72103 Foundations of School Administration 3 h
27237 Advanced Administration of Physical Education 3 h
27337 Research Models and Theory in Physical Education Curriculum 3 h

Anatomy
27253 Laboratory in Advanced Anatomy 5 h
60217 Developmental Anatomy 5 h
60234 Medical Neurosurgery 4 h
27112 Cell, Tissue, and Organ Biology 5 h
27153 Advanced Anatomy and
79105 Anatomy III 2 h
99110 Biomechanics and Molecular Biology I 2 h
27156 Electromyography in Kinesiology and Biochemistry 2 h
99110 Biomechanics and Molecular Biology II 2 h
99110 Biochemistry 2 h
77109 Introduction to Radiodiagnostics and Radiobiology 2 h
77224 Radiobiology in Biomedical Research 4 h

Biomechanics
5110 Mechanics of Deformable Bodies 4 h
7710 Mechanics of Solids and Transfer Processes 4 h
7721 Principles of Design I 4 h
70101 Intermediate Dynamics 4 h
70101 Design and Analysis of Experiments in the Biomedical Sciences 4 h
27233 Laboratory in Advanced Anatomy 6 h
27156 Electromyography in Kinesiology and Biomechanics 3 h
27227 Research Techniques in Biomechanics 4 h
101202 Biomedical Instrumentation 3 h

Exercise Physiology
37112 Cell, Tissue, and Organ Biology 5 h
60226 General Physiology for Graduate Students 4 h
79110 Human Physiology I 2 h
77110 Endocrinology and Metabolism 2 h
71109 Pharmacology for Health Sciences 4 h
72112 Medical Physiology 2 h
72212 Exercise Physiology Seminar 7 h
99110 Biomechanics and Molecular Biology I 2 h
99110 Biomechanics and Molecular Biology II 2 h
72224 Medical Neurosurgery 2 h
77109 Introduction to Radiodiagnostics and Radiobiology 3 h
77224 Radiobiology in Biomedical Research 4 h

Measurement and Evaluation
79134 Intermediate Statistical Method and
79144 Correlation and Regression 5 h
79155 Introduction to Probability 5 h
79154 Introduction to Mathematical Statistics 4 h
79155 Design of Experiments 4 h
79155 Construction and Use of Evaluation Instruments 4 h
79155 Educational Requirement and Evaluation 4 h
77257 Seminar: Research in Measurement and Evaluation in Physical Education 3 h

Motor Control
27395 Electromyography in Kinesiology and Biomechanics 3 h
27314 Seminar in Motor Control 3 h
27380 Introduction to the Neurosciences 3 h
101202 Biomedical Instrumentation 3 h

Three courses must be selected from the following areas: computer science, neuroscience, biomechanics, anatomy, and exercise science.

Therapeutics
Candidates for this specialization must be accepted into the graduate program in physical therapy education as well as in exercise science/therapeutics are listed under required courses for the Master of Arts in physical therapy under "Division of Associated Medical Sciences" in the "College of Medicine" section of the Catalog. Students specializing in therapeutics must satisfy the scientific area course requirements listed for the exercise science major.

General Core
228100 Introduction to Computers with Fortran 2 h
6323 Research Data Management 3 h
27404 Data Processing 3 h
27405 Thermo. Ph.D. 12 h
101204 Advanced Seminar in Physical Therapy 3 h
31227 Teaching Practicum 4 h
Total 23 h.

Research
27303 Research 12 h
101204 Practicum in Research 12 h
101327 Research in Therapeutics 15 h

Specialty Endorsements
Individual plans of study are developed jointly by the graduate student and faculty advisor. Course requirements depend on the student's specific specialty area (cardiopulmonary, ergonomics, musculoskeletal, neurorehabilitation).

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 therapy students to use additional special facilities and research
Undergraduate Program

Applicants to the undergraduate program in leisure studies must have a minimum cumulative grade-point average of 2.00 based on at least 35 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 available from the department office. Deadline for full semester admission is March 1, for spring semester, October 1.

Requirements

Students must take 34 semester hours of core courses, including:

104-00 Leisure in Contemporary Society 3 s.h.
104-45 Recreation Leadership and Programming 4 s.h.
104-103 Leisure Research 3 s.h.
104-105 Introduction to Therapeutic Recreation 3 s.h.
106 Administration of Recreation I 3 s.h.
106-107 Internship Seminar I 1 s.h.
114-158 Internship in Recreation 7 s.h.
114-159 Internship in Recreation 6 s.h.
2736 or 2637 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 directors and administrators of recreations programs, facilities, and departments. It is oriented primarily to municipal, school, and congregate recreation and park departments.

Required courses are:

114-130 Park and Recreation Facility Management 3 s.h.
114-134 Introduction to Planning and Design of Recreational and Park Areas and Facilities 3 s.h.
Three courses selected with advisor

Therapeutic Recreation

Therapeutic recreation prepares students to organize, plan, and lead recreation programs in treatment and noninpatient settings for people who are ill, handicapped, aged, disabled, and disadvantaged.

Required courses are:

114-121 Orientation to Special Populations vs Therapeutic Recreation 4 s.h.
114-125 Role of Therapeutic Recreation in Rehabilitation 1 s.h.
Physical Education, Teacher Preparation Program ● Liberal Arts 199

19416 Health Promotion and Wellness for Older Adults 3 cr.
   - Focus on older adults, strategies, efforts directed toward establishing a healthy lifestyle, chronic prevention, and showing the benefits of fitness to slow individuals independent and aging issues.

19418-19 Computer Applications for Park and Recreation Management 3 cr.
   - Basic skills using MS-FoxPro and MS-Office software, especially those applications for park management: budgeting, administration, computerized databases and record keeping, resource management, recreation research, and evaluation.

19420 Special Studies in Recreation 1-6 cr.
   - For special study of a professional role in the field of recreation.

19421 Professional Internship 1 cr.
   - For supervised professional experience arranged to include direct leadership, program planning, and administration under the direction of a cooperating recreation professional. Credit by arrangement.

19422 Internship in Recreation 1 cr.
   - For supervised professional experience arranged to include direct leadership, program planning, and administration under the direction of a cooperating recreation professional. Credit by arrangement.

19423 Internship in Recreation 3 cr.
   - For supervised professional experience arranged to include direct leadership, program planning, and administration under the direction of a cooperating recreation professional. Credit by arrangement.

19424 Internship in Recreation 6 cr.
   - For supervised professional experience arranged to include direct leadership, program planning, and administration under the direction of a cooperating recreation professional. Credit by arrangement.

19425 Internship in Recreation 12 cr.
   - For supervised professional experience arranged to include direct leadership, program planning, and administration under the direction of a cooperating recreation professional. Credit by arrangement.

19426 Development of Social Skills 3 cr.
   - Interventions, evaluation, strategies of therapeutic recreation service for the handicapped person, practice in program development and evaluation, problem-solving, and techniques.

19427 Graduate Assistantship in Recreation 3 cr.
   - For graduate assistants, supervision of selected areas, selection of students, evaluation, and program development.

19428 Philosophy of Philosophy and Recreation 3 cr.
   - History and philosophy of the development of the field of recreation and leisure, current issues, and the role of recreation in society.

19429 Theory and Methods of Social Psychology of Leisure Behavior 3 cr.
   - A study of psychology of leisure behavior, including social psychology, social interaction, and leisure behavior.

19430 Recreation College Teaching 3 cr.
   - A study of methods and techniques used in teaching college-level recreation courses.

19431 Seminar: Ethnic 1
   - Special topics in ethnic studies.

19432 Seminar: Ethics 1
   - Special topics in ethical issues.

PHYSICAL EDUCATION, TEACHER PREPARATION PROGRAM

Coordinators: David K. Leslie, Jermaine L. Paul, and James C. M. Avery, Donald R. Cready, James D. Hyl, Richard E. Endicott

Associated professors: Susan J. Ewert, N. Peggy Berta, Gary F. Hamner, David R. Leslie, Karen T. Mobly, Jeanna L. Stoll

Graduate professors: Thomas W. Baldwin, Kelly J. Davis, Daniel Connelly, Warren G. Darling

Assistant professors: Donald A. Beavis, Dean R. Young, Kyle B. Brower, Kathleen A. Carbone, Gary Owns, Darrell J. Owns, Danyel V. Foster, Carol E. Gutsch, Jared M. Huenefeld, Kathleen J. S. Davis, Michael J. Lafferty, Paul T. Langlo, Beth M. S. Davis, Glenn S. Batson, Dana R. Styer, Diane W. Thompson, Theodore S. Wheeler

Undergraduate degrees offered: B.A., B.S. in Physical Education.

The teacher preparation programs include those that prepare students for teaching, physical education, to coach athletics, and to teach health in elementary and secondary schools.

Physical Education

B.A. or B.S. with Teacher Certification

The following academic, activity, and teacher certification courses are required.

Academic

- 128:19 Introduction to Physical Education 1 cr.
- 128:21 Theory and Principles of Fitness 1 cr.
- 138:25 Laboratory in Teaching of Physical Activities 1 cr.
- 138:27 Teaching of Dance 2 cr.
- 138:28 First Aid and CPR 1 cr.
- 138:53 Human Anatomy 3 cr.
- 138:71 Human Growth and Motor Development 2 cr.
- 138:74 Psychology of Physical Education 3 cr.
- 138:103 Administration of Physical Education 2 cr.
- 138:105 Physical Education for the Handicapped 2 cr.
- 138:106 Motor Learning and Motor Control 2 cr.
- 138:142 Contemporary Issues of Health Education 3 cr.
- 138:154 History of Sport in the United States 2 cr.
- 28:2 Science or Kinesiology 2 cr.
- 27:10 Biomechanics of Physical Education 3 cr.
- 28:106 Physiology of Exercise 3 cr.
- 27:168 Exercise Physiology for Physical Education 3 cr.

Activity

Students must demonstrate competence in each of the following courses and may earn a maximum of 19 semester hours in the following activities. Students may take exceptions tests for the courses marked by symbols and may test out a maximum of 7 semester hours.

- 138:16 Theory of Coaching 1 cr.
- 138:45 Field Sports (Tag football, indoor sports) 1 cr.
- 138:55 Softball 1 cr.
- 138:55 Basketball 1 cr.
- 138:55 Track and Field 1 cr.
- 138:56 Swimming 1 cr.
- 138:57 Tennis and Apparatus 1 cr.
- 138:68 Weight Training 1 cr.
- 138:65 Combat Sports, New Games and Texas Handball 1 cr.
- 138:70 Recreational Skills 1 cr.

(archery, badminton, bowling, racquetball, table tennis)

Teacher Certification

315:19 Human Growth and Motor Development 2 cr.
- 315:20 Intramural Strategies and Designs in Physical Education 3 cr.
- 315:52 Methods and Materials in Elementary Physical Education: Practicum Elementary School 3 cr.
- 27:15 Educational Psychology and Measurement 3 cr.
- 315:92 Introduction to Microcomputing for Teachers 1 cr.
- 318:19 Human Relations for the Classroom Teacher 3 cr.
- 318:20 Issues in Education 2 cr.
- 318:46 Methods of Secondary School Teaching 3 cr.
- 318:47 Seminar: Curriculum and Instruction 3 cr.
- 319:01 Observation and Laboratory Practice in the Secondary School 6 cr.
- 319:12 Special Area Student Teaching 6 cr.

Coaching Endorsement

The Iowa Department of Education requires that all students taking Physical Education, Teacher Preparation Program courses who are seeking a coaching endorsement complete the following program. This 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:
- 138:33 Coaching of Football 2 cr.
- 138:34 Coaching of Baseball 2 cr.
- 138:35 Coaching of Track and Field Athletics 2 cr.
- 138:36 Coaching of Basketball 2 cr.
- 138:38 Coaching of Competitive Sport 2 cr.
- 138:39 Coaching of Wrestling 2 cr.

All of these are required:
- 138:41 Theory of Coaching 2 cr.
- 138:45 Human Growth and Motor Development 2 cr.
- 138:105 Administration of Physical Education and Athletics 3 cr.
- 27:57 Basic Athletic Training 3 cr.
**Health Endorsement**

The full-endorsement 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.
17:53 Human Anatomy 3 s.h.
17:91 Human Growth and Motor Development 2 s.h.
18:142 Contemporary Issues of Health Education 3 s.h.
18:37 First Aid and CPR 2 s.h.
or Red Cross or comparable certification in first aid and CPR
70:198 Coaching Practicum 1.5 s.h.

**Courses**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
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<td>12:31 Theory of Coaching</td>
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<tr>
<td>12:30 Introduction to Physical Education</td>
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<td>18:130 Behavioral and Related Education</td>
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<td>18:44 Introductory Nutrition for American Red Cross Adult and Emergency Care Certificate</td>
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<td>18:48 NLP Certification</td>
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<td>18:53 First Aid, Survival, and Water Safety</td>
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<td>18:54 Fire Safety</td>
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<td>18:55 Early Childhood Physical Development</td>
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**Physiological Education and Sports Studies**

Chiree Brown, Chair
Professor: Susan Lottman
Program Coordinator: Margaret G. Cox, M. Glen Scott
Associate professors: Susan Ritter, N. Peggy bike, Christine E. Grant, Bonnie Heisler, I. Stroud, Bev Stroemel
Assistant professor: Denise Closson
Visiting Assistant Professor: Patricia Ramirez
Assistant in Residence: Seth Beuth, Kyle Bihn, Elizabeth Carter, David Darby, Sarah Davis, Carol Dieringer, Arlene B. Haseki, Kathy, Jerry, Peter Ketty, Robert Nolins, Mech Schilling, Shiree Smith, Sherrill Stiver, Diane M. Thomason
Undergraduate adviser: A.B. in Physical Education
Graduate adviser: A.B. in Physical Education

The Department of Physical Education and Sports Studies offers bachelor's degree programs with a major in physical education and specialization in fitness and sport management. It also offers graduate programs leading to the Master of Arts and Doctor of Philosophy degrees in physical education.

**Undergraduate Programs**

Each undergraduate student in physical education elects a wide variety of courses and activities in preparation for careers in the corporate fitness programs, wellness centers, private health clubs, YM-YWCA's, and sport programs. Students acquire professional background through anatomy, kinesiology, physiology, and health courses, with implications for the promotion and teaching of fitness and sport skills.

The undergraduate programs are also designed to prepare students for graduate work in physical education. (See "Graduate Programs" for areas of specialization.)

The professional major in physical education may lead to either the Bachelor of Arts or Bachelor of Science degree.
Physical Education Program (Nonmajoring)

Core Requirements

28:19 Introduction to Physical Education 1 s.h.
28:37 First Aid and CPR 3 s.h.
28:69 Theory and Principles of Weight Training 3 s.h.
28:81 Kinesiology 3 s.h.
28:83 Psychosocial Dimensions of Physical Activity 3 s.h.
28:16 History of Sport in the United States 3 s.h.
28:97 Physiotherapy (optional) 6-12 s.h.
28:90 Exercise of Exercise for Wellness/Protection 3 s.h.
28:114 Methods and Materials for Sport/Wellness Protection 3 s.h.
28:113 Stress Management 2 s.h.
28:12 Administration of Sport/Wellness Programs 3 s.h.

Activity Requirements

All students specializing in fitness/wellness or sport management complete one major sport, one minor activity, one recreational 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
28:03 Rhythmics-Design for Exercise Programs 2 s.h.
28:161 Contemporary Issues of Health Education 3 s.h.
28:94 Principles of Exercise for Wellness/Protection 4 s.h.
28:11 Survey of Computing 3 s.h.
17:41 Introductory Nutrition 3 s.h.

Sport Management
18:14 Theory of Coaching 2 s.h.
28:165 Minutes in Sport 3 s.h.
28:65 Sport and the Media 2 s.h.
28:11 Survey of Computing 3 s.h.
28:14 Communication and Public Relations 3 s.h.
28:30 History, Business and Professional Ethics 3 s.h.
28:15 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 with 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 options:

28:10 Anatomy 3 s.h.
28:91 Psychosocial dimensions of Physical Activity 3 s.h.
28:106 Physiology of Exercise 3 s.h.
28:126 Administration of Sport/Wellness Programs 3 s.h.
28:106 History of Sport in the United States 2-3 s.h.

28:14 Contemporary Issues of Health Education 3 s.h.
28:107 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 28:103 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 3.30 grade-point average at the beginning of the junior or senior year, when honors courses are taken. To qualify for honors degree, students must maintain at least a 3.50 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 awarded more than 400 master's degrees and more than 150 doctoral degrees during the past 50 years. Its graduates have provided 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 enter.

The curriculum assumes previous education in the respective fields. A program is prepared individually with consideration given to the student's previous education and anticipated career. Completion of the graduate degree usually leads to teaching, research, coaching, or administration in a school or university.

The outstanding characteristics of the graduate programs is the Department of Physical Education and Sports Studies, but the masters of the Division of Physical Education and the entire University are available as needed. Work outside the department provides a broad view and a breadth of education for the specialized master's and doctoral candidates.

Internships are available in many areas and are strongly encouraged for students specializing in administration and coaching.

The graduate student group is comlanitarian 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 35 semester hours of course work without thesis. The curriculum leads to teaching, administration, coaching, certification, or preparation for advanced degree work.

Core Requirements

Students must demonstrate competence in physiology of exercise and kinesiology. Competence can be demonstrated by completion of a course at the undergraduate or graduate level or satisfactory performance on a written examination.

The following courses are required:
28:261 Teaching of Research 3 s.h.
28:392 Seminar: Perspectives in Human Movement 2 s.h.
28:03 Thesis (for students on thesis option) 3 s.h.

A statistics course 3 s.h.

The sport studies core consists of four areas: philosophy of sport, sport psychology of sport, sociology of sport, and history of sport. Students are required to take one course from at least three of those 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:
28:244 Psychology of Sport 2 s.h.
28:261 Social Psychology and Sport 3 s.h.
28:248 Sociology of Sport 2 s.h.
28:157 Sociology of Women in Sport 2 s.h.
28:156 Minorities in Sport 2 s.h.
28:164 History of Sport in the United States 2 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 recreation of athletics or physical education, administration of fitness/wellness programs, coaching, education, psychology 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 2-3 core courses in their area of specialization as indicated below and electives selected in consultation with the adviser.

Administration of Physical Education and Sports Studies
28:108 Principles of Administration 3 s.h.
28:306 Advanced Athletic Administration 3 s.h.
28:319 Administration in Physical Education 3 s.h.

Physical Education and Sports Studies  201
Liberal Arts
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 foreign language, or by passing a Ph.D. language examination administered by the department.

The computer tool requirement option may be satisfied by taking 3 semester hours as approved by the departmental graduate committee.

Coaching

All students must have or earn a coaching endorsement.

28.102 Physiological Psychology

Women in Sport

28.105 Advanced Coaching

Sociology of Sport

28.106 Sociology of Women in Sport

28.108 Sociology of Sport and the Media

28.348 A Cultural Analysis of Sport

Sport Psychology

28.113 Stress Management

28.330 Seminar in Sport Psychology

28.331 Selected Issues in Social Psychology

28.332 Sport Psychology Electives

Sport Studies

28.106 Women in Sport

28.108 Sport and the Media

28.348 A Cultural Analysis of Sport

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.

Requirements

Competence in the areas noted under the MA program also is required for doctoral programs. 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 Department of Physics and Astronomy provides comprehensive and vigorous instruction in all basic aspects of its subjects. It also provides research facilities and guidance for individual scholarly work at an advanced level in selected specialties. Total enrollment is typically 3,000; each semester of the academic year and 200 during the summer. All courses and advanced laboratories are taught by full-time faculty members. Faculty members also teach evening courses and supervise associated laboratories taught by graduate students. Beyond the elementary 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 300 undergraduate majors—25 of whom are physics students—and 90 graduate students in physics or astronomy.

About 50 percent of graduates with bachelor's degrees pursue advanced study. Others find positions in secondary school teaching and in government and industrial laboratories. Some use their training as the basis for careers in other fields. Graduates with M.S. or Ph.D. degrees in physics or astronomy have 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 minor in a number of 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:25-24 Calculus I-II | 8 s.h. |
| or | 22M:45-46 accelerated Calculus I-II | 8 s.h. |
| or | 22M:27 Introduction to Linear Algebra | 4 s.h. |
| or | 22M:38 Calculus III | 4 s.h. |

| Group 2 | 22M:35-36 Engineering Calculus I-II | 8 s.h. |

#### Other Required Courses
Students must also take the following:

22M:10 Matrix Algebra for Engineers 2 s.h.
22M:41 Differential Equations for Engineers 3 s.h.
22M:62 Vector Calculus for Engineers 3 s.h.

### Bachelor of Arts in Physics
The B.A. program is designed for students who wish to gain considerable knowledge of physics but do not plan a research-oriented career in physics. This degree program is appropriate for those planning careers in medicine, law, business-related administration, business, technical writing, or secondary-school science teaching (see "Science Education" in this section of the Catalog and in the College of Education section). The B.A. program requires fewer courses in physics and mathematics than the B.S. program, and thus provides for a wider choice of electives. The following courses or their equivalents are required for the Bachelor of Arts degree with a major in physics.

22M:25-26 Calculus I-II 8 s.h.
22M:35-36 Engineering Calculus I-II 8 s.h.
22M:17-18 Introductory Physics I-II 4 s.h.

### 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 astro particle physics.

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 | 8 s.h. |
| or | 22M:45-46 accelerated Calculus I-II | 8 s.h. |
| or | 22B:27 Introduction to Linear Algebra | 4 s.h. |
| or | 22M:38 Calculus III | 4 s.h. |

| Group 2 | 22M:35-36 Engineering Calculus I-II | 8 s.h. |
| or | 22M:41 Differential Equations for Engineers | 3 s.h. |
| or | 22M:62 Vector Calculus for Engineers | 3 s.h. |

### Other Required Courses
Students must also take the following:

22M:19-20 Introductory Physics I-II 8 s.h.
22M:35-36 Engineering Calculus I-II 8 s.h.
22M:17-18 Introductory Physics I-II 8 s.h.
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: 2511-211 Introduction to Astrophysics I-II and/or 2511-217 Laboratory Astronomy. An additional 6 semester hours of these courses or of 100-level physics courses These 12 semester hours must be taken at the University of Iowa.

Bachelor of Arts in Astronomy

The B.A. degree program is designed for students who wish to gain considerable knowledge of astronomy but who do not plan a research-oriented career in astronomy. This degree program is appropriate for those planning careers in secondary-school science teaching, technical writing, and science-related administration (see Science Education) in the section of the Catalog and in the College of Education section. The B.A. program requires fewer courses in physics and mathematics than the B.S. program, and thus provides for a wider choice of electives.

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 wish to pursue a career in astronomy must take graduate courses in physics with a specialization in astronomy or astrophysics. For M.S. degree one must be at least 15 hours beyond the undergraduate degree in physics and astronomy. For Ph.D. degree one must be at least 30 hours beyond the undergraduate degree in physics and astronomy. Students who graduate with a thesis must have supervised theses, and students who graduate with a critical essay must have prepared and defended a critical essay. The Ph.D. degree program is designed to prepare students for careers in research or teaching in institutions of higher education and in industry. Students who graduate with a thesis must have supervised theses, and students who graduate with a critical essay must have prepared and defended a critical essay.
Course requirements or their equivalents for undergraduates or graduates are:

29.115 Intermediate Mechanics 3 s.h.
29.195 Introductory Quantum Mechanics 3 s.h.
29.117 Optics 3 s.h.
29.122 Introductory Astrophysics 5 s.h.
29.129-131 Introduction to Astrophysics I-III 9 s.h.
29.129-130 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 intend to pursue a Ph.D. in physics with an astrophysics specialization should take the following courses as early in the master's program as possible.

29.195 Plasma Physics 3 s.h.
29.303-307 Theoretical Astrophysics I-IV 6 s.h.
29.254 Stellar Structure and Evolution 3 s.h.
29.258 Special Topics in Astrophysics 2 s.h.
29.280 Seminar: Astrophysics arr.

Doctor of Philosophy in Physics

The program is designed for the Ph.D. degree with a minimum of 30 semester hours of course work in both the classical and quantum-mechanical physics for all candidates, in their specialized research field. All candidates must take comprehensive examinations. The examinations will be given in advanced seminars and are original research in experimental physics, theoretical physics, or astrophysics, and will prepare and defend a written dissertation based on this work. They must also take at least 27 semester hours of 200-level courses in the department, exclusive of 29.251, 29.258, 29.292, and seminars. The following minimum program is recommended for preparation for the comprehensive examinations:

29.191 Atomic Physics 3 s.h.
29.192 Introductory Nuclear Physics 3 s.h.
29.201 Introductory Solid State Physics 3 s.h.
29.204 Plasma Physics 3 s.h.
29.205 Classical Mechanics I 3 s.h.
29.211-213 Classical Mechanics II 3 s.h.
29.213-214 Classical Electrodynamics 6 s.h.
29.215-246 Quantum Mechanics I-IV 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 Modern Physics. The selection of an advanced course and the preparation for graduate work; the students' choice of more advanced and specialized courses will depend on the direction in which their interests develop. No more than 3 s.h. of the minimum 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 final publication and have submitted it for publication, with the approval of the research advisor, in a widely distributed, refereed scientific journal.

Financial Aid

Students qualified for graduate study are encouraged to apply for fellowships and scholarships. Inquiries should be directed to the departmental chair.

Research and Facilities

The Department has an excellent library and a number of well-equipped laboratories and observatories. Several VAX 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, supercomputers are accessed via telephone. The computer-vision shop is equipped with skilled instrument makers and machinists, and there are several electronics and machine shops for the use of advanced students and the research staff.

Experimental research is conducted in astrophysics (optical and radio), atomic and molecular physics, elementary particle physics, laser physics, nuclear physics, plasma physics, solid state physics, and space physics. Extensive facilities for the construction of equipment for satellites and spacecraft are available. Computation and analysis of data is a versatile software, for the advancement of mathematics and physics.

Courses

Prequisites and corequisites are specified as a guide only. The instructor may waive them. Courses may not be repeated for credit at grade points if they already have completed a higher level course for which the prerequisites or corequisites are equivalent. In a prerequisite course 29.201, 29.258, 29.111-12, 29.17-18, 29.251, and 29.214-215 are accepted toward the College of Liberal Arts General Requirement in the natural sciences.

Physics—Primarily for Undergraduates

29.000 Cooperative Education 6 s.h.
29.054 Chemistry and Physics of the Environment 3 s.h.
29.109-110 Introduction to Chemistry and Physics of the Structure of our Planet, earth, water, and ions (2 s.h. each). These introductions to introductory courses are designed for the student who wants to pursue a career in another field but needs a basic foundation in chemistry and physics. These courses do not count toward any degree, but do provide a solid background in these fields.

29.220 Advanced Physics 3-4 s.h.

Quantitative reasoning, electricity, light, radio, heat, waves, sound, and atomic, nuclear, and subatomic structures.

Experimental research in elementary particle physics is carried out at Fermi National Accelerator Laboratory, Los Alamos National Laboratory, European Laboratory for Accelerator Research, CERN in Switzerland, DESY in Germany, and other international laboratories. The present generation of high-energy experiments has been designed to probe both the atomic 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 photocell, is used for stellar, planetary, and comet studies. Research programs in galactic and extragalactic radioastronomy are carried out using an 18.3-meter parabolic reflector located at the National Radio Astronomy Observatory near Green Bank, West Virginia. The National Radio Astronomy Observatory, the Kitt Peak National Observatory, the Arecibo Observatory, the Infrared Astronomical Explorer, and the Very Long Baseline Interferometry Network are active.

Active theoretical research is carried on in astrophysics, atomic, molecular, and optical physics, atomic and molecular physics, elementary particle physics, laser physics, nuclear physics, plasma physics, solid state physics, and space physics. Much of the numerical work for this research is performed on supercomputers located at the United States Army Research Laboratory and the Army Research Office. The physics faculty also hosts the exchange of ideas between mathematics and physics.

Courses

Prequisites and corequisites are specified as a guide only. The instructor may waive them. Courses may not be repeated for credit at grade points if they already have completed a higher level course for which the prerequisites or corequisites are equivalent. In a prerequisite course 29.201, 29.258, 29.111-12, 29.17-18, 29.251, and 29.214-215 are accepted toward the College of Liberal Arts General Requirement in the natural sciences.
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 political affairs is a nonthesis program designed for students planning careers in government service, public affairs, or in junior 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 11 are earned in electives chosen individually to fulfill special interests. Students are encouraged to use all 32 elective hours in developing applied knowledge and skills in a particular subfield.

The degree does not require a final thesis. In the fall semester of course work, students take a written examination that tests both core and specialized knowledge. Students must pass the examination as well as complete all course work with at least a 3.30 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 M.A. program and the advising agency.

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 institutions. It produces graduates who are deeply committed to the study of politics, familiar with fundamental knowledge of political processes, well-prepared in the methods and techniques for useful investigation of basic and applied research questions, and determined to make contributions to the discipline of political science and to society.

About ten Ph.D. students are admitted each year. In addition to the fall semester work, students often collaborate with faculty members in research and publication. Graduates know one another and enjoy supportive and congenial working conditions.

Curriculum

Doctoral study usually lasts four years. In the first year, the curriculum for first-year students consists of core courses equally divided between substance and methodology. Emphasis is on basic research methods—including quantitative methods—that today's political scientist must thoroughly understand. Special attention is given to research design, collection of observations, analysis, and interpretation of data, research, and computer science software. Most first-year students complete this training with service as research assistants 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 read 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 among others, require a fifth year to complete the dissertation.

Five fields of study are available: American politics, comparative politics, international relations, political theory, and for those who wish to go beyond the basic methodology-training, research methods. Each student chooses three fields of study for the comprehensive examinations.

A comprehensive statement of departmental requirements is set forth in the Graduate Study in Political Science. For general graduate admission and degree requirements, see the "Graduate College" section of the Catalog.

Courses

3300 Cooperative Education Training (F) 3 s.h.
3310 Introduction to American Politics (F) 3 s.h.
3325 Introduction to Political Thought and Methodology (W) 3 s.h.
3330 Introduction to the Politics of the Industrial Environment (F) 3 s.h.
3335 Introduction to the Politics of Consumer Behavior (F) 3 s.h.
3340 Undergraduate Research in Politics (W) 3 s.h.
3350 Seminar in Political Behavior (F) 3 s.h.
3360 Seminar in International Relations (F) 3 s.h.
Bachelor of Science

Students must satisfy the College of Liberal Arts requirements for the B.S. degree and must complete a least 38 semester hours of credit. A minimum of 38 semester hours must be completed at least 15 semester hours of the major at The University of Iowa. The B.S. degree requires the following courses, or equivalents: 31:3 General Psychology or 31:5 Elementary Psychology; 31:41 Introduction to Statistics in Psychology or 31:140 Introduction to Statistical Methods (same as TP:140); 225-226; 31:21 Experimental Psychology I; 31:215 Experimental Psychology I, one-elective course from one of the five areas; groupings given below, with at least one course from these five area electives in 100-level courses.

Candidates for the B.S. degree in psychology are expected to satisfy the General Education Requirements in natural sciences in one of the following ways: one semester each of chemistry and biology; two semesters of chemistry; two semesters of physics, or one semester of chemistry and physics. B.S. majors also must complete at least one semester of calculus; in most cases this entails at least one computer science mathematics course. Students should consult with their advisors concerning specific courses that will satisfy these requirements.

Minor

A minor in psychology is an attractive option to students from a variety of disciplines. A minimum of 15 semester hours of credit with a minimum grade-point average of 2.00. At least 2 of these 15 semester hours must be upper-level courses in the department. This includes all 150-level courses and 31:45. Departmental advisers can help students identify appropriate courses for a minor that appropriately complement the student's major.

Area Electives

Area offerings may vary somewhat from semester to semester. Prior to each registration period, students should check the latest version of the brochure, Undergraduate Psychology at Iowa, and the currentEsection on psychology.

An approved statistics course is prerequisite to all 200-level courses. For psychology majors, the statistics course must be 31:140 Introduction to Statistics in Psychology or 31:140 Introduction to Statistical Methods (same as TP:140). Other statistics options are available to non-psychology majors.

Animal Learning and Biopsychology

31:17 Introduction to Comparative Psychology

31:45 Psychology of Learning

31:45 Experimental Physiology

31:45 Psychology of Learning
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. Students entering without previous graduate work must pass a four-year program, those entering with previous graduate training may take two to four additional years in this department, depending on the nature of the earlier preparation.

The Ph.D. program has a strong emphasis on preparation for research, teaching, and scholarly activity, 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, developmental psychology, and social psychology. Each entering student is encouraged 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 specialty area.

The department has three areas of research emphasis that cut across the training areas and combine methodological expertise of faculty and students with special resources within and outside the department: cognitive psychology, developmental psychology, and health psychology. Students who have particular interests in two areas in any of these areas may apply to one of these training areas and indicate a focus in a designated research area.

In summary, students are not required to continue their research interest in one of these three areas. Many faculty members have joint faculty 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 in more than one 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 junior program involving mixing course work in two areas, and research supervision or co-supervision by faculty members from both areas, is available. The department also is prepared to help students develop additional expertise in any of the following interest areas: human factors, aging, organizational and consumer behavior, communications, and cognitive science. Preparation in one of these interest areas requires some special advanced training within the department, directed coaching 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 33 semester hours in the department. All students must satisfy, through use of several options, requirements in statistics and research methods, and in learning. A course in 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 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, students are expected to take the following courses: for example, a general core course in a course in the primary training area, and a suitable elective. Students also become familiar with the literature, research strategies, and methods in one or more research areas through engagement in independently supervised research projects. This research participation—which may be on a local or national level all year long—gives the student a full, rich experience of research. In the third year, the research director assigns the student a topic for the master's 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. Advancement to Ph.D. candidacy is based on a faculty-wide review of the student's m-Ork record of performance on the M.A. project, in course work, and in locating, researching, analyzing, and serving. 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 contains material in the specialty and in related areas and is ordinarily given at the beginning of the fourth year.

The fourth year is devoted primarily to advanced seminars and to conducting the Ph.D. study and preparing the dissertation.
In the Ph.D. final examination, students present an oral defense of their dissertation and are expected to relate the dissertation work to broader issues in the discipline of psychology.

Master of Arts with Thesis

As indicated above, the department does not offer a specific M.A. program. The M.A. 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 course work must include the statistics sequence, a learning course, and at least one course outside the primary specialty area. Students should complete an acceptable scholarly thesis to 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 36 semester hours of graduate credit in psychology. 24 of which must be taken at The University of Iowa. The course work must include the statistics sequence, a learning course, and at least one new 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 accredited by the American Psychological Association, strongly emphasizes a scientific approach to the study of psychopathology. It is designed for students who are interested in becoming clinical psychologists, for students who are planning scholarly understanding of clinical phenomena and acquiring research skills necessary to the systematic investigation of such phenomena. Recognizing that students must become familiar with clinical material and competent in the application of clinical skills, the department closely integrates practical experience in the Carl R. Seashore Psychology Clinic with course work and supervised research experience.

Students in the clinical program may develop special competence in areas such as psychopathology, personality, affective disorders, behavioral and cognitive therapies, child psychology, industrial/organizational psychology, and surgery, and from other clinics, such as the Center for Health Services Research, the School of Social Work and its Gerontology Program, and nearby area education agencies. Particular emphasis is placed on the 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 one or other training areas have been established and are available to students with strong interests in two specialty areas.

Advanced students have opportunities to gain additional practicum 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 comes after completion of all course work and of test, 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; psychological scaling, and signal detection theory; cognitive effects of drugs, human judgment and decision making; information processing, visual perception, and psychophysics.

Faculty members in the human experimental program are prepared to help students gain additional expertise in a variety of interest areas, including human factors, communications, aging, and organizational and consumer 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, speech psychology, and audiology, and aesthetic.

Neuroscience and Behavior

The focus of the program in neuroscience and behavior is on the analysis of learning and motivation, primarily in nonhuman subjects, through the application of behavioral and biological principles. Special faculty strengths are in classical and operant conditioning, comparative psychology, motivation, neuroendocrine, neuropharmacology, and neuroanatomy. Students in this program have the opportunity to learn state-of-the-art techniques in computer-controlled experimental design and electronic instrumentation, and modern analytic and laboratory methods in neurophysiology, neurology, and biochemical assay.

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 perspectives on social processes. 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, attraction, social influences on behavior, close relationships, the social psychology of groups, and the study of social psychological aspects of clinical problems and processes.

Students in the social psychology program also may acquire additional preparation for research and teaching in interest areas such as organizational and consumer behavior, communications, human factors, and behavioral medicine. Such preparation, which ordinarily will involve selected course work outside the department (e.g., in the College of Business Administration or the Department of Communication Studies) and participation in special research projects, will broaden students' employment prospects.

Admission

Since the graduate program in psychology is designed primarily for students seeking the Ph.D. degree, all applicants are considered on this basis. Occasionally, a student (interested in advanced work only through the M.A. level) may be admitted to a joint graduate program, involving psychology and another discipline or profession. A person interested in such a program should contact the department prior to filing an application.

The deadline for applications is February 1. For all applicants, 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. Admissions decisions are based on a composite consideration of prior academic performance, letters of recommendation 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 introductory psychology, courses in statistics, and additional work in the natural
The University's Weeg Computing Center currently operates an IBM 4341, five P2500, and a Xerox 6110. Students and faculty have ready access to these systems through terminals in the Student Union. Microcomputers of many kinds are widely available. Office space for graduate students and faculty is provided in the Student Union. The psychology branch of the University's main library, with major collections in all areas, is conveniently located in the west wing of the Student Union.

The research and teaching activities of the department are supported by the facilities and endowments of the University and local agencies, including The University of Iowa Hospital and Clinics, the Psychiatric Hospital, the Veterans Administration Medical Center, the University Counseling Service, the Child Development Unit, the Wende Johnson Speech and Hearing Clinic, the Center for Health Services Research, and the School of Social Work.

Courses

Primary for Undergraduates

31:1 or 31:3 or equivalent is prerequisite to all other psychology courses. Only one of these may be taken for credit.

31:4, 31:1-3, 31:14, 31:15, 31:16, 31:17, and 19 are open for non-majors who have satisfactorily completed an introductory psychology course (31:1 or equivalent).

31:6 Elementary Psychology 3-4 cr.

A survey of psychology and the science. Scientific methods and the mechanics of scientific thinking. The human organism and its environment. Students are introduced to the basic facts and methods of psychology, and the nature of personal and social issues in the research of the behavior. Open to honors and honors level. Open to students with consent of instructor.

31:10 Introduction to Clinical Psychology 3 cr.

Survey of current and classical theoretical developments in clinical psychology. Information on current methods in assessment and treatment of psychological disorders. (31:0 social science prerequisites.)

31:14 Introduction to Social Psychology 3 cr.

Survey of current research and theory in social psychology. Tigerly, and self-concept. Personality development, attitude, and social learning. Development, social control, and control variables, social influence, and social roles. Social psychology. (31:0 social science prerequisites.)

31:15 Introduction to Social Psychology 3 cr.

Research relating behavior of individual humans to behavior among social units, interpersonal and social processes, attitudes, development, and change. Social processes, social influence, social cognition, and social psychology. (31:0 social science prerequisites.)

31:19 Psychopathology of Aging 3 cr.

Characteristics of normal changes in behavior and functions as the life span progresses. Aging and its relationship to social and psychological phenomena. (31:0 social science prerequisites.)

31:21 Learning and Motivation in Children 3 cr.

A study of the general principles of motivation and learning, with an emphasis on motivation, learning, problem solving, decision making, and thought processes. (31:0 social science prerequisites.)

31:25 Social Cognition 3 cr.

Research on the processes of self-knowledge, attribution, and social perception, theory, evidence, and methodology. (31:0 social science prerequisites.)


Survey of the major methods of data collection and analysis in social psychology. The emphasis is on the learning process, decision making, and thought processes. (31:0 social science prerequisites.)

31:27 Introduction to Comparative Psychology 3 cr.

Applications of psychology to the study of animal behavior, including information on the role of behavior in understanding social organization, communication, and evolution. (31:0 social science prerequisites.)

31:28 Psychology in Business and Industry 3 cr.

Applications of psychology to problems in the world of work, research or design of selection training, evaluation, motivation, measurement of performance.

31:29 Research Design and Analysis 3 cr.

Applications of psychology to psychology, experimental and developmental methods in social science research are emphasized. (31:0 social science prerequisites.)

For Undergraduates and Graduates

An approved statistics course—79:1 or 79:26, 79:22, 79:14, 33:14, 251:16, 261:16, 251:48, 33:14 or 33:15, or equivalent—is prerequisite to all 300-level psychology courses. 33:14 or 33:15 satisfies the statistics requirement for psychology majors. Exemptions are 33:15, 35:12, 35:14, 35:16, 34:17, which have different prerequisites. 33:12 or 33:14 or 33:15 is prerequisite to all other psychology courses. Only one of these may be taken for credit.

31:02 Development of Objectivity in Social Behavior 3 cr.

Basic processes altering children's responses to the environment: adjustment and socialization, physical and mental growth, mental and social development.

31:02 Social Psychology 3 cr.

Social processes involving cognition, perception, and motivation. (31:0 social science prerequisites.)

31:04 Abnormal Psychology 3 cr.

Color psychology, animal behavior. The emphasis is on current methods in assessment and treatment of psychological disorders. (31:0 social science prerequisites.)

31:05 History of the Behavior 3 cr.

A survey of the history of psychology and the methods in psychology that have been developed as it has changed and developed. (31:0 social science prerequisites.)

31:06 Professional Psychology 3 cr.

A professional psychology, methods in psychology that have been developed as it has changed and developed. (31:0 social science prerequisites.)

31:08 Introduction to Clinical Psychology 3 cr.

Survey of current research and theory in clinical psychology. Information on current methods in assessment and treatment of psychological disorders. (31:0 social science prerequisites.)

31:13 Principles of Psychology 3 cr.

Survey of current research and theory in clinical psychology. Information on current methods in assessment and treatment of psychological disorders. (31:0 social science prerequisites.)

31:15 Research Methods in Social Psychology 3 cr.

Research relating behavior of individual humans to behavior among social units, interpersonal and social processes, attitudes, development, and change. Social processes, social influence, social cognition, and social psychology. (31:0 social science prerequisites.)


Religion

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 Honors Program by the director of that program and by 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 2.0. Of the 15 semester hours, at least 12 must be taken at The University of Iowa in courses numbered 200 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, students earn a minimum of 36 semester hours in the School of Religion. Most of these hours will be earned in courses that fall into one of three areas of concentration: the Hebrew Bible and its early interpretations, Judaism and Christianity in the Greco-Roman world, history of religion and religions thought in the West; these three areas of concentration, and history of Asian religions. Students in the thesis program take at least one seminar in this area and may elect the thesis for 6 of the semester 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 24 semester hours. Students in the thesis program will take one seminar and may count the thesis for 6 semester hours of credit. Students in the nonthesis program take two seminars. A maximum of 6 semester hours may be transferred from another accredited graduate or professional school.

All students must complete a one-semester unit of 32:216 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 10 semester hours) in one other area of concentration in the School of Religion: the Hebrew Bible and its early interpretations, Judaism and Christianity in the Greco-Roman world, history of religion and religions 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 must take 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 undertook 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 doctorate must complete a minimum of 72 semester hours of graduate course work, of which 5 semester hours must be taken in each of the following areas of concentration: the Hebrew Bible and its early interpretations, Judaism and Christianity in the Greco-Roman world, history of religion and religions thought in the West, theology and ethics, and history of Asian religions.

No later than the middle of the student's fourth semester, each student must decide whether to follow the requirements of the Ph.D. program. The student must take the introductory colloquium designed to orient new graduate students to basic issues in the academic study of religion; show evidence of the ability to write scholarly papers; judgment on a series of papers, one for each concentration, on a field of inquiry, 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 program; and file a plan of study that lists course work and language and research tools in...
The Rhetoric Department offers courses that fulfill the General Education Requirement in rhetoric and provides individual instruction in lab settings. Rhetoric faculty members also advise graduate instructors and teach advanced courses that promote the rhetorical understandings and professional development of undergraduate students from diverse disciplines.

Rhetoric courses help students to:
- read with understanding and enjoyment, and write and speak about reading with personal authority and "analytical" skill;
- use writing and speaking to discover and explain, question and defend issues;
- take into account such fundamental rhetorical concepts as audience, purpose, and appropriateness in deriving effective communication. Some rhetoric classes are organized around a specific topic, but the emphasis is always on rhetorical practice and analysis.

All undergraduate—excluding transfer students—must satisfy the rhetoric requirement in one of several ways: pass 10.1 and 10.2 (total of 8 a.c. hrs), pass 10.3 (4 a.c. hrs); score high on the essay-exposition test and pass 10.4 (4 a.c. hrs); score high on the speech-exposition test and pass 10.4 (4 a.c. hrs). Score high on both the speech and essay-exposition tests; or
- some combination of the above, with the undergraduate course work accepted for transfer credit.

During their first semester at the University, students should consider the class indicated on their graduation program reports or degree audits; unless a class is required, students must specify in their rhetoric each semester until the requirement has been satisfied.

Once enrolled in a rhetoric course, students may not drop.

Placement is ordinarily determined by American College Testing scores and any available transfer credit. Students who question their placement may bring a signature from the appropriate department chair to the Rhetoric Department office, 71 I.D.P., during registration.

Students registered in 10.1 can test into 10.3 by achieving a high score on a two-page essay examination. Students registered in 10.3, 10.4, or 10.6 can satisfy all or part of the rhetoric General Education Requirement by taking an essay and/or speech examination. No academic credit is awarded for these examinations, which usually are administered on the first two nights of the semester. Further information is published in the Schedule of Courses each semester.

Students who have undergone formal evaluation by the Office of Services for Persons with Disabilities and are bound to be learning disabled in reading, writing, or speaking may request reasonable accommodations in order to complete the rhetoric requirement. Accommodations may be arranged by the Office of Services for Persons with Disabilities in consultation with the Rhetoric Department.

Satisfactory completion of the rhetoric requirement is prerequisite to the Information G.E. course 50.1. The Interpretation of Literature.
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-speaking area, and have enjoyed an enhanced knowledge and understanding of the culture, 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 more precisely on this region of the world. For more information on this comprehensive B.A. program, see "Soviet and East European Studies" in this section of the Catalogue.

With the increasing importance of Russian as a language of science and commerce, many students find that training in the language is an important asset to their careers in the natural and physical sciences, engineering, medicine, and business. Students of journalism, library science, and the social and military sciences also have accentuated 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 Catalogue). A number of government agencies annually advertise job candidates who have advanced training in Russian; these agencies give preference to applicants who couple strong language proficiency with a good background in area studies. Students who develop an excellent command 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 core courses of the College of Liberal Arts degree requirements (see the "College of Arts" section of the Catalogue) 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.
41:112-113 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 Civilizations 3 s.h.

Students majoring in Russian are urged to choose elective courses in economics, geography, history, or political science. Nearly every avenue of professional training and employment available requires a solid background in Russian area studies. For example, a recent statement on the criteria for U.S. government employment cites as a 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...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 the following:

Honors

Russian majors of junior or senior standing with a grade-point average of at least 3.00 both in Russian literature courses and in the honors program in Russian. An culminating scholarly project with a written, regular reports, and a seminar paper constitutes each honors work unit of 3 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 writers' styles, perceive literary techniques, recognize literary influences, and develop the ability to sound the exact meaning of a text's content, and to communicate it.

Students who elect a language studies emphasis focus on the historical development of Russian and on the 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 are made on the basis of advanced language skills. Applications are considered only from students who have been recommended for these positions. Inquiries should be addressed to the departmental office.

Summer and Study Abroad Programs

The department strongly encourages undergraduate and graduate students to participate in intensive programs of language study, both in the United States and in the Soviet Union. In recent years, many of these students have studied in summer, semester, and academic-year programs at Leipzig 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 programs 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 course of study (41:105-106) designed primarily for students who need to develop a reading proficiency in Russian for research purposes in the
The Iowa Critical Languages Program

The Iowa Critical Languages Program prepares students to teach Russian, Chinese, or Arabic in Iowa's K-12 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 a TEFL (Teaching English to Speakers of Other Languages) endorsement at the secondary level. Applicants must be U.S. citizens or permanent residents. They may already hold a baccalaureate degree and teaching certification.

Through a grant from the Ford Foundation, participating students receive scholarships for a year of study abroad and two summers of intensive language study in Russia and China. They are selected for their excellence in foreign language training. Participants in the program are eligible to teach in a consortium of public school districts for at least two years after graduation. Additional information can be obtained from the Office of Academic Affairs, 113 Jessup Hall.

Language Media Center

The University's Language Media Center provides facilities for language learning, teaching, and research. Equipment in the lab includes standard and short-wave radios, tape and cassette recorders, recorded players, wordprocessed recording rooms, edit rooms, and video facilities. An electronic classroom, a soundproof workroom, and a library of tape, disc, and cassette recordings also are available.

Courses

For Undergraduates and Graduates

4100 Cooperative Education Internship 3 s.h.
411 First-Year Russian I 4 s.h.
412 First-Year Russian II 4 s.h.
4X2 Foreign language (Prerequisite: 411 or equivalent)
413 Second-Year Russian I 4 s.h.
4S2 Foreign language (Prerequisite: 411 or equivalent)
414 Second-Year Russian II 4 s.h.
4X3 Foreign language (Prerequisite: 413 or equivalent)
416 Introduction to Conversational Russian 3 s.h. for a maximum of 6 s.h. 41110
418 Russian for Reading I 3 s.h. Prerequisite: 412 or equivalent.
419 Russian for Reading II 3 s.h. Prerequisite: 412 or equivalent.
41771 Russian in the Soviet Press 3 s.h. Prerequisite: 412 or language instruction as equivalent.
418 Special Readings 3 s.h. May be repeated up to 18 s.h. Prerequisite: 40 s.h. or equivalent.
4118 Introductory Conversation 3 s.h. Prerequisite: 411 or equivalent.
4118 Intermediate Conversation 3 s.h. Prerequisite: 414 or equivalent.
4118 Third-Year Russian I 4 s.h.
4118 Third-Year Russian II 4 s.h.
4118 Third-Year Russian III 4 s.h.
4118 Fourth-Year Russian I 4 s.h.
4118 Fourth-Year Russian II 4 s.h.
4118 Advanced Conversation I 3 s.h. Development of oral and written proficiency in Russian. Prerequisite: 41110. 41110
4118 Advanced Conversation II 3 s.h. Proficiency in Russian. Prerequisite: 41110.
4118 Russian Composition 3 s.h. Prerequisite: 414 or equivalent.
4118 Russian Composition II 3 s.h.
4118 Teaching Methods 3 s.h. Observation of classes, method, procedures, and materials of Russian instruction at the secondary school level. Prerequisite: 41110. 41110
4118 Russian Literature in Translation 1868-1945 3 s.h. Prerequisite: 41110.
4118 Russian Literature in Translation 1945-1990 3 s.h. Prerequisite: 41110.
4118 Russian Literature in Translation 1945-1990 3 s.h.
4118 Teaching Methods 3 s.h.
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are drawn from courses offered in these various departments.

**Undergraduate Programs**

The undergraduate program in science education represents a transdisciplinary major in science for students interested in teaching.

The science education major is not intended to prepare students for advanced study in one area of science. When graduates of the Science Education Program elect to pursue graduate studies in a single area of science, they often must complete additional courses in that discipline after they are admitted to the Graduate College.

All of the emphasis areas in science education have the following characteristics in common:

- **Depth** in a general area of science: equivalent to three years of study in that discipline.
- **Preparation** in a second area of science: equivalent to two years of study in that discipline.
- **Introduction** to other fields of science.
- A **general proficiency in mathematics as a tool of science**: (more mathematics study is required for the physical science emphasis than for the biological emphasis).
- A **view of science from a historical/philosophical/cultural perspective**.
- **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 10 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 36 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 emphases within the science education major: 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.
- **373 Principles of Animal Biology** 5 s.h.
- **Electives (in biology, botany, zoology, including work in genetics, ecology, and physiology)** 14 s.h.
- **415-16 Principles of Chemistry I & II** 8 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.
- **2911 College Physics** 4 s.h.
- Mathematics courses at the level of M2M11 or 225 or higher 3-4 s.h.

**Application of Science**

- **97103 Societal and Educational Applications of Biological Sciences** 3 s.h.
- **97102 Societal and Educational Applications of Earth Sciences and Environmental Sciences** 3 s.h.
- **97105 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 97102 or 97105 with the advisor's approval.

**History/Philosophy/Sociology of Science**

- **97128 Meaning at Science** 2-3 s.h.
- **97140 Science of Historical Perspective** 2-3 s.h.

**Earth Science Emphasis**

At least 25 semester hours must be earned in 100-level courses.

- **Science** 4 s.h.
- **125 Introduction to Geology** 4 s.h.
- **125 Environmental Geology** 4 s.h.
- **124 Evolution of the Earth** 4 s.h.
- **121 Mineralogy** 4 s.h.
- **121 Geology of Iowa** 3 s.h.
- **2511 College Physics** 4 s.h.
- **2912 College Physics** 4 s.h.
- **12180 Solid Earth Geophysics** 3 s.h.
- **2611 General Astronomy** 3 s.h.
- **41101 Climatology** 3 s.h.
- **41101 Principles of Climatology** 3 s.h.
- **41101 Principles of Geophysics** 2 s.h.

**Physics Emphasis**

At least 25 semester hours must be earned in 100-level courses.

- **Science** 8 s.h.
- **2911 College Physics** 4 s.h.
- **2912 College Physics** 4 s.h.
- **41010 Principles of Geophysics** 3 s.h.
29.17-18 Introductory Physics I and II 8 s.h.
29.19 Introductory Physics III 4 s.h.

Physicselecves 12 s.h.
29.95-96 Engineering Calculus I and II 8 s.h.
4.53-54 Principles of Chemistry I and II 8 s.h.
4.18 Principles of Chemistry Lab I 3 s.h.
4.21 Organic Chemistry I 3 s.h.
4.23 Physical Chemistry I 3 s.h.

Application of Science
97.101 Societal and Educational Applications of Physical Sciences 3 s.h.
97.102 Societal and Educational Application of Earth Sciences and Environmental Sciences 3 s.h.
97.103 Societal and Educational Applications of Biological Sciences 3 s.h.

Graduates from courses offered in any major in engineering, agriculture, and technical schools may be substituted for 97.102 or 97.103.

History/Philosophy/Sociology of Science
97.128 Meaning of Science 2-3 s.h.
97.130 Science in Historical Perspective 2-3 s.h.

Physical Science Emphasizes

Science
4.13-14 Principles of Chemistry I and II 8 s.h.
4.15-16 Principles of Chemistry Lab I and II 7 s.h.
29.11-12 College Physics 8 s.h.
32.12 Introduction to Geology 4 s.h.

Physics Electives 8 s.h.

Chemistry electives 8 s.h.

Artificial, physical sciences electives (geology, geography, chemistry, physics) 11 s.h.

Application of Science
97.101 Societal and Educational Applications of Physical Sciences 3 s.h.
97.102 Societal and Educational Applications of Physical Sciences 3 s.h.

History/Philosophy/Sociology of Science
97.128 Meaning of Science 2-3 s.h.
97.130 Science in Historical Perspective 2-3 s.h.

General Science Emphasizes

Science
4.13-14 Principles of Chemistry I and II 8 s.h.
4.15-16 Principles of Chemistry Lab I and II 7 s.h.
4.12 Organic Chemistry I 3 s.h.
29.11-12 College Physics 8 s.h.
29.12 College Physics 4 s.h.
125 Introduction to Geology 4 s.h.
21.1 Introduction to Botany 4 s.h.
37.3 Principles of Animal Biology 5 s.h.

Science electives 15 s.h.

Electives must be chosen so there are at least 21 semester hours in both biology, chemistry, physics, or geology.

Application of Science
Two of the following:
97.102 Societal and Educational Applications of Earth Sciences and Environmental Sciences 3 s.h.
97.103 Societal and Educational Applications of Biological Sciences 3 s.h.
97.105 Societal and Educational Applications of Physical Sciences 3 s.h.

History/Philosophy/Sociology of Science
97.128 Meaning of Science 2 s.h.
97.130 Science in Historical Perspective 2 s.h.

Education Course Work for Teacher Certification
Interested students must apply for the Teacher Education Program in room 7109 Lindquist Center.

To qualify for a secondary teaching certificate with endorsements to teach science, students must have at least 2.5 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:
77-75 Educational Psychology and Measurement 3 s.h.
75.131 Science Methods I Elementary School Seminar and Practicum 2 s.h.
75.132 Science Methods II Research, Reading, Teaching Strategies, and Curriculum Development for K-12 Science 3 s.h.
75.133 Science Methods III Middle/High School (taken with 3 s.h. of 75.189) 2 s.h.
75.189 Issues in Education 2 s.h.
75.189 (Section 640) Elementary School Special Subject Area Student Teaching (taken with 75.152) 3 s.h.
75.187 (Section 91) Seminar: Curriculum and Student Teaching 3 s.h.
75.190 (Section 91) Individual Projects in Laboratory Practice 3 s.h.
75.191 (Section 91) Observation and Laboratory Practice in the Secondary School 3 s.h.
75.192 (Section 91) Observation and Laboratory Practice in the Secondary School 6 s.h.
75.190 Human Relations for the Classroom Teacher 3 s.h.

Students who complete 75.105 are recommended for K-12 certification.

Minors in Science Teaching
Six Science minors are available for persons with teaching assignments in other academic areas: biology, chemistry, physics, general science, earth science, and physical science. All require at least 33 semester hours of credit.

Students who want to pursue a science teaching minor beyond the University of Iowa recommendation for teaching certification should consult a faculty member in science education.

All science teaching minors must take:
75.131 Science Methods I Elementary School Seminar and Practicum 2 s.h.
75.132 Science Methods II Research, Reading, Teaching Strategies, and Curriculum Development for K-12 Science 3 s.h.
75.133 Science Methods III Middle/High School 2 s.h.
75.189 Elementary Special Subject Student Teaching 3 s.h.
97.128 Meaning of Science 2 s.h.
97.130 Science in Historical Perspective 2 s.h.

In addition, they must take the following basic requirements in their chosen minor area, as follows:

Biology
2.1 Introduction to Botany 4 s.h.
2.3 Principles of Animal Biology 5 s.h.
97.103 Societal and Educational Applications of Biological Sciences 3 s.h.

Chemistry
4.13-14 Principles of Chemistry I and II 8 s.h.
4.15-16 Principles of Chemistry Lab I and II 7 s.h.
97.105 Societal and Educational Applications of Physical Sciences 3 s.h.

Physics
28.11-12 College Physics 8 s.h.
97.105 Societal and Educational Applications of Physical Sciences 3 s.h.

General Science
2.1 Introduction to Botany 4 s.h.
125 Introduction to Geology 4 s.h.
21.1 Introduction to Botany 4 s.h.
29.11-12 College Physics 8 s.h.
97.130 Science in Historical Perspective 2 s.h.

Earth Science
12.5 Introduction to Geology 4 s.h.
29.11-12 College Physics 8 s.h.
97.130 Societal and Educational Applications of Earth Sciences and Environmental Sciences 3 s.h.

Applied Science
4.13-14 Principles of Chemistry I and II 8 s.h.
4.15-16 Principles of Chemistry Lab I and II 7 s.h.
29.11-12 College Physics 8 s.h.
12.5 Introduction to Geology 4 s.h.
97.105 Societal and Educational Applications of Physical Sciences 3 s.h.
97.105 Societal and Educational Applications of Physical Sciences 3 s.h.
Special Rules
Since the Science Education Program may involve many faculty advisors and several colleges and departments, some special rules and regulations apply to science education students. They include the following:

At least 10 semester hours of graded credit in science must be earned at The University of Iowa.

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 below 11 or credit from the UEEP 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/no-pass; 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 its basic aspects of modern science, all science education students are urged to complete the required sequence of courses in both pure and applied mathematics (including statistics and computer science) so that they may be qualified to do graduate work and qualify for research later.

Honors
To graduate with honors, students must maintain a 3.20 grade-point average and complete 59 90 Honors Research Project in addition to other science education requirements.

Iowa SISTP and the Iowa Science and Humanities Symposium
The Iowa Secondary Student Training Program (Iowa SISTP) is a special summer program that emphasizes research experience and expertise for talented secondary students. Participants register for credit at the University of Iowa in a variety of science areas. Various programs, such as Young Scholars and Summer Internship, Programs, are funded by Iowa SISTP when funding is obtained.

The statewide Iowa Science and Humanities Symposium sponsored by the U.S. Army Research Office each February involves about 100 students in over 30 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. The Department of Psychology, The College of Education, and the School of Education, in collaboration with the Department of Educational Policy, Leadership, and Innovation, offer these programs in science education. The Master of Arts in Teaching is described in the School of Education catalog.

Special Programs
The Iowa Science Education Program involves 250 participants in four or five workshops for teachers grades 4-9. The Iowa Science Education Program is organized into two components: the Iowa Science Education Program and the Iowa Science Education Program. The Iowa Science Education Program is designed for pre-service teachers and is offered in conjunction with the Iowa Science Education Program. The Iowa Science Education Program is designed for in-service teachers and is offered in conjunction with the Iowa Science Education Program. The Iowa Science Education Program is designed for in-service teachers and is offered in conjunction with the Iowa Science Education Program.

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 sociology of science
- Individualized learning
- Computer-assisted learning
- Classroom interaction studies

Student outcomes/perceptions of learning
- Intellectual development related to science teaching and learning
- Education in less developed countries

International Programs
The faculty in science education has collaborated on a number of international research and development projects in countries including Brazil, Italy, Spain, Portugal, Israel, Germany, Mexico, Indonesia, Korea, Australia, Taiwan, South Africa, Mexico, and India. Several recent projects 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 returned from Indonesia, Korea, Malaysia, Nigeria, Taiwan, and other nations around the world. Fulbright scholars and new 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 Y von May Hall near the center of the University campus.

The facilities include the two main offices, faculty, research, and graduate student lounge office space, a self-instructional computer laboratory, a photographic laboratory, instructional laboratories, departments for elementary and secondary school science methods courses, computer-oriented science, a large conference room, a large conference room used as an instructional center for the history and philosophy components of science education and secondary teacher education programs, a departmental conference room used for seminars, conferences, meetings, workshops, and in-service work with teachers, supervisors, and administrators, a common area for small-group discussion 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 secondary education majors.

Primarily for Undergraduates

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>SISTP 101</td>
<td>Cooperative Education Internship</td>
<td>0-8</td>
</tr>
<tr>
<td>SISTP 102</td>
<td>Foundations of Science</td>
<td>4</td>
</tr>
<tr>
<td>SISTP 103</td>
<td>Science Topics and Laboratory Investigations</td>
<td>3, 4</td>
</tr>
<tr>
<td>SISTP 104</td>
<td>Science Teaching and Learning</td>
<td>3, 4</td>
</tr>
<tr>
<td>SISTP 105</td>
<td>Research in Science</td>
<td>3</td>
</tr>
<tr>
<td>SISTP 106</td>
<td>Science Education</td>
<td>3</td>
</tr>
<tr>
<td>SISTP 107</td>
<td>Science Education Project</td>
<td>3</td>
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Graduate Courses

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<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>SISTP 201</td>
<td>Cooperative Teaching Internship</td>
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</tr>
<tr>
<td>SISTP 202</td>
<td>Foundations of Science</td>
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<td>SISTP 203</td>
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<td>SISTP 205</td>
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<td>SISTP 206</td>
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</tr>
<tr>
<td>SISTP 207</td>
<td>Science Education Project</td>
<td>3</td>
</tr>
</tbody>
</table>

Research experience required of undergraduates preparing honors degree.
For Undergraduates and Graduates

Social Work • Liberal Arts 227

For Undergraduates and Graduates

7.162 Societal and Environmental Applications of Earth Sciences and Environmental Science

Social Work • Liberal Arts 227

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 the 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 want to teach and earn a total of 30 semester hours in that field. They also must complete 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. Courses must be certified as departmental requirements for the major. In most instances, students are advised to apply in their junior year as well as in social studies education.

Additional information on social studies teacher certification programs is available from the office of the Dean of Secondary Education, NSU Lindy 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 counselors of social studies departments in junior and senior high schools. Some serve as curriculum coordinators for school districts, while others are staff members in community colleges. A few have used the degree to obtain employment in professional work in correctional and penal institutes. For a few, the master's program in social studies education has provided access to civil service positions at various levels of government. Students choose from two programs in social studies education: Program A provides an opportunity for interdisciplinary work in history, social science, and 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 the 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 find administrative posts in institutional higher education, serving as presidents, provosts, or deans of faculty or graduate studies. Some are department chairs in colleges of education or curriculum directors in large school districts. Many are in teacher education programs in colleges and universities, while others are college instructors in their areas of academic concentration.

Requirements and admission criteria for the program in Social Studies Education are described in the "College of Education" section of the Catalog under "Curriculum and Instruction."

Facilities

Students in social studies education have access to the facilities and faculty of the cooperating departments and the College of Education. Special agencies and services also are available, such as the University Hospital School, the Iowa Center for Education in Politics, the Bureau of Educational Research, the Institute of Public Affairs, the Iowa Educational Information Center, the Curriculum Laboratory, the Statistical Consulting Center, the computer laboratory, and the Tipp Computing Center.

Faculty members serve as social studies education advisors and coordinators are experienced classroom teachers whose advanced degrees have given them insight into history, the social sciences, and education. They are active in professional organizations, consultative work, and in working with schools in curriculum revision.

Courses

20.101 Individual Instruction in Social Studies Education 3-5 h. Beginning with field studies, individual instruction is given to examine problems of educational work. May be repeated. Consent of instructor required. 20.802 Seminar. Social Studies Education 2 Exploring the current research developments in history, social sciences, and social studies education; selected investigative papers required. Consent of instructor required. Same as 21.207.

SOCIAL STUDIES EDUCATION

Chairman: Robert M. Fisch

Professor: Robert M. Fisch


Undergraduate Program

The major in social studies education is an interdisciplinary, nonprofessional major. It provides an excellent preparation 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 requirements of the core 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.
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. A total of 12 semester hours must be taken at The University of Iowa in courses numbered 42100 and above. 4222, or its equivalent at another institution. It 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 42/22 Introduction to Social Work with a grade of C or higher (can be taken during the sophomore year).
A cumulative grade point average of at least 2.5; and
Completion of the application process.
Exceptions may be made for persons who do not meet the grade point requirements if they are proving candidates on the basis of other merits.

More information is available from the coordinator of the Admissions Office of The University of Iowa 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. In common with all MSW programs, the program is designed to produce professional social workers in a variety of settings.

The program is accredited by the Council on Social Work Education.

Undergraduate Program
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 social service agencies, human services, mental health, mental health services, social work agencies, and to provide opportunities for informed community participation in social welfare issues.

Graduate 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 social work 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.

Bachelor of Arts in Social Work
Freshman/Sophomore Years

Primary Course: 31.1 Introduction to American Politics 3 s.h.
Secondary Courses: 31.1 Elementary Psychology 3-4 s.h.
31.3 General Psychology 3 s.h.
31.4 Introduction to Sociology: Principles 3 s.h.
3.4 Basic economics courses 3 s.h.
42.02 Introduction to Social Work 4 s.h.

Junior Year
42.147 Racism and Discrimination 3 s.h.
42.148 Human Behavior in the Social Environment 3 s.h.
42.141 Fundamentals of Social Work Practice 3 s.h.
42.142 Intergenerational Service 3 s.h.

Senior Year
42.143 Social Welfare Policy and Practice 3 s.h.
42.189 Field Experience Seminar 3 s.h.
42.193 Field Placement 3 s.h.

Other Courses
The undergraduate program requires a minimum of 12 semester hours of coursework in one department listed below. 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 science courses.

Other Courses

American Studies

Anthropology

Canadian Studies

Economics

English

History

Human geography

Journals

Leisure studies

Political science

Psychology

Religion

Sociology

Spanish

Honor
The School of Social Work has an honors program leading to a Bachelor of Arts with honors in social work. A 3.00 cumulative grade-point average is required for participation in the program, which requires students to do in-depth study in aspects of interest to them.

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. A total of 12 semester hours must be taken at The University of Iowa in courses numbered 42100 and above, 4222, or its equivalent at another institution. It 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 42/22 Introduction to Social Work with a grade of C or higher (can be taken during the sophomore year).
A cumulative grade point average of at least 2.5; and
Completion of the application process.
Exceptions may be made for persons who do not meet the grade point requirements if they are providing candidates on the basis of other merits.

More information is available from the coordinator of the Admissions Office of The University of Iowa 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. In common with all MSW programs, the program is designed to produce professional social workers in a variety of settings.

The program is accredited by the Council on Social Work Education (CSWE).

The Master of Social Work degree includes 48 semester hours of credit 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 earn the degree with 45 semester hours. A limited number of students are admitted to a 36-credit, 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. Not to exceed semester hours of graduate transfer credit is allowed for previous graduate work.

The school operates a year-round, accelerated program that begins in the fall semester for full-time students who have completed the required 60 semester hours after admission. The program consists of the summer session, which is a five week session. Full-time students who complete the entire 60 semester hours after admission participate in the M.S.W. program in the fall semester (January). Students in the 36-semester-hour program begin their course work in the third semester (May). The 36-semester-hour program is available only to full-time students.

Part-time students go through the program as 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. This 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 collaboration with a program mentor 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
Human Behavior in the Social Environment 4 s.h.
Fundamentals of Social Work Practice 3 s.h.
Intergroup 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 3 s.h.
Organizational and Community Practice 3 s.h.
Research and Intervention 3 s.h.
Foundation Practicum 3 s.h.
Elective 3 s.h.
Total 12 s.h.

Summer Session
Electives—excluding placement 4-11 s.h.

Second-Year Concentration
Fall Semester
Family Systems Theory or
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 12-13 s.h.

Spring Semester
Family Therapy or
Social Work Practice in Interdisciplinary Setting 3 s.h.
Family Policy, Domestic and International or
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/advocates 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 in public and private social service agencies. Its holistic perspective develops awareness of the interconnectedness between the social, political, and economic environments 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, college, industry, and correctional institutions. It provides a balance of content for both clinical and nonclinical practice; it allows for an individualized approach, training and professional development, and collaboration among other professionals.

Interdisciplinary 480 s.h. courses stress the importance of integrating services for multiple-problem families and families at the community level. The curriculum 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 480 s.h. program is available in Iowa City and Des Moines. At the end of the fall calendar year, some students stay in Iowa City/ORCA Ridge Park area for the remainder of their programs, including fall semesters, and some are assigned to Des Moines or the Quad Cities for practice. Students may need to relocate.

The Des Moines Center, 115 miles west of Iowa City, is located in Iowa 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 also have a practicum assignment for the Quad Cities usually commutes 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 to the graduate program. In the Quad Cities, a group of part-time students is admitted every two years; the next group will begin in fall 1993. 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 CSWE and the University of Iowa Graduate Council as providing a comparable program to that available in the Iowa City campus.

Part-time students complete two courses each spring and fall semester for three or four years. Electives may be taken concurrently with fall and spring semester courses and in the summer. A full range of summer courses is available in Iowa City, and some courses are available in Des Moines. The format for some Iowa City summer courses is intensive, short-term, and off-season, enabling students from other centers to take campus courses.

Joint Degree Programs
The school has formal agreements with the College of Law and the Department of Urban and Regional Planning for joint degrees. Students must be accepted to each
department through its regular admission process. Up to nine semester hours in each program are applied to requirements of the other, thus reducing the time it would usually take to pursue two degrees. Individual arrangements may be made with other departments. Students seeking joint degrees with the College of Business Administration, College of Education, American Studies Program, School of Religion, School of Journalism and Mass Communication, and others. Students are encouraged to take courses in other departments whether or not they are pursuing joint degrees.

Cooperative Programs
In cooperation with the Counseling Education Program in the College of Education, a curriculum has been designed around the requirements of the American Association of Marriage and Family Therapists (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. programs; they must apply independently to the coordinators of the Aging Studies Program.

The school also participates with the College of Education to provide curricula that align with the school's social work certification in Iowa. Students can work toward certification while studying in the M.S.W. program. Students apply for certification and must complete the coursework 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/study seminars. Urban, rural, national, and international seminars are available.

Graduate Admission
The criteria for admission for full-time and part-time study in the 30- and 45-semester-hour M.S.W. programs are:

A bachelor's degree from an accredited college or university, with a reasonable distribution of courses in the social sciences and humanities;

A 2.00 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 recommendations, including one regarding academic abilities and two regarding social worker or other work experience; and

A personal statement addressing criteria specified by the School of Social Work. Previous experience in the human services (volunteer, part-time, or employment) is desired. Previous enrolling life experience (cross-cultural and international experience and background, and minority status) also are granted consideration.

Foreign applicants must score at least 500 on the Test of English as a Foreign Language (TOEFL).

It is the school's policy to admit 15-25 percent of the M.S.W. class with grade-point averages below 3.00. Applicants who are especially strong candidates on the basis of other criteria may be admitted. Since the school seeks to maintain a heterogeneous 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.

Applications are accepted beginning September 1 and must be completed by February 1 to be considered for the next academic year. Students in the 45-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 30-semester-hour programs must be completed by January 1. Additional criteria for admission for the fall-only, 36-semester-hour program include:

A bachelor's degree from a CINN-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 two 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 Office of Student Financial Aid include research and teaching assistantships, Work-study employment programs, and the Eleanor K. Taylor loan funds. Aid is available from other sources, such as the Graduate and Professional Opportunities Program (GPOP), national grants, international scholarships, 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

18132 Introduction to Social Work

1.5 b. Human behavior as it relates to societal roles and problems of social work. Emphasis on American social problems and their relation to cultural and social work in society. Open only to majors or ones who wish to receive a major in social work.

18134 Substance Use and Abuse

1.5 b. Introduction to chemical dependency for helping professionals, medical, biological, psychological, legal, and sociological aspects of chemical abuse. Open only to majors or ones who wish to receive a major in social work.

18135 Work Processes

3.0 b. Basic concepts and processes for job search and development of work skills. Special emphasis on development of personal and professional communication skills. One credit hour is required of all students in the School of Social Work.

18136 Field Experience Seminar

1.5 b. Seminar for majors working in field placements or internships. May be repeated. Open only to majors or ones who wish to receive a major in social work.

18138 Human Behavior in Organizations

4.0 b. Human behavior in organizations: the sociology of work organization, kinds of organizations, job design and job analysis, employee relations, group dynamics, and leadership. May be repeated for credit. Dependable for the major in social work.

18153 Individual Study

arr. Individual study for majors working in field placements or internships. May be repeated. Open only to majors or ones who wish to receive a major in social work.

18160 Field Experience

arr. Field experience required of selected social work majors in a social work organization approved by the Department of Social Work. May be repeated for credit. Dependable for the major in social work.

18162 Health Care for Social Workers

arr. Health care for social workers, descriptive and prescriptive. May be repeated for credit. Dependable for the major in social work.

18163 Disaster Response

arr. Disaster response to chronic crises, including natural and man-made disasters, and emergency response. May be repeated for credit. Dependable for the major in social work.
for a sociology major is available in the department.

Departmental requirements are the same for transfer students as for other students. While some coursework at other colleges is 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 through majoring 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 coursework for 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 maximum 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 24:100 and higher.

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 integrative educational experience for undergraduate majors who perform at a high level. To qualify for the Honors Program in Sociology, students must have a grade-point average of 3.20 overall and in sociology courses. The honors curriculum consists of 34:100 Honors Practicum in the junior year, one advanced undergraduate course or graduate course approved by the honors director, and two honors theses. The honors theses give students an opportunity to do sociological research in consultation with a faculty member of the student's choice. As an option, honors students may take the honors section of 34:215 Introduction to Sociology: Principles, thereby waiving the course registration prerequisite 34:215 in Sociology. Problems for a degree in sociology.

Graduate Programs

The graduate program in sociology is open to students whose work is of high quality and who desire advanced training. 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 and policy, 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 attended by persons who desire a terminal degree and for whom a wider range of courses in sociology is appropriate.

At completion of the 34-hour degree, the major must complete the following with grades of B or higher:

34:202 History of Sociological Theory 3 s.h.
34:214 Sociological Theory 3 s.h.
34:215 Elementary Statistics and Data Analysis 3 s.h.
34:215 Sampling, Measurement, and Observation Techniques 3 s.h.

M.A. in Criminal Justice and Corrections

This program is designed for individuals who wish to work in the field of justice. Since it is assumed that a sociological orientation and background is extremely valuable for such work, the major emphasis of the program is sociological. It is also recognized that traditional knowledge is essential to performance in professional criminal justice roles. Therefore, students may select 15 semester hours of course work in areas such as legal process, administrative procedure, or direct intervention techniques in order to broaden their knowledge. The flexible curriculum affords students in consultation with their advisor, considerable choice in selecting courses that will best enable them to achieve their career goals.

A limited number of students enter the program each year, so a low student-faculty ratio is maintained. Internships are available with local criminal justice agencies. Successful completion of this program requires a minimum of 36 graduate credits, a 3.0 grade-point average on all work taken, 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 100 hours required for the J.D., even though those hours also are credited toward the M.A. in sociology.

At the discretion of the student's M.A. committee, the Department of Sociology may apply up to 12 semester hours of credit for law coursework toward the M.A. degree. This cross creating 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 areas of the relationship between law and society.

Doctor of Philosophy

The Ph.D. program in sociology requires a minimum of 72 semester hours of graduate-level course work, including the work at the M.A. course 34:215 Intermediate Statistics and Data Analysis and 3 elective semester hours in multivariate statistics. 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 faculty and committee is involved in examinations. A detailed statement of regulations for graduate study is also available upon request. Prospective doctoral candidates should schedule the examination carefully.

Special Workshops

The department organizes a series of workshops each semester on new and interesting research methods not covered in the introductory methods sequence. 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. Courses covered in recent years include LEHMAN time-series analysis, simulation techniques, event history analysis, and time-series analysis.

A biweekly summer workshop on tools and methods used in theoretical analysis in each faculty area is open to graduate students. Workshop participants critique articles, which have been distributed a week before the session.

Admission

Admission to graduate study in sociology usually requires a minimum undergraduate average of 3.0 and a Quantitative score of 1100 from the Quantitative portion of the Graduate Record Examination (GRE). General Test. Foreign students whose native language is not English should submit scores from the
Deviance, Delinquency, Crime, and Law

421 Research
Nature, causes and course of crime; the criminal subculture, crime and prevention. Prerequisite: 341 or consent of instructor.

422 Criminal Justice
Debates and current disputes of misconduct, crime, and correction. Prerequisite: 341 or 342 or consent of instructor.

423 Women, Crime, and Deviance
Sociological understanding of behavior as a participant in social roles and crime and delinquency. Prerequisite: 341 or consent of instructor. Cross-listing: Sociology 423.

424 Sociology of Criminal Justice
Cause and effects of crime and deviance, social control, and crime and delinquency. Prerequisite: 341 or consent of instructor. Cross-listing: Sociology 424.

425 Social Control of Deviance
Analysis of social control in group, society, and the individual. Prerequisite: 341 or consent of instructor. Cross-listing: Sociology 425.

426 Deviance and Control
The nature of deviance and analysis of social control and socialization, with emphasis on the duality of behavior; social control and socialization. Prerequisites: 341 and 342 or consent of instructor.

427 Preparing for a Career in Criminal Justice
Analysis of preparation strategies in crime and delinquency, including professional work, and preparation and evaluation of alternative career strategies. Prerequisite: 341 and 342 or consent of instructor.

428 Internship in Criminal Justice
Practicum in a criminal justice setting. Prerequisites: 341 and 342 and consent of instructor.

429 Seminar in Criminal Justice
Practicum in a criminal justice setting. Prerequisites: 341 and 342 and consent of instructor.

430 Social Institutions, Social Change
Historical, social and political issues in the social sciences. Prerequisites: 341 and 342 or consent of instructor.

431 Sociology of Aging
Aging, community theory and age inclusion in society. Prerequisites: 341 or consent of instructor.

432 Sociology of Women
Sociological issues of women in society; socialization, attitudes, and the roles of women. Prerequisites: 341 or consent of instructor.

433 Sociology of Families
Sociological theory and methodology in the study of family and domestic life. Prerequisites: 341 or consent of instructor.

434 Sociology of Sex and Gender
Sexual orientation and gender roles. Prerequisites: 341 or consent of instructor.

435 Family, Life-Style, Children, and Aging
The family and adult development; socialization, family, intimacy, and aging. Prerequisites: 341 or consent of instructor.

436 Teaching Sociology
Preparation and teaching of courses in sociology. Prerequisite: 341 or consent of instructor.

437 Research Methods in Sociology
Methods of analyzing data and research in sociology. Prerequisites: 341 or consent of instructor.

438 Physical Anthropology
Biological aspects of human life and culture. Prerequisites: 341 or consent of instructor.

439 Economy and Labor Markets
Economic and labor market issues. Prerequisites: 341 or consent of instructor.

440 American Economic History
American economic history since the American Revolution. Prerequisites: 341 and 342 or consent of instructor.
Sample Course of Study
Freshmen Year
Fall Semester
415:100 Introduction to the Soviet Union 3 s.h.
415:101 Post-Years Russian I 4 s.h.
415:103 Principles of Microeconomics 3-4 s.h.
General education electives 4-6 s.h.
Spring Semester
415:102 Principles of Macroeconomics 3-4 s.h.
165:177 Imperial Russia: 1801-1917 3 s.h.
415:190 Field Year: Russia B 4 s.h.
General education electives 4-6 s.h.
Sophomore Year
Fall Semester
165:176 Imperial Russia (1918-1941) 3 s.h.
165:178 Soviet Union 1917-1933: Revolution and the New Regime 3 s.h.
415:202 Second-Year Russian A 4 s.h.
General education electives 4-6 s.h.
Spring Semester
165:204 The Soviet Economy 3 s.h.
415:214 Second-Year Russian B 4 s.h.
General education electives 4-6 s.h.
Junior Year
Fall Semester
165:175 Imperial Russia (1812-1819) 3 s.h.
19:151 Mass Media and Society 3 s.h.
30:161 Intro to Soviet Government and Politics 3 s.h.
fr. 111 Third-Year Russian I 4 s.h.
General education electives 3-4 s.h.
Spring Semester
19:160 Comparative Communication Systems 3 s.h.
30:141 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
415:105 International Economics 3 s.h.
165:175 Macroeconomic Theory 3 s.h.
120:158 Strategic and Area Control 3 s.h.
41:150 Russian Culture 4 s.h.
General education electives 3-4 s.h.
Spring Semester
165:160 The Political Economy of Socialism 3 s.h.
165:188 Contemporary European News Colloquium 3 s.h.
30:168 Soviet Foreign Policy 3 s.h.
31:182 Soviet Literature and Stalin 3 s.h.
415:190 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 3.2. To graduate with honors, students must maintain at least a 3.59 grade-point average in the Soviet and East European Studies program and a cumulative grade-point average of at least 3.2. Honors students take 12 semester courses of college work with a grade of B or higher 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 different disciplines. Students are interested in seeking a B.A. degree with honors should contact the College of Liberal Arts Honors Program and the SEES program honored advisee 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 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 learning 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 encouraged to do so. The SEES faculty stand ready 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 language and cultural training in Bulgaria, Czechoslovakia, East Germany, Hungary, Poland, Romania, and Yugoslavia. The best study-abroad programs in the Soviet Union are described in the Department of Russian section of the College. Students are increasingly able to apply directly for admission to almost all institutions 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 001 Principles of Microeconomics 3 s.h.
*EC 002 Principles of Macroeconomics 3 s.h.
*EC 016 International Economics 3 s.h.
*EC 017 The Soviet Economy 3 s.h.
*EC 018 The Political Economy of Socialism 3 s.h.
19:157 Honors Seminar (Gerald Norgard) 3 s.h.

*These courses are prerequisites to the economics curriculum in area concentrations; they do not count toward 27 semester hours of courses work required for the Bachelor of Arts.

History
16:101 Columbia for History 3 s.h.
16:103 Advanced Seminar 3 s.h.
16:104 Modern European Social Thought: Adam Smith to Marx 3 s.h.
16:105 Modern Asian Thought 3 s.h.
16:106 Medieval Russia 3 s.h.
16:107 Medieval Russian 3 s.h.
16:108 Medieval Russian 1080-1589 3 s.h.
165:176 Imperial Russia 1598-1801 3 s.h.
165:177 Imperial Russia 1801-1917 3 s.h.
165:178 Soviet Union 1917-1953 3 s.h.
165:179 Soviet Union 1953-Present 3 s.h.
165:180 Contemporary European News Colloquium 3 s.h.

Journalism and Mass Communication
19:155 Mass Media and Society 3 s.h.
19:160 Comparative Communication Systems 3 s.h.
10:190 Special Projects in Mass Communication 3 s.h.
19:190 Readings in Communication and Mass Communication 3 s.h.
19:190 Honors Readings 3 s.h.
Spanish and Portuguese • Liberal Arts

No more than 3 of the 35 semester hours required in the Latin American studies track may be taken in English.

Students completing the Latin American studies track of the undergraduate major in Spanish can also count their work toward completion of the Latin American Studies Certificate Program. For additional information, students should contact the undergraduate advisor or the chair of the Latin American Studies Program.

Literature and Culture Track

Disqualified for students interested in pursuing in-depth study of Spanish and Spanish-American literature, history, and contemporary society, and for students who want to prepare themselves for graduate work in literature, attendance at professional conferences such as law journals, or business, or for a variety of business careers. The literature and culture track requires a minimum of 36 semester hours of coursework, distributed as follows:

- 35.107 Advanced Spanish Language 4 s.h.
- 35.108 Additional Spanish or Portuguese language or literature 6 s.h.
- Spanish and Spanish-American Literature and culture 24 s.h.

Among the 36 semester hours taken in literature and culture, at least 6 semester hours must be taken in the Spanish area and 6 semester hours in the Spanish-American area.

No more than 3 of the 34 semester hours required in the literature and culture track may be taken in English.

Elementary and Secondary Teaching Certification in Spanish

Spanish majors interested in certification to teach in elementary and secondary schools must successfully complete the requirements listed above for any of the seven tracks in Spanish, as well as be admitted to the College of Education's foreign language teacher education program. Several courses in the College of Education are required, as is one semester of student teaching. In the senior year, contact the College of Education for further information. Students who plan to use a Spanish minor to teach in the elementary or junior high secondary level must consult the College of Education concerning the requirements.

Honors in Spanish

Admission to the honors program in Spanish requires a minimum 3.25 total cumulative grade-point average and a minimum 3.50 average in Spanish. Graduation with honors in Spanish requires, in addition to the semester hours for the various major tracks described above, 6 semester hours in Spanish literature, 35.108 Honors Spanish Literature, and 35.110 Honors Spanish Language, 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 12, 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 elected to fill minor requirements:

- 35.101 Accelerated Elementary Spanish
- 35.102 Accelerated Intermediate Spanish
- 35.144 Language Teaching Practicum
- 35.145 Methods: Foreign Language
- 35.147 Topics in Foreign Language Instructional Technology

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 Bachelor of Business Administration. The program prepares students to study international business and economics, international relations and politics, a foreign language, such as Spanish or Portuguese, and related area studies. It is designed not only for students who wish to pursue careers in international business, but also for those interested in gaining a broader understanding of the global economy and a broader awareness of the political, historical, and social environment in which international business operates.

The wide range of courses in the program provides students with a broad understanding of international business and its global environment and in which international business operates.

For further information, see the College of Business Administration. The College of Business Administration offers the following certificate programs:

- 35.105 Brazilian Literature
- 35.106 Brazilian Literature
- 35.107 Introduction to Portuguese Literature
- 35.114 Culture and Civilization of the Portuguese-Speaking World
- 35.115 Topics in Portuguese Language (upper-division level)

Foreign Study Programs

The department participates in foreign study-abroad programs. For more information, see the CIEE Language and Area Studies Program (Iquique, Chile), the CIEE Language and Society Program (Seville, Spain), the CIEE Language and Society Program (Seville, Spain), the CIEE Language and Culture Center (Madrid, Spain), and the University Studies in the Foreign Country Consortium (San Sebastian, Spain).

Eligible programs include a number of different programs allowing 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.

Bachelors of Arts in Portuguese

Beginning courses in Portuguese are for students without previous foreign language study or experience. Courses are staffed, providing for a large deal of individual attention in an informal language-learning environment. Current language speaking and comprehending basic Brazilian Portuguese, they incorporate cultural materials in the form of lectures and music. Currently, the B.A. in Portuguese requires 18 semester hours. Beginning courses in Portuguese, for a total of 27 semester hours of coursework, beyond the second-semester year. Course descriptions below, may be counted toward the 27 semester hours.

Preparatory Courses

- 35.101 Elementary Portuguese I 4 s.h.
- 35.102 Elementary Portuguese II 4 s.h.
- 35.103 Advanced Portuguese I 4 s.h.
- 35.104 Advanced Portuguese II 4 s.h.
- 35.105 Brazilian Literature I 3 s.h.
- 35.106 Brazilian Literature II 3 s.h.
- 35.107 Introduction to Portuguese Literature 3 s.h.
- 35.114 Culture and Civilization of the Portuguese-Speaking World 3 s.h.
- 35.115 Topics in Portuguese Language (upper-division level) 3 s.h.

Enrollment in these (3 s.h.):

- 35.112 Topics in Juso-Brazilian Literature 3 s.h.
- 35.113 Topics in Portuguese Linguistics 3 s.h.
- 35.121 Portuguese for the Professions (upper-division level) 3 s.h.

Eligible: other courses in the above group or other noncredit offerings in Portuguese (vocational, conversation), approved courses in related areas (e.g., art, anthropology,
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. Ten of these hours must be taken at The University of Iowa or in an approved language of Iowa 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 & Liberal Studies Education Requirements in humanities and foreign civilization and culture with 30 20 Contemporary Latin American Narrative and 30 20 Contemporary Brazilian Narrative, in which the readings are in English. The department offers several other literature, film, and cultural survey courses and is taught in English and are of great interest.

Latin American Studies Certificate

The department plays an important and active role in the Latin American Studies Program, an interdisciplinarian interdisciplinary program ranging over the 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 Certificate for Further Information on the Latin-American Studies Program, see Latin American Studies Program” in this section of the Course.

Graduate Programs

Master of Arts in Spanish

Candidates for the M.A. degree must complete a minimum of 36 semester hours of graduate work in Spanish, with a minimum of 30 credits. The program requires a minimum of 36 semester hours for the M.A. degree.

Maximum Study Load

Maximum course registration is 15 graduate semester hours during fall or spring semesters and 9 graduate semester hours during summer session. One-quarter and one-three-time teaching assistant are permitted to register for the maximum study load. One-half-time teaching assistant may register for no more than 12 graduate semester hours in fall or spring semesters, and for no more than 6 quarter-hour hours during summer sessions. Anterior semester hours may be taken only with Graduate College approval.

Transfer Credit

A maximum of 9 semester hours of graduate credit in approved courses may be transferred from other qualifications toward the 36-semester-hour requirement for the M.A. degree.

Teaching Certification

Exemption of student-teaching requirement, graduate students may take the courses necessary for necessary 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 least one course must be in Spanish-American literature. The examination committee is composed of four departmental faculty members.

Doctor of Philosophy in Spanish

Two doctoral programs are available. The first is dedicated to Hispanic literatures. Before the comprehensive examination, candidates must complete the equivalent of three years of college-level study in another Romance language and be well acquainted with its literature in limited areas of specialization (a Portuguese-Brazilian program is especially recommended); complete the equivalent of a year of college Portuguese; and complete one semester of one year of college-level study of another approved foreign language. This language must be Latin for those who will write the dissertation on a pre-1700 topic.

The second doctoral program provides for specialization in Spanish literacy. 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 two years of college-level study of a third approved foreign language.

Program II Literature Track

The following course work is required.

M.A. courses or equivalent transfer credits

A course is taken in a literary, 200 level or above

Two 300-level seminars

Two 300-level seminars

Eight elective courses at the 300 level or the advanced 100 level, no more than three (9.0 h.) of which may be taken outside the department, bringing the total semester hours to the required 72 in the Ph.D. program.

Program II: Linguistics Track

The following course work is required.

M.A. courses or equivalent transfer credits

Department of Linguistics

HSS 110 Articulatory and Acoustic Phonetics

HSS 111 Syntactic Analysis

HSS 112 Phonological Theory and Analysis

HSS 121 Syntactic Theory

One course in advanced Spanish

One course in advanced Spanish phonology

One course in comparative Romance linguistics

Two additional courses in linguistics

Two 300-level seminars in Spanish

Two 300-level seminars in Spanish

Total semester hours required 72 h.
focus on their program of study. Because it affords a broad opportunity to students, the Institute grants them the possibility of tailoring their educational experience. The Ph.D. qualifying examination is a major part of this initiative and is designed to provide in-depth knowledge of specific problems in Hispanic literary criticism or in literary theory. Areas involving Latin American cinema or popular culture may also be included. The candidate is given a wide latitude in formulating the reading lists for these areas according to his or her research and teaching interests.

Literary Track

Contemporary Spanish poetry, a reading list is determined by the student and the advisory committee.

Contemporary Spanish philology, a reading list is determined by the student and the advisory committee.

History of the Spanish language, a reading list is determined by the student and the advisory committee.

Our special area of the candidate's choosing. This area might involve specialization in any one of the three core areas listed above, or it might involve study of a particular topic in comparatist counterpart philology (Spanish, French, German). The candidate is given a wide latitude in formulating the reading list for this area according to his or her research and teaching interests.

Financial Aid

Teaching and research assistantships are available to qualified graduate students. Usually, two years of support are available to complete a master's degree, and three years beyond the receipt of the M.A. for the Ph.D. As long as graduate students' studies and performance meet departmental standards, they will continue to receive support over a reasonable period of time, usually not more than six years. Teaching assistants who seek financial support should apply directly to the departmental office.

Facilities

The Language Media Center provides facilities for language learning, teaching, and research. These include standard and advanced studios, tape recorders, monitor, soundproof recording rooms, two video studios with 35-mm camera equipment, and facilities, videoconferencing facilities, language laboratory, and a range of educational equipment, including a Spanish, French, or German language laboratory. The center also offers a variety of courses and seminars, including courses in advanced language proficiency and an introduction to the French, German, and Spanish language laboratories.

Courses

Spanish—Primarily for Undergraduates

All students are strongly urged to include the Spanish Placement Test, which is designed to assess regular or progress in Spanish. All students at the university are placed in a first-, second-, or third-year-level course. Students with two or more years of high school Spanish are placed in a third or fourth-year-level course. Prospective and entering students should contact their educational advising office. Students who have taken college Spanish at other institutions will be placed according to previous college Spanish. Students may not, except with the department chair's permission, take an elementary course for credit after having completed a higher-level course for which the elementary course or its equivalent is a prerequisite.

Spanish Literature

Speaking the Language of the People

The language spoken by the people of Spain is Spanish. Thus, the study of Spanish is an important part of the cultural and linguistic heritage of the American people.

Elegy for Language

The study of Spanish is an integral part of the study of the Romance languages. It is a language that has been spoken for centuries, and it is a language that is still being spoken today. The study of Spanish is an important part of the cultural and linguistic heritage of the American people.

Introduction to Spanish

A broad view of the Spanish literature, a reading list is determined by the student and the advisory committee.

Two specialized areas of the candidate's choosing. These areas might involve further and more specialized exploration of particular periods, genres, or movements within Spanish-American, and/or Latin-American literary and cultural history, or they might involve in-depth study of specific problems in Hispanic literary criticism or in literary theory. Areas involving Latin American cinema or popular culture may also be included. The candidate is given a wide latitude in formulating the reading lists for these areas according to his or her research and teaching interests.
Requirements
The B.S. or B.A. degree in speech and hearing science requires a minimum of 36 semester hours. The required courses are as follows:

3.15 Introduction to Speech and Hearing Processes and Disorders
3.17 Fundamentals of Speech Science
3.19 Introduction to Hearing Science
3.17 Psycholinguistics
3.18 Language Development
7.14/14.224 Introduction to Statistical Methods
7.15 Psychological Statistics and Inference
3.11 Experimental Psychology
3.13 General Psychology
2.1121 Articulatory and Acoustic Phonetics

Group A
One of the following:
17.108 Basic Aspects of Aging
3.13 Introduction to Clinical Psychology
3.130 Personality
3.139 Psychology of Sex Differences
3.135 Aural Development
3.43 Aging and Society
3.138 Perspectives on Aging
3.135 Aging: A Cross-Cultural Perspective

Group B
One of the following:
Courses marked with an asterisk (*) are prerequisites.
3.14 Introduction to Child Psychology
3.15 Development of Children’s Social Behavior
3.170 Learning and Motivation in Children
3.154 Cognitive Development of Children
3.17 Growth and Development of the Young Child
7.15 Child Development
3.166 Developmental Neuropsychology
3.170 Behavior Modification

Students seeking a bachelor’s degree also must complete a minimum of 20 hours of supervised clinical observation, a prerequisite for clinical conferences. This requirement is satisfied by completion of independent observations or required observations made for elective experimental courses.

Honors
The senior-year program leading to the B.A. or B.S. degree with honors in speech and hearing science is open to students who at the beginning of their senior year have completed at least 10 semester hours of course work that can be counted toward a major in the department, and have earned at least a 3.0 grade point average in all major course work and all course work at the University.

At any time during the undergraduate study, students who have earned a minimum grade-point average of 3.00 and who did not enter the University as honors students may apply to the College of Liberal Arts Honors Program and the department’s honors program upon recommendation of the departmental honors advisor. For graduation with honors, the student must be classified as an honors student in the College of Liberal Arts and must complete both 3.97 Honors Seminar and 3.98 Honors Thesis.

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 placement in clinical or service positions, or it may be a general program of graduate study leading to additional study for the Ph.D. degree. The program of study for M.A. with professional emphasis is designed to ensure that upon graduation the student will meet the requirements for immediate professional employment.

M.A. candidates usually have a background of undergraduate courses in speech and hearing science, psychology of language, and human behavior essentially equivalent to an undergraduate major in this field at The University of Iowa. Before final registering in the program, entering M.A. degree candidates are interviewed by faculty members who teach basic course work in speech, hearing, and language. These interviews are used to determine student background in areas considered prerequisite to graduate study. They provide students and faculty advisers with information on background course work to be incorporated into the plan of study.

The M.A. program with professional emphasis prepares clinicians in speech-language pathology or audiology who are able to function independently in a variety of clinical settings. Persons completing an M.A. program with professional emphasis meet all academic and practicum requirements for clinical certification by the American Speech-Language-Hearing Association and for licensure by the state of Iowa.

The M.A. degree requires a minimum of 38 semester hours of graduate credit. All M.A. students must complete at least 4 semester hours of research methods each year. This may be accomplished by any combination of enrollment in seminars (at 2 semester hours each) and/or research hours. Completion of the research hours registration must consist of work toward a thesis or preparation of a paper involving one or a combination of the following: literature review, project development, and presentation of data. A paper is required in the final week of each semester’s enrollment. An exception to this requirement can be made in the case of research hours leading to a thesis.

Candidates for an M.A. degree with professional emphasis are not required to complete a thesis, although all students demonstrating research ability and interest are encouraged to do so. All candidates preparing for the M.A. degree without thesis are required to take final comprehensive examinations.

A typical M.A. program with professional emphasis is two years in length but may be longer or shorter depending on the student’s background and personal interests.

M.A. with Research Emphasis [General Program]
The general M.A. program for the student intending to continue to the Ph.D. degree usually includes a substantial portion of the courses in the professional M.A. program. Students in the general M.A. program also are required to present a thesis and successfully complete a final oral examination.

M.A. with Professional Emphasis
Core Requirements
All students seeking an M.A. with professional emphasis must take the following:

3.116 Neural Processes of Speech and Language 3 s.h.
3.130 Principles of Assessment 1.5 s.h.
3.135 Principles of Intervention 1.5 s.h.
3.140 Medical Communication 1 s.h.
3.145 Speech-Language Pathology I: Phonological Disorders, Developmental Language Disorders, and Stuttering 1.5 s.h.
3.146 Speech-Language Pathology II: Neurolinguistic Disorders, Voice Disorders, Clin. Pract. and Speech-Language Pathology majors only 1.5 s.h.
3.185 Hearing Loss and Audiology 4 s.h.
3.244 Auditory Electrophysiology 4 s.h.
3.360 Professional Practice of Audiology and Speech-Language Pathology 0 s.h.
3.100 Counseling Theories and Techniques for Related Professions 2 s.h.

3.109 Counseling for Related Professions 3 s.h.

3.510 Seminar in Introduction to Speech and Hearing 2 s.h.
Advanced seminars in various areas of speech and hearing are offered.

3.514 Speech and Language Disorders of Older Children: Five to Eighteen Years 2 s.h.

3.515 Communication Problems Associated with Head and Neck Cancer 1 s.h.

3.516 Neurogenic Disorders of Language 2 s.h.

3.527 Child Abuse and Relational Disorders 2 s.h.

3.531 Computer-assisted Technology for Assistive Communication Systems 1-3 s.h.

3.535 Preceptoralship in Augmentative Communication 1 s.h.

3.536 Issues and Methods of Clinical Research 3 s.h.

3.590 Seminar in Speech Disorders and Aging 2 s.h.

6.114 Honors Methods in Speech and Hearing 2 s.h.

9.155 Voice for the Actor 3 s.h.

Students studying to become speech-language pathologists may elect to follow one of three specialty tracks: speech-language pathology and audiology, two of the tracks provide an especially strong preparation for students preparing to work in specific settings. The schools track offers preparation for speech-language pathologists in preschools, elementary schools, and secondary schools. The hospitals and health agencies track prepares students for work as speech-language pathologist in hospitals, small clinics, and other health-care settings. And the vocology track prepares specialists in disorders of the voice, with emphasis on disorders of professional voice users, such as singers, actors, and lecturers. The requirements and recommended electives for each track are listed below. In addition, practical experiences are structured to fit the needs of students within each track.

**School Track**

**Required**

3.182 Phonological Development and Disorders 2 s.h.

3.183 Stuttering 2 s.h.

3.216 Speech and Language Disorders of Young Children: Birth to Five Years 2 s.h.

3.257 Speech and Language Disorders of Older Children: Five to Eighteen Years 2 s.h.

18.114 Remedial Methods in Speech and Hearing 2 s.h.

Total 10 s.h.

**Recommended**

3.204 Communication Problems of Developmental Disorders and Disabilities 2 s.h.

3.217 Developmental Apraxia of Speech 2 s.h.

3.300 Computer-assisted Technology for Assistive Communication Systems 1-3 s.h.

3.350 Preceptoralship in Augmentative Communication 1 s.h.

**Hospital and Health Agencies Track**

**Required**

3.212 Voice Disorders 2 s.h.

3.211 Community Health Problems Associated with Head and Neck Cancer 1 s.h.

3.233 Neurogenic Disorders of Language 2 s.h.

3.244 Neurogenic Disorders of Speech 2 s.h.

3.247 Child Abuse and Related Disorders 2 s.h.

Total 9 s.h.

**Recommended**

3.182 Phonological Development and Disorders 2 s.h.

3.204 Communication Problems of Developmental Disorders and Disabilities 2 s.h.

3.300 Computer-assisted Technology for Assistive Communication Systems 1-3 s.h.

3.350 Preceptoralship in Augmentative Communication 1 s.h.

3.366 Speech and Language Disorders of Older Children: Five to Eighteen Years 2 s.h.

18.114 Remedial Methods in Speech and Hearing 2 s.h.

5.125 Voice for the Actor 3 s.h.

Vocology Track

**Required**

3.181 Principles of Voice Production 3 s.h.

3.212 Voice Tracking and Rehabilitation 2 s.h.

3.221 Instrumentation for Voice Analysis 2 s.h.

Total 9 s.h.

**Recommended**

3.183 Stuttering 2 s.h.

3.202 Methods of Teaching Voice 3 s.h.

3.203 Communication Problems Associated with Head and Neck Cancer 1 s.h.

3.204 Neurogenic Disorders of Speech 2 s.h.

3.257 Child Abuse and Related Disorders 2 s.h.

5.125 Voice for the Actor 3 s.h.

Audiology Requirements

All students preparing to become audiologists must take:

3.100 Fundamentals of Laboratory Instrumentation 3 s.h.

3.240 Clinical Audiology and Hearing Aides I 4 s.h.

3.241 Clinical Audiology and Hearing Aides II 3 s.h.

3.242 Pediatric Audiology 2 s.h.

Additional placements, research, and electives are encouraged to enhance the student's skills in the field of audiology.

**Requirements for Employment**

A number of states, including Iowa, require a state license in speech-language pathology or audiology for persons who work in settings other than those designated by the National Board for Certified Examiners. Students planning to work as audiologists in a state requiring a license must take TE 104 Remedial Methods in Speech and Hearing along with appropriate practicum experiences.

**Public School Certification**

Students preparing for clinical practice in public schools must meet certification requirements of the states in which they plan to work. The following criteria meet the certification requirements for endorsement as speech-language pathologist or school audiologist in Iowa and other states:

1. A master's degree with professional emphasis in speech-language pathology or audiology.

2. A completion of the requirements for speech-language pathology or audiology and the professional education sequence,
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 M.A. Program

The department bases M.A. admission on applicants' credentials relative to those presented by other applicants for the same term. While an undergraduate grade-point average above 3.00 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. Approximately April 1 for summer session, July 1 for fall semester, November 1 for spring semester. However, applicants who want to be considered for graduate tuition and research assistantship applications by the deadline for assistantships will have applied for admission before February 1. Applicants usually are notified of action on their applications within six weeks after all applications are complete.

Application for Graduate Appointments

The following information applies to all financial appointments administered by the department.

Graduate appointments usually begin only in the fall term. Students beginning study in the spring semester or summer session are considered for appointments for the following fall semester.

Students on the Graduate Record Examination (GRE) in the Test that are routinely reviewed for consideration for financial assistance.
Clinical Facilities

The clinical training program benefits greatly from the fact that Iowa City is the principal health system of the state and from the ready availability of its health service facilities for the clinical training of students in speech-language pathology and audiology.

The University of Iowa Affiliated Speech and Hearing Services includes The Wendell Johnson Speech and Hearing Clinic, the Division of Speech and Hearing in the Department of Otolaryngology—Head and Neck Surgery, Speech Pathology Service in the Department of Neurology, Speech and Hearing Services, University Hospital, School-Pediatrics Regional Child Health Specialty Clinics; Speech Pathology Service, Child Psychiatry, and Audiology and Speech Pathology, Valley Medical Center. Directors of these programs work on behalf of the Council on Speech Pathology and Audiology at The University of Iowa.

The Wendell Johnson Speech and Hearing Clinic is a 24-hour, 7-day per week public facility. Its services are subject to individual payment and a referral system is utilized for general public. Included in its services are subjects conducted under a referral system for speech, hearing, and language problems, and a six-week summer miniseminar program for children. These clinical programs give students supervised clinical experience with a wide variety of speech, hearing, and language disorders.

In addition to the clinical training in the Wendell Johnson Speech and Hearing Clinic, training also may be acquired in supervised clinical practice with elementary school children by arrangement with various Iowa area schools and agencies, and in clinical situations of the speech and hearing services provided by the Departments of Otolaryngology—Head and Neck Surgery, Pediatrics, and Neurology, the Regional Child Health Specialty Clinics, University Hospital, School-Pediatrics Regional Child Medical Center, and St. Luke's Methodist Hospital, Cedar Rapids.

Public and private departments and programs in addition to those mentioned above often contribute to the Cooperative professional training, research, and service programs.

Research Facilities

Facilities in the Wendell Johnson Speech and Hearing Center include audiometric testing suites, diagnostic and remediation booths, equipment for diagnosis and therapy, a closed-circuit television system, and laboratories and equipment for acoustic, physiological, and perceptual studies of speech, and for audiologic, psychoacoustic, and psychophysical studies of hearing. Mechanical and electronic shape and trained technical personnel are available for assistance in research instrumentation.

Cooperation of various departments of The University of Iowa Hospitals and Clinics and the College of Dentistry makes additional laboratory facilities available for research on problems in speech and hearing. The participation and cooperation of graduate students in various fields, including psychology, child development, education, engineering, statistics, and medicine, for the broadening the scope of research activities in speech and hearing.

Courses

3-0-3 Speech Pathology and Audiology 5.0

Cooperative Education Assignment 5.0

Comprehensive internship supervised by the Cooperative Education Program is an integral part of the program at eligible schools. Prerequisites: faculty approval. Satisfactory completion of Cooperative Education Program, credit in course 5.0. Prerequisites: credit in course 5.0.

315 Introduction to Speech and Hearing 3.0

Processes and Disorders 3.0

Speech, language, and auditory behavior as fields of scientific study, assessment of disorders of speech, and their treatment. Prerequisites: enrollment in Program.

315 Introduction to Professional Practice in Audiology 3.0

Focus on the professional practice of audiology and its basic principles. Auditory psychology and its role in hearing disorders. Prerequisites: enrollment in Program. Prerequisites: credit in course 5.0.

500 Hearing Seminar 3.0

Develops, organizes, and evaluates research papers, and discussions. Auditory physiology, psychology, and audiology. Prerequisites: enrollment in Program. Prerequisites: credit in course 5.0.

583 Hearing Hearing 3.0

Principles of a scientific approach to the assessment of hearing disorders. Prerequisites: enrollment in Program. Prerequisites: credit in course 5.0.

500 Speech Pathology and Audiology 3.0

Speech, language, and auditory behavior as fields of scientific study, assessment of disorders of speech, and treatment. Prerequisites: enrollment in Program. Prerequisites: credit in course 5.0.

510 Consulting Therapist and Techniques 3.0

An analysis of the nature of psychological therapies as they relate to assessment and treatment of communication disorders. Prerequisites: enrollment in Program. Prerequisites: credit in course 5.0.

510 Speech Processing of Speech Science 4.0

An analysis of the speech science. Principles of speech science and its application to speech science. Prerequisites: enrollment in Program. Prerequisites: credit in course 5.0.

511 Introduction to Hearing Science 3.0

Normal auditory processes, structure, and function. Physical and psychological aspects of the auditory system. Prerequisites: enrollment in Program. Prerequisites: credit in course 5.0.

513 Neuro Processes of Speech Science 4.0

Brain anatomy and physiology of the central nervous system. An overview of the brain's role in the production and production of speech and language disorders. Prerequisites: enrollment in Program. Prerequisites: credit in course 5.0.

517 Psychology of Hearing 3.0

Theoretical and experimental investigations of linguistic, behavioral, and inferential theories related to normal and abnormal auditory systems. Prerequisites: enrollment in Program. Prerequisites: credit in course 5.0.
Advising

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 visiting with the theatre arts administrative assistant. Faculty advisors also have the right of appointment. 

Presentation in many theatre arts courses requires a special permission signature, which should be obtained from the relevant faculty member, or from the theatre arts office, 107 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-1950. From this audition, callbacks are posted for the subscription series production for the first semester. Audition material and information are available from the theatre arts office, 107 Theatre Building.

Degree Requirements

The following courses comprise the basic experience for all undergraduate theatre arts majors. Students who demonstrate readiness/proficiency for higher level work may apply for advanced standing by notifying their advisor. It is the responsibility of each individual to set their own criteria for evaluation and proficiency 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 2.5 overall grade point average for all coursework taken in the major are required.

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, scenes, directing, playwriting, and theatrical history. The program provides unique opportunities for performance experience and work-integrated activities. Students who demonstrate special aptitude may participate in special emphasis programs such as acting, design, directing, or playwriting.
Theatre Arts Laboratory
All theatre arts students, faculty, and staff
insert each week for guest presentations, discussions, and theatre arts class presentations. Attendance by theatre majors is mandatory.

Special Emphasis Program

**Requirements**
Students who have a special aptitude and readings may seek admission to a special emphasis program. Admission is gained by consultation with the program head, who discusses the features of the emphasis and outlines its requirements. To remain in the emphasis, students must demonstrate their ability to progress satisfactorily through the requisite courses and maintain a 2.0 grade-point average in courses in the major. The emphasis culminates in a senior project presented to the faculty.

**Acting Emphasis**
Head of acting: Eric Forsythe

49-22 Acting I 3 s.h.
49-28 Basic Stage Combat 2 s.h.
49-125 Voice for the Actor 3 s.h.
49-126 Movement for the Actor 3 s.h.
49-121 Acting II 3 s.h.
49-122 Acting IV 3 s.h.
49-145 Stage Makeup 2 s.h.

**Directing Emphasis**
Head of directing: Eric Forsythe

49-118 Directing I 3 s.h.
49-119 Directing II 3 s.h.
49-22 Acting II 3 s.h.
49-114 Contemporary Theatre 3 s.h.
49-126 Movement for the Actor 3 s.h.
49-127 Voice for the Actor 3 s.h.
49-133 Stage Management 3 s.h.
49-28 Basic Stage Combat 2 s.h.

**Design Emphasis**
Head of design: David Thayer

49-63 Elements of Design 3 s.h.
Two of these (total 6 s.h.): 49-32 Icon Design I 3 s.h.
49-135 Costume Design I 3 s.h.
49-136 Lighting Design I 3 s.h.

One of these: 49-135 Costume Design I 3 s.h.
49-136 Lighting Design I 3 s.h.
49-137 Advanced Scene Design 3 s.h.
49-158 Aircraft Costume Design 3 s.h.
49-159 Lighting Design II 3 s.h.

**Playwriting Emphasis**
Head of playwriting:

49-162 Basic Playwriting 3 s.h.
49-167 Advanced Playwriting 3 s.h.
49-22 Acting II 3 s.h.
49-166 Directing I 3 s.h.
Three of these (total 9 s.h.): 49-114 Contemporary Theatre 3 s.h.
49-129 Directing II 3 s.h.
49-162 The Serial 3 s.h.
49-163 Adaptation 3 s.h.
49-145 Playwriting for Other Media 3 s.h.
49-166 Dramaturgy 3 s.h.
49-169 Playwriting: The Credibility 3 s.h.

Final project: a full-length play or its equivalent in shorter works. One five-minute 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 coursework 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 an honors project under the supervision of a faculty member. Projects may be analytical or creative and can be in the form of a thesis or final project. Students wishing to complete an honors project must have at least a 3.0 grade-point average, and must declare their intention to pursue honors by completing a declaration of intent. The Honors Program requires completion of all courses in the major and a minimum grade-point average of 3.0 in all coursework. Students who fail to successfully complete the program will have their qualifications for the degree revoked.

**Minor**
A minor in theatre arts requires 15 semester hours of coursework in theatre arts with a minimum grade-point average of 2.0. Twelve of these semester hours must be in courses numbered 49-100 or above and must be taken in advanced coursework at the University of Iowa. No course in the department—exclusive of 49-100 or above—may be used as advanced coursework.

**Graduate Program**

**Master of Fine Arts**
The M.F.A. program is designed to increase the creative development of the candidate. Graduates have a solid background in major performance theories, dramatic literature, and practical experience and present as well as an in-depth knowledge of their chosen specialties. Special attention is given to understanding the role and importance of live theatre in society. Interactions among the various disciplines of the theatre are explored and the collaborative nature of theatre is emphasized in both class and through the extensive production program.

Students who demonstrate exceptional ability in acting, directing, playwriting, design, technical direction, or production sound 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 regular number of graduate credits or 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. Normal progress is defined as maintenance of a 3.00 grade-point average in all course work attempted and a record of substantial creative work of high quality. Students who fail to make normal progress are placed on academic probation and given one semester 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 theatre complexes in the country. Theatre Buildings 6, 7, 8, and 9 are three theaters and up-to-date facilities for classrooms, laboratory, shop, and performance work.

The E. M. Blake Theatre, a continental-style, 47-seat proscenium playhouse, is one of the finest theaters of its type in the United States. Theatre A, a "black box" or production space, features two flexible backdrops that can accommodate up to 255 people. From this space, students can stage a wide range of plays, from classical to modern, and can also produce original works. Theatre B, an open stage theater, is designed for the production of experimental and innovative works from the Iowa Playwrights Workshop. Theatre C, a 225-seat proscenium theater, is equipped with a state-of-the-art electronic lighting control system and is used for a variety of productions.

In addition to special-classroom facilities and studio space, the "black box" theater is equipped with video, audio, and stage lighting systems, and includes a state-of-the-art electronic lighting control system and sound reproduction systems. The "bellman" lighting system is for the bellman's use and is available to students. The "lighting studio" is equipped with video, audio, and stage lighting systems. It includes a state-of-the-art electronic lighting control system and sound reproduction systems. The "bellman" lighting system is for the bellman's use and is available to students.
treaties. Troops are frequently on the move, and the logistics of moving them can be complex and challenging. The Bahamas also requires the creation of new infrastructure, such as roads and bridges, and the management of natural resources, including water and fisheries.

Graduate Programs

Certificate

No single discipline can supply all of the theories, principles, and methods needed to address the issues of conflict resolution and peacebuilding. To address these challenges, three academic units at The University of Iowa participate in an interdisciplinary program: the Department of Civil and Environmental Engineering, the Department of Geography, and the Graduate Program in Urban and Regional Planning. This program offers a graduate certificate program, which enables students to select courses from these academic units to obtain an additional educational experience.

Degree Programs in Civil and Environmental Engineering

The Department of Civil and Environmental Engineering offers a Bachelor of Science degree in Transportation at the University of Iowa. 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 18 semester hours earned toward dissertation research. A minimum of three years of full-time 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, and operations research. Students are required 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
- 53282 Urban Transportation Planning
- 102260 Transportation Policy and Planning
- 102269 Transportation Program Seminar
- 44234 Methods of Transportation Analysis

Technical elective: 3 s.h.

Second Semester
- 53183 Transportation Systems Analysis
- 102269 Problems in Transportation and Land Use
- 102269 Transportation Program Seminar
- 44236 Travel Demand Modeling

One of the following courses:
- 53199 Research Civil and Environmental Engineering M.S.
- Statistics
- Planning electives

Integrated transportation course: 3 s.h.

Third Semester
- 53199 Individual Investigations: Civil and Environmental Engineering
- 53199 Research Civil and Environmental Engineering M.S.
- Thesis
- Technical elective

102269 Transportation Program Seminar: 1 s.h.

Technical electives are advanced courses in engineering operations research, computer-aided design, or economics. Specific course requirements are sufficiently flexible to conform to a student's graduate schedule and desired areas of specialization. Applications should be made through the Graduate College and the Department of Civil and Environmental Engineering.

Degree Programs in Geography

The Department of Geography offers a Bachelor of Arts and Bachelor of Science degrees with a specialization in transportation systems analysis. The specialization draws on the resources of the College of Engineering, the Graduate Program in Urban and Regional Planning, the Department of Economics, and Geography. The specialization 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 intractability of practical problems.

A typical master's-level program includes the following courses:

First Semester
- 102260 Transportation Planning and Policy
- 102269 Transportation Policy and Planning
- 102269 Transportation Program Seminar
- 44234 Methods of Transportation Analysis

Technical elective: 3 s.h.

Second Semester
- 53199 Research Civil and Environmental Engineering M.S.
- Transportation
- Planning electives

Integrated transportation course: 3 s.h.

Third Semester
- 53199 Individual Investigations: Civil and Environmental Engineering
- 53199 Research Civil and Environmental Engineering M.S.
- Thesis
- Technical elective

102269 Transportation Program Seminar: 1 s.h.

Technical electives are advanced courses in engineering operations research, computer-aided design, or economics. Specific course requirements are sufficiently flexible to conform to a student's graduate schedule and desired areas of specialization. Applications should be made through the Graduate College and the Department of Civil and Environmental Engineering.
### 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 sectorsal 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 decision 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 assigned for the core, the sectoral major constitutes a minimum of 9 semester hours. Students are required to complete the remaining hours. If the thesis option is selected, up to 6 semester hours of sectoral major credit are offered. Students may elect a maximum of 12 semester hours of course work 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 Elective 3 s.h.
  - 102:290 Transportation Policy and Planning 3 s.h.
  - 102:261 Transportation Program Seminar 1 s.h.

- **Fourth Semester**
  - 102:261 Problems in Transportation and Land Use 3 s.h.
  - Three of the following courses:
    - 102:263 Transportation Systems Analysis 3 s.h.
    - 102:265 Transportation Regulation and Finance 3 s.h.
    - 442:206 Travel Demand Modeling 3 s.h.
  - 102:266 Integrated transportation course 3 s.h.
  - Students select the optional transportation course according to individual interest.

- **Elective courses typically include:**
  - 102:234 Project Impact Analysis 3 s.h.
  - 102:236 Capital Facilities Planning and Finance 3 s.h.
  - 102:286 Economic Development Policy 3 s.h.
  - 102:287 Development Finance 3 s.h.

- **Application** should be made through the Graduate College and the Graduate Program in Urban and Regional Planning.

### UNIFIED PROGRAM

- Coordination: Philip C. Kadetsky
- Faculty: Stowarsz Deluga (English), Miriam Gilbert (English), Max Wimmer (American World Studies), Sydney V. Jones (History), Philip C. Stolz (Mathematics), Eugene W. Madison (Mathematics), Doug Mader (Statistical Science), Oswald G. Marsh (English), Hoyt H. Lanning (History), Dennis M. Moore (Economics), Donald Frieder (Chemistry), William Resig (Political Science), Robert Roberts (Astronomy), Rebecca Ragland (History), Richard Lushin (Biology)

Unified Program (UP) is a four-semester series of integrated general education courses for a small group of students who begin their 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 version A must be eligible for 102:290; students in version B must be eligible for 103:285. Typical student in UP takes 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: 103:285 Humanities I 3 s.h.
  - 140:402 Public I 3 s.h.
  - 140:155 Rhetoric 4 s.h.
  - Spring semester: 103:285 Humanities II 4 s.h.
  - 140:402 Public II 3 s.h.
  - 140:50 Basic Mathematics 4 s.h.

### Sophomore Year

- Fall semester: 140:402 Humanities III 4 s.h.
  - 140:402 History I 3 s.h.
  - 140:57 General Chemistry I 3 s.h.
  - Spring semester: 140:402 Human Biology 4 s.h.
  - 140:50 History II 3 s.h.

### Version B

- **Freshman Year**
  - Fall semester: 140:70 UP Science Seminar 1 s.h.
  - 140:402 Rhetoric I 4 s.h.
  - 140:86 Calculus 4 s.h.
  - *Natural sciences elective 3-4 s.h.
  - Spring semester: 140:70 UP Science Seminar 1 s.h.
  - 140:73 Interpretation of Literature 3 s.h.
  - *Natural sciences elective 3-4 s.h.

### Courses

- Course 140:402 Humanities I satisfies 101A. The Interpretation of Literature, which is required for the General Education Requirement in the humanities.
- Course 140:402 Humanities II satisfies 101B. Development of major ideas about the human being and society in Western civilization, philosophy, and literature.
- Course 140:402 Humanities III satisfies 101C. An introduction to the theory of knowledge, science, and society.
- Course 140:402 Humanities IV satisfies 101D. The development of rhetoric, as seen through art, architecture, music, literature, and science. Includes the study of Greek and Roman literature and culture.
- Course 140:402 Humanities V satisfies 101E. An introduction to the political behavior of individuals and to political behavior as it is conducted by and between nations and among individuals, societies, and states.
- Courses 140:402 Humanities VI and 140:402 Humanities VII satisfy 101F. An introduction to the world of economics and to the history of economic thought.
- Course 140:402 Humanities VIII satisfies 101G. A brief survey of world history and the arts of ancient and modern time, beginning with cave paintings and primitive literature and ending with the modern world.
- Course 140:402 Humanities IX satisfies 101H. An introduction to the world of art and of the arts of the Western world, from cave paintings to modern architecture.
- Course 140:402 Humanities X satisfies 101I. An introduction to the world of religion and its influence on the world of ideas and on society, as well as to the study of religious and ethical thought.
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 services 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 need for a body of knowledge within 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 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 bring to each other 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, history, history, classics, and philosophy. Usually, about one-third of the program's 40 to 50 graduate students are women. Large enough to ensure 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

The planning curriculum is a 48-hour semester (plus internship) program encompassing two academic years. It includes 27 semester hours of core courses, 9 semester hours of sectoral major courses, and 12 semester hours of free electives.

The curriculum is based on the philosophy that planners must develop both theoretical and analytical skills that permit them to analyze social problems and evaluate public policies, as well as the professional skills (e.g., report writing, presentations, time management) that allow them to function 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 institutions—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 year are derived primarily from traditional disciplines—particularly economics and statistics. Together with an introduction to the theories and practice of planning. As students proceed through the core, increasing reliance is placed on the development of critical judgment and skill in the application of theory through realistic planning problems and actual case studies. Students may request a waiver of a core course on the basis of previous coursework.

Courses in the core curriculum are as follows:

First Semester

R223 History and Theories of Planning 3 s.h.
R225 Economics for Policy Analysis 3 s.h.
R229 Introduction to Analytic Methods 3 s.h.
R222 Intermediate Analytic Methods 3 s.h.

Second Semester

R224 Public Policy Making 3 s.h.
R229 Economics for Policy Analysis 3 s.h.
R221 Intermediate Analytic Methods 3 s.h.

Third Semester

R226 Writing Law and Legislation 3 s.h.

Fourth Semester

R225 Field Problems in Planning 3 s.h.

The Sectoral Major

The second year of the program is directed toward development of an area of concentration, termed a sectoral major, by building on the concepts and skills developed in the core by applying them to a specific problem area. Students fulfill the sectoral major requirement by completing 9 semester hours of credit in courses offered in the planning program and by other departments and schools of the University. Currently, there are five sectoral majors supported by course offerings and faculty.
Joint Programs

Law

The Urban and Regional Planning Program and the College of Law cooperate in administering a program that satisfies the degree requirements leading to an M.A. in planning and a J.D. in law. The program usually requires four years to complete, a reduction of one academic year from the total requirements of the two programs taken separately. It may be completed in less time if the student chooses the accelerated law program. Separate admission to each academic unit is required.

Law is the major component of the joint degree programs. Students in the planning and law programs 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 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 those actions. They are involved in diverse fields such as public transit, low income housing, neighborhood preservation, environmental protection, infrastructure financing, city management, 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 four 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 cross-disciplinary 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 before the time when they are completing the B.S.E. degree requirements.

The curriculum is based on the philosophy that planners must develop the theoretical and analytical skills that permit them to identify issues and recommend alternative ways of resolving them. 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 citizen involvement.

At the heart of the University of Iowa planning program is an integrated core curriculum. Its purpose is to provide a rigorous foundation for the analysis of public and social issues. The core program is completed by engineering students in the last two years of the undergraduate program. Sectional majors (areas of concentration) are organized around public policy problems. They include transportation, housing and community development, environmental quality, urban infrastructure, and economic development. Students fulfill the sectional major requirement by completing 9 semester hours of enrolment 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 adviser from engineering and one from planning. During the first four years of the program, students work primarily with their engineering adviser and the assistant to the dean of the College of Engineering. For the fifth year, students work with their graduate planning adviser.

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 Graduate College. This option results in an M.A. in planning and an M.S. in preventive medicine and environmental health. Graduates of the program can find employment in the public health field, with government agencies, consulting services departments, or as health or environments' planners.

A total of 60 to 62 semester hours of credit is required; the two 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.
Financial Aid
Students in the Urban and Regional Planning Program receive several kinds of financial support: fellowship scholarships, program, teaching or research assistantships, contract or grant-funded research assistantships, and internships in local agencies. All but scholarship programs typically require ten hours of work per week under the direction of a faculty member or professional planning staff. Students initiate applications for public support, and awards are made on the basis of need, experience, and interest. The planning program has been successful in providing support to 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 Exam (GRE) General Test scores (verbal, quantitative, and analytical), letters of recommendation, and students' academic records.

Applicants should submit the following hue, GRE General Test scores, letters, and statement early in the spring for fall admission (although applications are still accepted until July 15), or by December 15 for spring admission. Fall admission is preferred.

Courses
100.00 Cooperative Education Internship 3.0 h.
100.01 Introduction to Planning and Policy Development 3.0 h.
100.02 Transportation Analysis 3.0 h.
102.03 Analysis and Planning for Urban Renewal and Revitalization 3.0 h.
102.04 Environmental Impact Assessment 3.0 h.
102.05 Methods of Transportation Analysis 3.0 h.
102.06 Urban Transportation Planning 3.0 h.
102.16 Winter and the City 3.0 h.
102.17 Urban Policy Analysis 3.0 h.
102.18 Urban Planning and Design 3.0 h.
102.19 Urban Planning and Design 3.0 h.
102.20 Urban Planning and Design 3.0 h.
102.21 Urban Planning and Design 3.0 h.
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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 financial assistance 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. McGladrey 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 one or two of the College of Liberal Arts at The University of Iowa or at another institution and usually enter the College of Business Administration as juniors.

The college's B.B.A. curriculum requires 120 semester hours of course work, with at least 48 semester hours in business courses and at least 60 in non-business 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 to the College of Business Administration and at least half of the semester hours of credit in the student's major must be earned at The University of Iowa.

Nonresidential instruction includes courses work at colleges and universities other than The University of Iowa and all work by correspondence, including University of Iowa Graduate Correspondence Study courses.

To graduate, B.B.A. candidates must have at least a 2.0 grade-point average in all college course work, an overall 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, 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 in equivalents:

- Rhetoric 101 and 102, or 103 4-8 s.h.
- 222:17 and 222:8 Quantitative Methods I and II 6 s.h.
- 222:25, 222:26, and 222:120 6 s.h.
- EJ:1 Principles of Microeconomics 3-4 s.h.
- EJ:2 Principles of Macroeconomics 3-4 s.h.
- EJ:1 Introduction to Financial Accounting 3 s.h.
- 62:1 Managerial Cost Accounting 3 s.h.
- Natural science (excluding math) 3 s.h.
- Foreign culture and culture 0.5 s.h.
- World languages (excluding IG:1 Interpretation of Literature) 6 s.h.
- Social sciences (excluding EJ:1 and EJ:2) 6 s.h.
- Computer analysis 60:7, 22:7, 22:9, or 22:100 3 s.h.
- 66:7 Statistical Analysis 3 s.h.
- ED:1 Introduction to Law 3 s.h.
- 61:100 Administrative Management 3 s.h.
- 61:100 Introductory Financial Management 3 s.h.

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 (18 s.h.) numbered above 100, including at least four of these: 61:113 Taxes and Business Decisions 3 s.h.
- 61:113 Microeconomics 3 s.h.
- 61:113 Intermediate Financial Management 3 s.h.
- 61:113 Personnel Management 3 s.h.
- 61:113 Individual Behavior in Organizations 3 s.h.
- 61:113 Information Systems 3 s.h.
- 61:113 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 100 level and on all business courses numbered above 100. Students in this major may not take business courses numbered above 100 pass/fail.

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 adviser 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 final 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 numbered 100 or above. The University of Iowa. A grade-point average of at least 2.0 is required for the minor and on all of these courses taken at Iowa. Courses for the minor may also be taken P/N.

- A computer programming course 3 s.h.
- Business calculus (222:11, 222:35, or 222:35) 3-4 s.h.
- Statistics (222:8, 222:120) 3-4 s.h.
- EJ:1 Principles of Microeconomics 3-4 s.h.
- EJ:2 Principles of Macroeconomics 3-4 s.h.
- 61:100 Introductory Financial Management 3 s.h.
- 61:100 Introductory Financial Accounting 3 s.h.
- 61:204 Managerial Cost Accounting 3 s.h.
- ED:1 Introduction to Law 3 s.h.
- 61:100 Administrative Management 3 s.h.
- 61:100 Introductory Financial Management 3 s.h.

"Must be taken in junior or senior year. Students who have completed all prerequisite or the minor in business administration when they graduate should indicate a business minor on the application for degree card, which is filed at the Registrar's Office early in the student's final semester."
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 courses taken 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 course requirements, and have a grade-point average of at least 2.5 on a 4.0 scale. Students must also meet the enrollment requirements in mathematics, science, and English. Application deadlines are 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
- College work completed
- Course work in mathematics, science, and English
- Pattern of grades over time
- Other factors relevant to predicting success in the college

Pass/Nonpass

At the end of each semester, students in classes for which the consent of the department is required will be awarded a pass or nonpass. Courses in which students receive a pass will not figure in the computation of grade-point averages. Courses in which students receive a nonpass will figure in the computation of grade-point averages.

Credit and Grading

Students may earn up to 32 semester hours of credit by examination. Tested 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 core courses and general education requirements of the college. Information on the CLEP examinations is available from the Learning Center, 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 five weeks of the semester or first one and one-half weeks of the summer session with approval of the adviser and instructor. Courses may be dropped during the first five weeks of the semester or first five weeks of the summer session with approval of the adviser 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

At the end of each semester, students in classes for which the consent of the department is required will be awarded a pass or nonpass. Courses in which students receive a pass will not figure in the computation of grade-point averages. Courses in which students receive a nonpass will figure in the computation of grade-point averages.

Second-Grade-Only Option

This option is not available to students admitted to the college for spring 1990 or thereafter.

Students admitted to the college prior to spring 1990 may elect to repeat a course with the consent of the department. The student must complete 60 semester hours to be an undergraduate at The University of Iowa. Students in all these courses must complete 60 semester hours that must be completed prior to the final registration.
prerequisite Regression voids the possibility of the second-grade-only option. For students admitted to the University prior to summer session 1987 and to the college before spring semester 1988, this option may be applied to a maximum of 16 semester hours of course work.

For students admitted to the University for summer session 1987 and to the college before spring semester 1988, this option is limited to a maximum of three courses.

The second-grade-only option is applicable only to courses taken both terms at The University of Iowa for a standard letter grade. It may be used only once per course.

Students who want to use the second-grade-only option rule should enroll in the usual manner for the course they deviate to repeat, or add it during the regular period for adding courses (the first three weeks of the semester). They must declare their intent 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 third week of the semester (or first one and one-half weeks of the summer session). Liberal arts proficiency majors must adhere to second-grade-only option procedures and deadlines set by the Liberal Arts Office of Academic Programs, 166 Schaeffer Hall.

Under the provisions of this option, the registrar marks the permanent record to show that the course was repeated. Both grades remain on the permanent record and both may be used in computing the grade point average. However, only the second course taken is used in calculating the grade point average and hours earned.

The standard procedure of counting both grades in instances where students repeat a course is recommended for all students following 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 2.50: all course work undertaken at The University of Iowa, all business coursework undertaken at The University of Iowa, all course work taken to satisfy requirements for the major, and all coursework taken at The University of Iowa to satisfy requirements for the major. When all of the above-grade-point-average rules equal or surpass 2.80, students are removed from probation. Usually, students are allowed only one semester to return to good 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 academic performance. While probationary period voluntarily proceeds 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 standing or permission 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 enables study of international business and economics, international marketing and institutional, a foreign language, and related area studies.

It has been designed not only for undergraduate students who intend to pursue careers in international business but for any undergraduate interested in gaining a better understanding of the global economy and a breadth of awareness of the political, historical, and social environment in which international business operates. The range of electives in the program permits students to tailor areas of specialization suited to their individual interests and to complement majors in both liberal arts and business administration.

Completion of requirements results in the issuing a "Certificate in International Business" on the student's transcript. Questions 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 22 semester hours of course work (other than language) for the certificate at The University of Iowa or approved study-abroad programs. A course may not be used to satisfy more than one certificate requirement.

Requirements

International Business

1. Principles of Microeconomics
2. Principles of Macroeconomics

These courses in international business international relations and institutions

Two courses in international relations and institutions

Foreign Language and Related Area Study

Two to three years of college-level work (4 equivalent) in one of the following: language, 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 interdepartmental graduate programs are offered in the College of Business Administration: Master of Arts (M.A.) 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 and administrative careers in the business or public sector. The program enhances students' career opportunities and provides the commercial and general skills needed for professional positions in a complex, modern economy.

The curriculum is designed to prepare students for graduate studies in the graduate programs of the business college of the University of Iowa. Previous courses in business are not required for admission. Depending on the student's undergraduate academic background, 30 to 60 semester hours are required. Some of the ten (ten) courses may be waived on the basis of transfer credit or equivalent course work of high quality taken as part of an undergraduate degree program. A minimum of 28 semester hours of 200-level course work must be completed in residence at The University of Iowa after admission to the M.B.A. program.

Accelerated Professional Track

Highly qualified undergraduate students in the Colleges of Liberal Arts or Engineering at The University of Iowa may be admitted to the Accelerated Professional Track (APT) program toward the M.B.A. degree. These
Off-Campus M.B.A.

Courses are offered during evening hours in Chicago, Tulsa, and the Quad Cities. This program is sponsored jointly by the College of Business Administration and the Division of Continuing Education. In Chicago, these courses are offered in consultation with the Continuing 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 one course 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, for Executive M.B.A., also leads to the Master of Business Administration degree. Admission is limited to experienced executives who wish to broaden their management skills without interrupting their professional careers. Course work is presented in two academic years. Classes begin with one full-week in Iowa City followed by classes one day a week on alternating Fridays and Saturdays. Participants graduate through the program together as a single group. Enrollment is limited to 50 students per year.

M.B.A. in Business Administration

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 for full or part-time study and is flexible, providing specialization according to student interests and objectives. Students may select a major in finance, management and organizations, or 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.B.A. program must satisfy the common body of knowledge requirement of the American Assembly of Collegiate Schools of Business (AACSB). This means that candidates' undergraduate or graduate course work must include study in accounting, mathematics, organizational behavior, management, finance, marketing, and the economic and legal environment pertaining to profit and nonprofit organizations.

Requirements for the M.A. degree with emphasis in the following:

Major area 9 s.h.
Minor area 6 s.h.
Economic theory and organizational behavior 6 s.h.
Electives 6 s.h.
Thesis 3 s.h.
Total 30 s.h.

Requirements for the M.B.A. degree without thesis include the following:

Major area 12 s.h.
Minor area 5 s.h.
Economic theory and organizational behavior 5 s.h.
Electives 7 s.h.
Research methodology 3 s.h.
Two research reports 2 s.h.
Total 35 s.h.

In either program at least 16 semester hours of course work must be taken at the 200 (graduate) level. Additional course work 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.

In the thesis program the thesis is expected to satisfy the normal oral examination and may be required to take a written and/or oral comprehensive examination covering course work. A final oral examination is required in the nonthesis programs.

A nonthesis M.A. degree in management and organization is also available. Its requirements, which vary somewhat from those of the M.A., without thesis in other departments, are as follows:

Major area 18 s.h.
Research courses 12 s.h.
Business electives 6 s.h.
Research methodology 3 s.h.
Two research reports 2 s.h.
Total 35-41 s.h.

*Minimum—a total of 6 semester hours may be waived with appropriate undergraduate preparation. The 35-41 semester hour total 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 in academic institutions. The program is flexible, permitting students to specialize in a major area of specialization, subject to approval by their advisors. Students are required to take courses and conduct research in their interests. Sufficient course work and minor specialization 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 prerequisite (as 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 core 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 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 non-profit organizations.

Core Courses

Core courses are designed to develop competence in research and to provide necessary background for study in more specialized courses. Coursework are required as follows: (i)� additional sciences (3 semester hours), economics (2 semester hours), issues in scientific inquiry (3 semester hours), and research methods/statistics/quantitative analysis (12 semester hours). To reflect the depth and breadth of individuals’ experiences, doctoral candidates could design coursework to establish satisfactions of core requirements.

Major Area of Study

A minimum of 12 semester hours of applicable coursework must be completed in one of the following areas: accounting, finance, human resource management, industrial relations, insurance, management science, marketing, or organizational behavior.

Minor Area of Study

A minimum of 9 semester hours of additional coursework beyond the Ph.D. core course requirements must be taken. Available areas will be: major areas of study listed 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 make up of a minimum of three faculty members. Upon satisfactory completion of the written comprehensives, examinees 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 attended by dissertation committee members and open to interested faculty and graduate students as established by departmental procedures. Students are required to complete 15 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 also is open to other interested faculty and graduate students.

Admission

Applicants seeking admission to graduate study in business must submit the Graduate College application form and fee, official transcripts of all graduate and undergraduate coursework, and official Graduate Management Admission Test (GMAT) scores to the Office of Admissions in Cohn Hall; three letters of recommendation from former instructors or employers should be submitted to the Academic Programs Office, College of Business Administration.

Graduate Record Examinations (GRE) Aptitude Test scores may be included 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, Columbia Hall, The University of Iowa, Iowa City, Iowa, 52242.

A complete application requires the following:

A completed application form and fee submitted to the Office of Admissions, Columbia Hall, The University of Iowa, Iowa City, Iowa 52242.

Official transcripts of all undergraduate and graduate work submitted to the Office of Admissions by regular mail.

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 applicants (for whom English is not the primary language) must submit an official score of TOEFL or 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) January is the latest acceptable GMAT test date.

July 1—U.S. citizens and permanent residents applying for fall (August) enrollment June 1 is the latest acceptable GMAT test date.

November 15—U.S. citizens and permanent residents applying for spring (January) enrollment. October is the latest GMAT test date.

M.A. in Accounting or Business Administration (Summer, Fall, and Spring Entrance)

February 1—Foreign applicants applying 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)

January 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 or fall enrollment. Application received by February 1 receives priority for financial aid.

October 1—Foreign applicants for spring.

October 1—U.S. citizens and permanent residents applying for spring enrollment.

Joint Programs

Joint program allows students to pursue concurrently an M.A. or M.B.A. Ph.D. in the College of Business Administration and a J.D. in the College of Law, an M.A. in library and information science in the School of Library and Information Science, or an M.A. in nursing in the College of Nursing, or an M.A. in hospital and health administration in the College of Medicine. Such programs allow students to earn both degrees more rapidly by counting a portion of their graduate course work toward both.
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 computer laboratories, study rooms, a computer lab, an auditorium, the Business Library, and a wide range of classroom facilities.

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 cutting-edge 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.

Financial Markets Institute
The Financial Markets Institute has two primary objectives. The first is to disseminate research and professional knowledge about the operation of financial markets to the academic and financial communities. The second is to support basic research that investigates the relationships between 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 local focal 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 feasibility of a market, producing two forms of financing statements, and writing the business plan.

Institute for Manufacturing Productivity
The Manufacturing Productivity Center facilitates cost-competitive arrangements with Iowa manufacturing firms. The agreements enable business faculty and graduate students, working with the firm's managers and engineers, to jointly address ways to improve manufacturing productivity.

B. McGladrey Institute for Accounting Research
The 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 1979 to provide management assistance without charge to small business owners and persons interested in starting small businesses. 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 Placement and Professional Development, 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

0200 Cooperative Education Internship 0-18
0205 Cooperative Education Internship 0-18
0697 Research Project 0-18
0892 Honors Research Project 0-18
0899 Undergraduate Honors Seminar 1-18
0900 Graduate Research Project 0-18
1999 Research in Business Administration 1-18

For M.B.A. Students
See individual departmental listings for additional M.B.A. course requirements.

0200 Cooperative Education Internship 0-18
0892 Honors Research Project 0-18
1999 Research in Business Administration 1-18

Survey of current practice and thought regarding issues relating to an area in its economic, social, and political context.
Professional Program

The professional program in accounting at The University of Iowa is a three-year, three-division graduate program that leads to a Master of Science (M.S.) degree with a major in accounting. The professional program helps students develop technical proficiency and the conceptual, managerial, and communication skills required in the accounting profession. It is designed to prepare candidates for careers in all areas of accounting; to help students prepare for obtaining leadership roles in the field of accounting; and to help students who wish to undertake an undergraduate-level preparation program. It may also provide the basis for completing the first two years of the professional program. The M.S. degree is awarded at the end of the first two years of the program and the M.A. is awarded at the end of the third year for those students who meet the requirements.

Students may apply for admission to the professional program after completing the second year of the professional program. Students who complete the first two years of the professional program have a higher likelihood of being admitted to the College of Business Administration and of the accounting department. Students who apply for admission to the professional program must have a bachelor's degree with a major in accounting and a minimum GPA of 3.0. They must also have completed a course in introductory accounting and a course in intermediate accounting.

As a first condition for completion of the professional program in accounting, a three-year program, students must pass an oral examination. All candidates for the M.S. degree are required to submit a research proposal and to submit their research proposal in question: what is the focus of the research? In order for the research proposal to be accepted, it must be submitted to the Graduate School of Business Administration. The research proposal must be approved by the department head and the Graduate School of Business Administration. The research proposal must be approved by the department head and the Graduate School of Business Administration.

Program I

This program is for students completing their 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 60/300 Computer Analysis and 60.71 Statistical Analysis;
- Exceeded grades of A or B in 60.4 A Financial Accounting and 60.5 Management Cost Accounting, or the equivalent;
- Completed advanced requirements of the professional program, including a minimum of 30 graduate-level courses.

The first, second, and third-year requirements of the professional program are shown below, together with the semester in which they typically are taken.

First Year

Fall Semester

60.31 Financial Accounting I 3 s.h.
60.30 Management Accounting 3 s.h.
B.A., common requirements or electives 12 s.h.

Spring Semester

60.41 Introduction to Taxation 3 s.h.
60.32 Financial Accounting II 3 s.h.
60.16 Advanced Accounting Models 3 s.h.
B.A., requirements or electives 6 s.h.

Second Year

Fall Semester

60.150 Accounting for Management Analysis and Planning 3 s.h.
60.144 Auditing 3 s.h.
60.103 Microeconomics 3 s.h.
B.A., requirements or electives 6 s.h.

Spring Semester

60.30 Management Accounting 3 s.h.
60.31 Financial Accounting I 3 s.h.
60.310 Advanced Accounting Models 3 s.h.
B.A., requirements or electives 6 s.h.

ACCOUNTING

Hi, welcome. I'm Leslie. I'm a professor at the University of Iowa. I'm here to help. I'm a professor at the University of Iowa. I'm here to help. I'm a professor at the University of Iowa. I'm here to help.
Spring Semester
6A.465 Financial Accounting III 3 s.h.
6A.466 Business Policy 3 s.h.
6A.468 Law and Business 3 s.h.
R.B.A. requirements or electives 6 s.h.

Third Year
These courses are available upon admission to the third year of the program. At a minimum, students shall pursue the following courses. The total number of credit hours must include a minimum of 12 credit hours at the 200-level accounting course, including 6A.220 and 6A.221, and 15 semester hours of graduate electives.

Fall Semester
6A.220 Accounting Theory I 3 s.h.
6A.221 Accounting Information Systems (or elective) 3 s.h.
6A.225 Auditing and Regulation of Accounting Practice (or elective) 3 s.h.
6A.226 Advanced Tax Accounting for Graduate Students (or electives) 3 s.h.
Electives 6 s.h.

Spring Semester
6A.221 Accounting Theory II 3 s.h.
6A.222 Research in Taxation (or electives) 3 s.h.
6A.223 Internship (or elective) 3 s.h.
Electives 6 s.h.

Program 2
This program is for students who have earned bachelor's degrees with a major field in accounting or other related areas. To enter this program, students must submit an application for the M.B.A. program to the Graduate Admissions Office, 116 College Hall, Temple University. They usually are considered for admission during the third year of the professional program (program 1) above, to complete the M.B.A. degree.

Program 3
This program is for students who have bachelor's degrees with no prior training in business or accounting. An individual program is developed for each student at the time of admission.

With careful planning, students can complete the professional program in accounting in two to four semesters after being admitted to the Graduate College. Temple's undergraduate planning office will help students plan their program. The program should include as many six-hour courses in the undergraduate program as possible. Students earning in the last semester with no previous accounting or business courses work typically take the following courses during their last year.

Spring Semester
6A.115 Introduction to Taxation 3 s.h.
6A.115 Financial Accounting I 3 s.h.
6A.148 Law and Business 3 s.h.
6A.190 Consumer and Firm Behavior—M.B.A. 3 s.h.
6A.191 Financial Accounting—M.B.A. 3 s.h.

Graduate Program
Doctor of Philosophy
See "Interdepartmental Graduate Programs" in the College of Business Administration-Interdisciplinary section of the Catalog.

Courses
Primarily for Undergraduates
6A.200 Cooperative Internship 6 s.h.
6A.202 Introduction to Financial Accounting 3 s.h.
6A.212 Advanced Accounting I 3 s.h.
6A.220 Accounting Theory I 3 s.h.
6A.221 Accounting Theory II 3 s.h.
6A.222 Research in Taxation 3 s.h.
6A.223 Internship 3 s.h.

For Undergraduates and Graduates
6A.115 Introduction to Taxation 3 s.h.
6A.120 Financial Accounting I 3 s.h.
6A.148 Law and Business 3 s.h.
6A.190 Consumer and Firm Behavior—M.B.A. 3 s.h.
6A.191 Financial Accounting—M.B.A. 3 s.h.
6A.133 Tax and Business Ethics 3 s.h.
6A.142 Introduction to Financial Accounting 3 s.h.
6A.212 Advanced Accounting I 3 s.h.
6A.220 Accounting Theory I 3 s.h.
6A.221 Accounting Theory II 3 s.h.
6A.222 Research in Taxation 3 s.h.
6A.223 Internship 3 s.h.

Primary for Graduates
6A.220 Cooperative Internship 6 s.h.
6A.222 Introduction to Financial Accounting 3 s.h.
6A.223 Internship 3 s.h.
6A.224 Research in Taxation 3 s.h.
6A.225 Auditing and Regulation of Accounting Practice 3 s.h.
6A.226 Advanced Tax Accounting for Graduate Students 3 s.h.
6A.227 Graduate Accounting electives 3 s.h.

Graduate Program
Doctor of Philosophy
See "Interdepartmental Graduate Programs" in the College of Business Administration-Interdisciplinary section of the Catalog.

Courses
Primarily for Undergraduates
6A.200 Cooperative Internship 6 s.h.
6A.202 Introduction to Financial Accounting 3 s.h.
6A.212 Advanced Accounting I 3 s.h.
6A.220 Accounting Theory I 3 s.h.
6A.221 Accounting Theory II 3 s.h.
6A.222 Research in Taxation 3 s.h.
6A.223 Internship 3 s.h.

For Undergraduates and Graduates
6A.115 Introduction to Taxation 3 s.h.
6A.120 Financial Accounting I 3 s.h.
6A.148 Law and Business 3 s.h.
6A.190 Consumer and Firm Behavior—M.B.A. 3 s.h.
6A.191 Financial Accounting—M.B.A. 3 s.h.
6A.133 Tax and Business Ethics 3 s.h.
6A.142 Introduction to Financial Accounting 3 s.h.
6A.212 Advanced Accounting I 3 s.h.
6A.220 Accounting Theory I 3 s.h.
6A.221 Accounting Theory II 3 s.h.
6A.222 Research in Taxation 3 s.h.
6A.223 Internship 3 s.h.

Primary for Graduates
6A.220 Cooperative Internship 6 s.h.
6A.222 Introduction to Financial Accounting 3 s.h.
6A.223 Internship 3 s.h.
6A.224 Research in Taxation 3 s.h.
6A.225 Auditing and Regulation of Accounting Practice 3 s.h.
6A.226 Advanced Tax Accounting for Graduate Students 3 s.h.
6A.227 Graduate Accounting electives 3 s.h.

Graduate Program
Doctor of Philosophy
See "Interdepartmental Graduate Programs" in the College of Business Administration-Interdisciplinary section of the Catalog.
Graduate Programs

Master of Arts
The Master of Arts is offered only to students working toward a Ph.D. degree or to those who wish to pursue a nonthesis, non-degree, or joint M.A.-J.D. with law.

Joint M.A.-M.P.

The department collaborates with the Department of Geography in a joint M.A. degree and with the College of Law in a joint M.A.-J.D. degree. In these programs the economics department accepts up to 9 semester hours of course work from the other departments as credits toward the M.A. degree in economics, and the other departments accept graduate study in economics toward their degrees.

Doctor of Philosophy

The Ph.D. program is designed to provide rigorous training in microeconomic theory, macroeconomic theory, mathematical economics, and econometrics. In addition, students under a major area for intensive study and specialization. The program has three components: a coordinated sequence of core courses, a set of major area courses, and a dissertation.

Core Sequence
First Semester
EE 190 Mathematics for Economists I
EE 202 Microeconomics I
EE 204 Macroeconomics I
Second Semester
EE 203 Microeconomics II
EE 206 Macroeconomics II
Third Semester
EE 211 Mathematical Economics I
EE 222 Macroeconomics II
Fourth Semester
EE 222 Applied Econometrics
An additional 3 semester hours in economic theory, economic thought, or economic methodology are required.

Written examinations in microeconomics and macroeconomics before the second year and a substantial research paper before the beginning of the third year complete the core requirements.

Field Courses
Each student chooses a major area of study in addition to the core courses. The major area is a minimum of 24 semester hours of intensive study in a field and in courses that enable students to understand the relationship between their specialty and related fields. Students must achieve a grade point average of 3.20 in the major areas.


ECONOMICS

Chair: George H. Newbert

Research Assistant: Anthony Constanzer

American economists: Michael Fark, Raymond Rasmussen, and John Bowers, Charles Whiteman

Assistant professor: Andrew Ennis, Sathyajit Chakravorty, Richard Giffey, Beth Lyman, Stephen McCoubrey, Robert K. Mosher, Richard Zacher

Undergraduate degrees offered: B.A., B.S., M.A. in Economics

Graduate degrees offered: M.A. Ph.D. in Economics

Economics is concerned primarily with analysis and description of the production, distribution, and consumption of goods and services in society. Its methods include the systematic study of topics such as wealth and poverty, scarcity and savings, income and consumption, government expenditures and taxation, property and exchange, inflation and unemployment, big business and labor unions, and hundreds of other matters that intelligently affect the way people live.

The purpose of studying economics is to develop an understanding of how complex economic systems work and to forego training in the methods of economic analysis, which can be applied to a wide range of economic problems. The independent offers courses to meet the needs of the student as well as the major.

Undergraduate Programs

The bachelor programs in economics provide an excellent educational background for a variety of positions in business and government. Graduates find employment in banking, financial institutions, industrial firms, and trade organizations, and in federal, state, and local government agencies dealing with economic policy, regulation, and analysis. Economics is also regarded as excellent preparation for law and for graduate study in law. In both, it offers the training, business, journalism, economic, political science, and sociology.

The department offers three undergraduate degrees in economics—the B.A. and B.S. degrees in the College of Liberal Arts and the B.A. in the College of Business Administration.

The B.A. and B.S. programs are designed for a well-rounded liberal arts education. Requirements for the B.A. degree include emphasis in the business fields of accounting, finance, marketing, statistics, law, and management.

For descriptions of the B.A. and B.S. degree programs in economics see "Economics in the College of Liberal Arts section of the Catalog."
MANAGEMENT AND ORGANIZATIONS

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

- Industrial 150: Protective Labor Legislation 3 s.h.
- Industrial 153: Collective Bargaining 3 s.h.
- Industrial 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

- Industrial 161: Individual Behavior in Organizations 3 s.h.
- Industrial 162: Group Behavior in Organizations 3 s.h.
- Industrial 163: Organizational Design and Operation 3 s.h.
- Industrial 175: Managerial Decision Models 3 s.h.
- Industrial 180: Information Management Systems 3 s.h.
- Industrial 185: Organizational Information Processing and Decision Behavior 3 s.h.
- One of these: 3 s.h.
- Industrial 100: Microeconomics 3 s.h.
- Industrial 108: Selected Problems in Administrative Science 3 s.h.
- Industrial 184: Productive Planning and Control 3 s.h.
- Total 21 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 provides concentrated graduate study in labor relations and personnel management. Students complete 35-41 semester hours of course work selected with consent of an advisor. The 35-41 semester hour includes the common body of human knowledge' requirements mandated by the American Assembly of Colleges. Students must also complete one of the following: (a) the core curriculum, or (b) the specialization in industrial relations.

Doctor of Philosophy
Students entering a Ph.D. in industrial relations and human resources will find degree requirements specified under "Interdepartmental Graduate Programs" in the College of Business Administration Introductory Section of the Catalog.

Courses

Primarily for Upper-Division Undergraduates

- Industrial 149: Internship in Management and Organizations 3 s.h.
- Industrial 167: Introduction to Labor 3 s.h.
- Industrial 150: Protective Labor Legislation 3 s.h.
- Industrial 153: Collective Bargaining 3 s.h.
- Industrial 158: Personnel Management 3 s.h.
- Specialized area (industrial relations or human resources management) 6 s.h.
- Total 15 s.h.

Administrative Studies Track

- Industrial 161: Individual Behavior in Organizations 3 s.h.
- Industrial 162: Group Behavior in Organizations 3 s.h.
- Industrial 163: Organizational Design and Operation 3 s.h.
- Industrial 175: Managerial Decision Models 3 s.h.
- Industrial 180: Information Management Systems 3 s.h.
- Industrial 185: Organizational Information Processing and Decision Behavior 3 s.h.
- One of these: 3 s.h.
- Industrial 100: Microeconomics 3 s.h.
- Industrial 108: Selected Problems in Administrative Science 3 s.h.
- Industrial 184: Productive Planning and Control 3 s.h.
- Total 21 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 provides concentrated graduate study in labor relations and personnel management. Students complete 35-41 semester hours of course work selected with consent of an advisor. The 35-41 semester hour includes the common body of human knowledge' requirements mandated by the American Assembly of Colleges. Students must also complete one of the following: (a) the core curriculum, or (b) the specialization in industrial relations.

Doctor of Philosophy
Students entering a Ph.D. in industrial relations and human resources will find degree requirements specified under "Interdepartmental Graduate Programs" in the College of Business Administration Introductory Section of the Catalog.

Courses

Primarily for Upper-Division Undergraduates

- Industrial 149: Internship in Management and Organizations 3 s.h.
- Industrial 167: Introduction to Labor 3 s.h.
- Industrial 150: Protective Labor Legislation 3 s.h.
- Industrial 153: Collective Bargaining 3 s.h.
- Industrial 158: Personnel Management 3 s.h.
- Specialized area (industrial relations or human resources management) 6 s.h.
- Total 15 s.h.
Doctor of Philosophy
Candidates who want to earn a Ph.D. degree in management science should refer to the description of the Doctor of Philosophy program in "Interdepartmental Graduate Programs" in the College of Business Administration introductory section of the BGS Catalog.

Courses

Primarily for Undergraduates

62300 Cooperative Education Internship 1.0 h.
62370 Computer Aids
Introduction to computer aid, its use in operations management and decision making, database processing, purchasing, and manufacturing systems.

62305 Statistical Analysis 1.0 h.

62306 Production Management (Organization and management of manufacturing enterprises, production planning and control, production theory and forecasting. Prerequisites: 23207 and 23208.) 1.0 h.

62308 Management Information Systems 1.0 h.

For Undergraduates and Graduates

62306 Production Management (Organization and management of manufacturing enterprises, production planning and control, production theory and forecasting. Prerequisites: 23207 and 23208.) 1.0 h.

62310 Database Management 3.0 h.

62315 Operations Research 3.0 h.

62316 Business Applications of Internet Technology 3.0 h.

62317 Business Cases 3.0 h.

62318 Information Systems 3.0 h.

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 experience. The general requirements are specified in the "Graduate Studies" section of the catalog. Students must consult with a faculty adviser to prepare a plan of study for the master's degree.

Primarily for Graduates

62310 Database Management 3.0 h.

62316 Business Applications of Internet Technology 3.0 h.

62317 Business Cases 3.0 h.

62318 Information Systems 3.0 h.
Graduate Programs

See "Interdepartmental Graduate Programs" in the College of Farm and Animal Science, administration section of the catalog.

Courses

Primarily for Upper-Division Undergraduates

8M400 Cooperative Education Internship 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M418 Introduction to Marketing 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M424 Marketing Research 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M427 Consumer Behavior 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M437 Advertising Theory 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M447 Marketing Management 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M455 International Marketing 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M466 Marketing Strategies 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M472 Sales Management 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M492 Advanced Marketing Management 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M495 Corporate Communication 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.

For Undergraduates and Graduates

8M167 Marketing Communication 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M182 Consumer Behavior 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M188 Analytical Techniques 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M195 Advanced Marketing 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M204 Sales Management 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M210 Marketing Management 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M215 International Marketing 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M222 Marketing Strategies 3 h.
Prerequisites: a grade point average of 3.00 in 190-B and 190-1.
8M237 Advertising Theory 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M238 Marketing Strategies 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M247 Marketing Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M255 International Marketing 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M266 Marketing Strategies 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M272 Sales Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M292 Advanced Marketing Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M295 Corporate Communication 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M298 Sales Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M304 Marketing Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M310 Consumer Behavior 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M311 Marketing Research 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M312 Sales Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M315 International Marketing 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M316 Marketing Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M317 Advertising Theory 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M322 Marketing Strategies 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M325 Consumer Behavior 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M327 Consumer Behavior 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M337 Advertising Theory 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M347 Marketing Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M355 International Marketing 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M367 Advertising Theory 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M372 Sales Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M392 Advanced Marketing Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M395 Corporate Communication 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M398 Sales Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M404 Marketing Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M417 Marketing Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M424 Marketing Research 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M427 Consumer Behavior 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M437 Advertising Theory 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
8M447 Marketing Management 3 h.
Prerequisites: a grade point average of 190-B and 190-1.
69241 Management Models—Ph.D.
3 s.h.
Intensive study, lab support, evaluating decision-making models, emphasis on structure and range of models for specific decision situations; case studies. Consent of instructor required.

69251 Marketing Models—Ph.D.
3 s.h.
Examination of theoretical and operational models in marketing with emphasis on statistical analysis; in-depth critique of models, participation in model development projects. Consent of instructor required.

69253 Research in Consumer Behavior—Ph.D.
3 s.h.
Critical examination of recent research, in-depth study of research methods. Consent of instructor required.

69264 Multivariate Applications—Ph.D.
3 s.h.
Survey of some topics in multivariate analysis, principal components, factor analysis, canonical correlation, discriminant analysis, linear structural relationships, emphasis on how statistical methodologies are applied across disciplines, implications of procedures to marketing research. Consent of instructor required. Consent of instructor required.

69345 Research Workshop—Ph.D.
3 s.h.
Individualized guided research project on appropriate topics in marketing. Consent of instructor required.

69346 Seminar in Marketing—Ph.D.
3 s.h.
Exploration of current marketing literature and current issues in society and marketing. Consent of instructor required.

69499 Thesis in Marketing
3 s.h.
Consent of instructor required.
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 Science Center, through 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 prosthesis; removable prosthesis.

**Oral Medicine**
- Preventive dentistry; oral diagnosis; dental radiology; oral pathology; cancer control; oral surgery; periodontology.

**Community Dentistry**
- Community health services; oral health services; health education; dental economics, dental jurisprudence; genetics.

**Pediatric Dentistry**
- Pediatric dentistry; preventive dentistry; community health; principles of human behavior; dental economics; dental jurisprudence; genetics.

The student is introduced to clinical patient treatment situations during the first year. The second-year program consists of basic science and technical courses, plus definitive clinical patient treatment.

Third-year students rotate through a series of clerkships, which include them to each of eight clinical disciplines. Fourth-year 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 Iowa Farm Migrant Worker Program or the Foreign Dental School Exchange Program, which give exposure to facets of dentistry usually not observable in the academic setting.

**Promotions and Graduation**

Student promotions and graduation are determined by the college's academic and professional promotion 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 included in 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 was requested to submit additional information concerning a problem 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 provided by the dean and makes a recommendation to the dean.

**Dentistry Licensure Examination**

Iowa and the states of Colorado, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Wisconsin, and Wyoming belong to the Central Region Dental Testing Service, which serves as the testing agency for clinical examinations for licensure in these states. Examinations are given at several sites located at schools of dentistry within the region. Examination dates are determined by the Central Regional Dental Testing Service and are available from its administrative office.

For a two-year period, member states adopt successful completion of Central Regional Dental Testing Service requirements in lieu of their individual states' clinical examination requirements. The license application is then filed with the individual state's board of dentistry.

Most states also require the National Boards, conducted by the American Dental Association, as a requirement for licensure.

**Facilities**

The Dental Science Building, a major unit of the Iowa Health Science Center, enables the college to accelerate its research activities and facilitate the development of interdisciplinary communication in health center testing, research, and patient care activities. The health area includes the College of Medicine, Nursing, and Pharmacy; the Brown Science Building; The University or Iowa Hospital and Clinics; and The Living Library for the Health Sciences, which houses all of the University's special health science holdings, a total of 168,760 volumes including more than 18,000 volumes on dentistry and allied scientific subjects. and the more than 200 dental journals the college currently receives. The library includes more than 9,000 volumes in the combined health professions.

The Dental Science Building consists of two connected, four-story wings located on either side of a mall. The south wing is devoted to clinics teaching, with various departments, faculty offices, support laboratories, clinical research space, offices, and a cafeteria. The north wing houses teaching laboratories, research laboratories, administration 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 local student chapters. There are also local chapters of the American Dental Association Dental Schools, the American Association of Women Dentists, the American Society of Dentistry for Children, and the Student National Dental Association. Students who are all in good standing are eligible for election to Omicron Kappa Upsilon, the National Honorary Dental Society. Two national professional interests, Delta Sigma Delta and Phi Omicron Upsilon, have chapters located at Iowa. Both fraternities have housing facilities 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 Instrument Management System (SIMS), which provides for the proper identification and handling of instruments and supplies necessary for educational and clinical training.

The SIMS 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 $190 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 (FWS), which includes an evaluation of parents’ income and assets. Newly enrolled students are eligible for Health Professions Loans, Perkins Loans, state grants, and Stafford Loans. Interest on these loans is deferrable 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 assistants are awarded each year. The DRA provides financial support at $20 per year for as many as four years. If the student maintains an appropriate level of performance, nonresidents receive the same stipend and fees at resident rates. Awards are engaged as assistants in research working with faculty mentor.

Other Assistantships
The college offers assistantships that provide additional support to many students in the first four years, based on satisfactory performance in the classroom. Assistantships receive a stipend and may include tuition and fees at resident rates.

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
Applicants must submit a completed application form to the American Association of Dental Schools Application Service (AADSAS). The AADSAS forms are available from the University Office of Admissions or the College of Dentistry Academic Affairs Office.

Applications are accepted beginning June 1 of the year prior to the year for which application is made. Completed applications should be on file at AADSAS by November 30. Applicants should apply as early as possible and should not delay until after the Dental Admission Test (DAT) is taken.

Applicants must take all required preprofessional courses and have the necessary high school work and SAT scores available by the time they apply. The DAT must be completed no later than December 15.

Prospective dental students are encouraged to enter 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 freshman year in dentistry, the program is in the college’s Dental Admission Program. This is the "Combined Liberal Arts-Dentistry Program" in this section of the Catalog.

Preclinical Studies
The preclinical requirement for admission to the College of Dentistry is the completion of no fewer than 96 semester hours of academic study at an accredited college. In exceptional circumstances, candidates with fewer than 96 semester hours of college work are considered for admission if their performance and potential for their graduation are considered outstanding.

The preclinical program of study should include:

- Emphasis in anatomy, histology, and physiology of oral structures and diseases.
- Courses in the biological sciences, including general biology and introductory organic chemistry.
- Courses in the social sciences, history, and English composition.

Applicants must take all required courses within the time periods specified on the application forms.

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 college hours requirements toward the bachelor’s degree.

The option for acceptance by the College of Liberal Arts of 30 semester hours of elective credit earned in any other college of The University allows students who enter the College of Dentistry to obtain a bachelor’s degree from the College of Liberal Arts after successfully completing the freshman year in dentistry. To take advantage of this plan, students must fulfill all specific requirements in the bachelor’s degree, including the General Education Requirements and the requirements for a major. Students must also 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’ course work in the preclinical sciences in addition to the cumulative grade-point average.

Interviews
Personal interviews are required of all 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 (DAT)
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 College of Dentistry Academic Affairs Office or the American Dental Association, 211 East Chicago Avenue, Chicago, Illinois 60611. Test application deadlines are typically 30 to 45 days prior to the exam.

Deposit by Accepted Applicants
Applicants accepted before February 15 are required to submit a $200 deposit within 30 days after notification of admittance.
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, Operative Dentistry, 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 degree from a recognized dental college), and departmental approval. Departments also offer postgraduate programs of study designed as preparation for clinical specialty practice. These programs are not meant to lead to an academic degree. Prerequisites for admission to the postgraduate programs are the same as for graduate programs. A certificate is awarded upon satisfactory completion of the postgraduate program.

Basic Sciences in the Dental Curriculum

The following course science courses are offered by departments in colleges other than dentistry and are a required part of the dental curriculum.

6:010 Human Gross Anatomy for Dental Students 4 s.h.
6:012 General Histology for Dental Students 4 s.h.
6:018 Oral Histology and Embryology 4 s.h.
6:121 Health Sciences Microbiology 4 s.h.
7:111 Pharmacology for Health Sciences: Dental Sciences 5 s.h.
7:152 Membrane Physiology 5 s.h.
9:101 Biochemistry for Dental Students 4 s.h.

Courses

Nondepartmental
110:090 Transfer Credit Approved
110:115 Dental Materials 1 s.h.
110:200 First Year Continuing Session 0 s.h.
110:100 Introduction to Operative Dentistry 2 s.h.
110:120 Radiography 2 s.h.
110:150 Radiographic Technology 2 s.h.
110:200 Second Year Continuing Session 0 s.h.
110:205 Stainless Steel Wire 2 s.h.
110:215 Dental Hygiene 2 s.h.
110:220 Dental Hygiene 2 s.h.
110:230 Dental Hygiene 2 s.h.
110:240 Dental Hygiene 2 s.h.
110:250 Dental Hygiene 2 s.h.
110:260 Dental Hygiene 2 s.h.
110:270 Dental Hygiene 2 s.h.
110:280 Dental Hygiene 2 s.h.
110:290 Dental Hygiene 2 s.h.
110:300 Dental Hygiene 2 s.h.
110:310 Dental Hygiene 2 s.h.
110:320 Dental Hygiene 2 s.h.
110:330 Dental Hygiene 2 s.h.
110:340 Dental Hygiene 2 s.h.
110:350 Dental Hygiene 2 s.h.
110:360 Dental Hygiene 2 s.h.
110:370 Dental Hygiene 2 s.h.
110:380 Dental Hygiene 2 s.h.
110:390 Dental Hygiene 2 s.h.
110:400 Dental Hygiene 2 s.h.
110:410 Dental Hygiene 2 s.h.
110:420 Dental Hygiene 2 s.h.
110:430 Dental Hygiene 2 s.h.
110:440 Dental Hygiene 2 s.h.
110:450 Dental Hygiene 2 s.h.
110:460 Dental Hygiene 2 s.h.
110:470 Dental Hygiene 2 s.h.
110:480 Dental Hygiene 2 s.h.
110:490 Dental Hygiene 2 s.h.
110:500 Dental Hygiene 2 s.h.
110:510 Dental Hygiene 2 s.h.
110:520 Dental Hygiene 2 s.h.
110:530 Dental Hygiene 2 s.h.
110:540 Dental Hygiene 2 s.h.
110:550 Dental Hygiene 2 s.h.
110:560 Dental Hygiene 2 s.h.
110:570 Dental Hygiene 2 s.h.
110:580 Dental Hygiene 2 s.h.
110:590 Dental Hygiene 2 s.h.
110:600 Dental Hygiene 2 s.h.

Clinical Management Courses

Professor: Thomas J. Gardner
Associate professor: Lawrence C. Petrowsky
Assistant professor: Gerald Focht

117:017 Introduction to Quality Assurance 3 s.h.
117:100 Understanding and Developing the Patient 3 s.h.
117:105 Understanding and Developing the Patient 3 s.h.
117:110 Understanding and Developing the Patient 3 s.h.
117:115 Understanding and Developing the Patient 3 s.h.
117:120 Understanding and Developing the Patient 3 s.h.
117:125 Understanding and Developing the Patient 3 s.h.
117:130 Understanding and Developing the Patient 3 s.h.
117:135 Understanding and Developing the Patient 3 s.h.
117:140 Understanding and Developing the Patient 3 s.h.
117:145 Understanding and Developing the Patient 3 s.h.
117:150 Understanding and Developing the Patient 3 s.h.
117:155 Understanding and Developing the Patient 3 s.h.
117:160 Understanding and Developing the Patient 3 s.h.
DENTAL HYGIENE

Chair: Pauline Jin
Associate professor: Patricia Brito, Nancy Setty
LaLonde, Kay Mecher, Elizabeth Potter, Nancy Thompson
Graduate coordinator: Tracy Collazos, Jake Rollins
Undergraduate degree offered: B.S. in Dental Hygiene
Graduate degree offered: M.S. in Dental Hygiene

Undergraduate Program

Qualified by education and licensure, 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 accredited by the Commission on Dental Accreditation of the Americas Dental Association. Program graduates are prepared to take the national, regional, and state dental board 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 60:12 Human Histology and 73:160 Introduction to Periodontology. In the senior year, students enroll in 60:134 Introduction to Oral Pathology, 91:160 Dental Radiology, 91:164 Dental Hygiene, 60:140 Oral Health for Dental Hygienist, and 91:140 Oral Pathology for Dental Hygienist.

In addition, juniors learn the basic theory and clinical skills required for dental hygiene practice in 60:123 Dental Hygiene Core I and 60:144 Dental Hygiene Core II, which integrate content in socio-medical—dental sciences with the theory and practice of dental hygiene.

During the senior year, students advance their clinical skills in 60:155 Clinical Dental Hygiene, 60:125 Advanced Periodontics for Dental Hygienist, and 91:125 Advanced 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 team approach.


Senior students also are enrolled in 88:107 Practicum: Community Dental Hygiene, 88:106 Seminar: Community Dental Health, 72:121 Introduction to and Design and Developing Instructional Materials: 222:121 Biostatistics, and 112:143 Introduction to Genetics and Dentistry.

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 dental health care. Field experience enables them to apply knowledge of human behavior, basic principles of communication and marketing, and educational and research techniques to the design, implementation, and evaluation of health care and educational programs.

Aging Studies Program

As part of their dental hygiene studies, students may participate in a multidisciplinary program in aging studies. The program provides supportive classroom work for students who want to develop specialization in gerontology. For further information, see “Aging Studies Program” in the College of Liberal Arts section of the Catalog.

Minors and Double Majors

Dental hygiene students have the opportunity to develop a minor in another field. To pursue a minor, major students who select this option should plan their course of study with their dental hygiene adviser in close cooperation with faculty from the minor or other major department.

Admission

High School Preparation

Specific high school courses required are four years of English, four years of 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 programs 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 organic chemistry—4.8 General Chemistry II;
Four semester hours of microbiology—4.56 Microbiology;
Four semester hours of nutrition—17.44 Introduction to Nutrition;
Three semester hours of psychology—31. Psychology;
Three semester hours of sociology—34. Introduction to Sociology Principles.

Four semester hours of anatomy—0.01 Principles of Human Anatomy;
Four semester hours of physiology—72.236 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 certification in the preclinical rests of the criteria (CPB) at the basic life support for health care providers level before they enter the program.

Completion of a bachelor’s degree or an associate of arts degree in the Iowa Area Community College fulfills the General Education Requirements with the exception of the foreign language requirement. However, the completion of a two-year associate degree program in dental hygiene does not provide an appropriate background for transfer into the baccalaureate program at Iowa State University.

Students planning the professional program in dental hygiene only in the fall. Those enrolled in the University of Iowa College of Liberal Arts need only the dental hygiene application. Transfer students must submit the College of Liberal Arts and dental hygiene applications.

Although applications are accepted and processed throughout the academic year, it is recommended that students apply for dental hygiene admissions by November 1 preceding the fall semester in which they wish to enter the program.

Graduate Program

The graduate program fulfills the need to prepare hygienists who contribute to the advancement of knowledge in dental hygiene and who provide leadership in the profession. The graduate program also fulfills the need to prepare scholars in dental hygiene education. Therefore, graduate program goals emphasize the acquisition of advanced scientific knowledge in dental hygiene; the biological, social, and physical sciences; and basic knowledge of and experience in conducting research.

284 Dentistry
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 teaching in dental hygiene. Approximately 14 semester hours are taken in assigned courses to acquire advanced knowledge in dental hygiene and if are taken in recent 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, histology, biochemistry, oral pathology, periodontology, andesthesiology.

Electives emphasizing the clinical, 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 electives in higher education, such as education measurement, theories of learning, and research.

It is recommended that dental hygiene graduate students take the following courses:

- 88:205 Seminar: Dental Hygiene Literature Review
- 88:209 Research: Dental Hygiene
- 88:365 Social Factors and Oral Health
- 89:206 Clinical Dental Hygiene Education
- 89:307 Selected Topics in Dental Hygiene Education
- 91:121 Statistical Methods for Dental Research
- 75:143 Introduction to Statistical Methods
- 111:224 Research Design in Dental Hygiene

Although students may begin the 34-semester hour program during the summer term or fall semester enrollment at the beginning of the fall semester is preferred. Most students should expect to take a minimum of two years to complete degree requirements.

Admission

Applicants for admission are subject to the general rules of the Graduate College. Departmental requirements include an acceptable score on the Graduate Record Examination (GRE) General Test and a 2.80 minimum undergraduate cumulative grade-point average. The undergraduate education of the applicant should include courses equivalent to those in the undergraduate dental hygiene major at The University of Iowa.

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, Carter Hall. Since these materials must be received before the candidate's application can be processed, students are encouraged to submit their 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 of Iowa Modern Dental Science Building. This building is part of The University of Iowa Health Center 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, students are eligible to apply for a number of scholarships and awards for undergraduate and graduate dental hygiene students. These awards are based on need and merit. Students must apply for these awards. Scholarships are available on a competitive basis to the academic record and potential students' contributions to the field of oral health.

Financial support for graduate students is available through teaching assistantships, and on a competitive basis to the academic record and potential students' contributions to the field of oral health. Teaching assistantships are awarded on a competitive basis to the academic record and potential students' contributions to the field of oral health. Teaching assistantships are awarded on a competitive basis to the academic record and potential students' contributions to the field of oral health.

Teaching assistantships are awarded on a competitive basis to the academic record and potential students' contributions to the field of oral health.
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 maxillary and mandibular pathological conditions of the dental pulp and periapices, emphasizing the areas of prevention and diagnosis of pulpal and peripulpal 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 no formal thesis. Candidates are expected to write a scientific paper of publishable quality, based on original research.

The certificate program involves course study for up to 48 semester hours of credit. An individual plan of study is prepared for each student.

Both programs are for a minimum of two academic years, with on-time students being admitted. Completion of the program requires satisfactory performance in a comprehensive written and/or oral examination.

These programs satisfy the training requirements of eligibility of the American Board of Endodontics.

The specific goals of these programs are to allow dentists to develop their skills and acquire a broad knowledge of the specialty of endodontics for teaching and practice purposes; to gain sufficient knowledge and experience in the educational process so that they may function competently as dental educators; to recognize the value of the pursuit of academic research; and to develop the ability to plan, conduct, and report the results of research investigations.

Applicants for the graduate programs in endodontics must be graduates of an accredited college of dentistry and must comply with the requirements for admission to the Graduate College of The University of Iowa.

The graduate program in endodontics begins July 1. Applications should be made no later than October 15 of the year prior to the anticipated starting date. Students who have met the requirements for admission to the Graduate College then may be accepted into the program by the faculty of the Department of Endodontics. A personal interview with the applicant may be requested.

Students in the program are required to maintain a grade-point average of 3.00 in all courses or degree. Students who fail below this limit are allowed one semester to attain it. The circumstances creating the deficiency must receive careful consideration.

Students enrolled in the graduate program in endodontics may not involve themselves in private practice enterprises outside the college. A student who does so will be asked to withdraw himself or herself exclusively either to the program or the practice.

A person applying to the graduate program in endodontics must be able to support themselves financially for the time required to complete the program.

Courses

Predoctoral

83100 Endodontics
- Basic principles, concepts, and techniques are emphasized for treatment of endodontic problems in both the primary and permanent dentitions.
- 3 h.

83110 Clinical Endodontics
- Clinical experience in the diagnosis and treatment of pulp and periapical pathosis.
- 4 h.

83115 Clinical Endodontics Seminar
- Basic clinical and endodontic concepts.
- 1 h.

Graduate

83200 Update in Endodontics
- Recent advances in endodontic diagnosis, treatment, and clinical techniques.
- 1 h.

83225 Endodontic Literature Review I
- Historical and recent reviews of endodontic research.
- 2 h.

83230 Endodontic Literature Review II
- Continuation of 83225.
- 3 h.

83226 Endodontic Literature Review III
- Continuation of 83225.
- 3 h.

83320 Research in Endodontics
- Seminar on the preparation and writing of research papers and reports.
- 1 h.

83326 Endodontic Literature Review IV
- Continuation of 83225.
- 2 h.

83280 Research in Endodontics
- Seminar on the preparation and writing of research papers and reports.
- 1 h.

82201 Preclinical Endodontic Support
- Evaluation of endodontic cases requiring surgical treatment.
- 2 h.

82202 Clinical Endodontic Support
- Clinical treatment of patients, preparing them for surgical procedures.
- 2 h.

82206 Endodontic Support Conference
- Review of clinical cases and problems.
- 1 h.

82208 Review of Endodontic Support
- Review of progress and problems.
- 1 h.
HOSPITAL FAMILY DENTISTRY

Head: Robert A. Olsen
Division Director: Arthur Novick (Pediatric Dentistry), Robert A. Olsen (Oral and Maxillofacial Surgery), David O. Milner (Family Dentistry)

Director of general dentistry residency programs: David O. Milner


Associate instructors: Stephen A. Aquilino, Paul J. Orfalt, Dennis H. Steckler, Donald P. Miller, Robert A. Olsen, Shawnell Walthall, Deborah L. Sather

Instructors: Michael J. Barlow, Kirk L. Beaudoin, Frederick F. Kaukonen, Eric L. Rivera, Gerald L. Scott, Linda W. Vos

Residency Program

The aim of the residency program in general practice is to prepare the graduate for a broader scope of private practice in the area of general dentistry. The program is designed to combine clinical and didactic training on an individual basis and to meet fundamental requirements of the Commission on Dental Accreditation of the American Dental Association.

The residency period covers one year of hospital-based training designed to provide clinical, didactic, and hospital experience at the postdoctoral level. Instruction and experience provided in the program prepare residents to meet the oral health needs of a wide range of ambulatory and nonambulatory patients.

Residency training includes use of hospital resources, management of ambulatory patients, inpatients, same-day surgery patients, and emergency medical and dental patients. Residents participate in consultation with other hospital services and are assigned to appropriate hospital services to fulfill the objectives of the training program. They are assigned to the house staff of the hospitals and have the same privileges and responsibilities as residents in other professional education programs.

Applicants must be graduates of an accredited college of dentistry and must be licensed to practice dentistry in the United States. Applicants are selected via a matching program sponsored by the American Association of Oral and Maxillofacial Surgeons. Application deadline is September for admission on July 1 of the next year. Applicants are notified after the matches have been received and the staff takes official action.

PROFESSIONAL POSTGRADUATE

Graduate Program

The Department of Operative Dentistry offers a program of advanced training designed to provide dentists for training, research, and practice. Since operative dentistry is a specialty area of dentistry, there are ample opportunities in the graduate program for students to pursue courses that are of particular interest to them. The program provides for either a Master of Science degree or a certificate in operative dentistry.

Requirements for the M.S. degree include satisfactory completion of 48 semester hours of selected postgraduate-level courses, preparation of an acceptable thesis based on original research, and formal defense of the thesis.
the thesis and examination of the candidate by an examining committee. Students should plan to furnish their own financial support for the research and thesis.

Applicants for the program must be graduates of recognized schools of dentistry and must comply with the admission requirements of the Graduate College. An interview with the applicant may be requested.

Courses

Dental Hygiene

- R1150 Operative Dentistry Laboratory for Hygienists
- R1150 Dental Hygiene Laboratory for Hygienists
- R1150 Dental Hygiene Laboratory for Assistants
- R1150 Operative Dentistry Laboratory

Predoctoral

- 82244 Operative Dentistry Seminar I
- 82245 Operative Dentistry Seminar II
- 82246 Operative Dentistry Seminar III
- 82247 Operative Dentistry Seminar IV

Research Program

- 82248 Operative Dentistry Research I
- 82249 Operative Dentistry Research II
- 82250 Operative Dentistry Research III
- 82251 Operative Dentistry Research IV

Clinical Studies

- 82248 Operative Dentistry Advanced Clinic I
- 82249 Operative Dentistry Advanced Clinic II
- 82250 Operative Dentistry Advanced Clinic III
- 82251 Operative Dentistry Advanced Clinic IV
- 82252 Operative Dentistry Advanced Clinic V

ORAL PATHOLOGY AND DIAGNOSIS

Heads: Gilbert E. Lilly, Alice S. Newman, Robert E. Lilly, and Ralph F. Stager

Graduate

Discipline Studies

- 82244 Graduate Research Seminar
- 82245 Operative Dentistry Seminar I
- 82246 Operative Dentistry Seminar II
- 82247 Operative Dentistry Seminar III

Master of Science

- 82248 Operative Dentistry Seminar IV
- 82249 Operative Dentistry Research I
- 82250 Operative Dentistry Research II
- 82251 Operative Dentistry Research III
- 82252 Operative Dentistry Research IV
- 82253 Selective Application of Operative Dentistry
- 82254 Biostatistical Research Methodology
- 82255 Operative Dentistry Advanced Clinic I
- 82256 Operative Dentistry Advanced Clinic II
- 82257 Operative Dentistry Advanced Clinic III
- 82258 Operative Dentistry Advanced Clinic IV
- 82259 Operative Dentistry Advanced Clinic V

ORAL PATHOLOGY AND DIAGNOSIS

Head: Gilbert E. Lilly

Assistant professors: Alice S. Newman, Robert E. Lilly, and Ralph F. Stager

Assistant professors: Michael W. Ricketts, Peter T, Thomas, William J. Housser, and Donald D. Hardesty

Adjunct assistant professor: Benjamin P. Ricketts

Adjunct assistant professor: Mary E. Sipple

Adjunct assistant professor: Joseph D. Green

Adjunct assistant professor: David E. Davis

Adjunct assistant professor: James E. Cooper

Adjunct assistant professor: Charles F. Wallace

Adjunct assistant professor: George M. Moore

Adjunct assistant professor: Mary B. Morgan

Graduate degree offered: M.S. in Oral Pathology

Predoctoral Program

The department teaches dental and other health care students about disorders that manifest in and about the oral cavity.

They also study identification of systemic diseases through physical evaluation of patients, the influence of systemic disease on dental therapy, and the influence of dental therapy on systemic disease and abnormalities.

Graduate Programs

Master of Science

Stomatology is the science of structure, function, and disease of the oral cavity. Study includes examination of related histories; evaluation of clinical signs and symptoms; and use of biochemical, microscopic, and radiographic procedures to establish a diagnosis and a plan for therapeutic management.

The department's facility 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 one emphasizing oral and maxillofacial radiology, allow postdoctoral students to obtain advanced clinical, didactic, and research-related education while pursuing a Master of Science degree.

Master of Science in Stomatologia with Oral Pathology

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.

Certificate in Oral Pathology and Advanced Certification in Stomatologia with Oral Pathology

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 Pathology.

Master of Science in Stomatologia with Oral and Maxillofacial Radiology

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...
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 introduction to hospital procedures, isolation of basic and clinical problems, and application of the principles of surgery, and familiarization with various hospital services. Competence in clinical oral and maxillofacial surgery requires knowledge of the basic sciences, skills, and critical thinking in the specialty. Therefore, in addition to hospital and clinical training, residents take advanced course work in subjects such as applied pharmacology, surgical anatomy, histology, physiology, and microbiology.

They also review closely related disciplines such as radiology, anesthesiology, physical diagnosis, and laboratory procedures.

The assumption of increased responsibility and the opportunity for clinical and operating room experience are important aspects of residency training.

Residents on clinical training in anesthesiology through an assigned rotation in the Department of Anesthesiology.

Previous advanced training in physical chemistry, biochemistry, pharmacology, and pathology assures greater clinical significance and increased responsibility in the operating room as first assistant and surgeon further develops surgical judgment and skills.

Development and implementation of a research project under staff supervision enhance the value of the residency training.

Senior residents may be given responsibility for major oral and maxillofacial surgical cases during rotations at The University of Iowa Hospitals and Clinics and at Veterans Affairs Medical Center. Each third-year resident is assigned on a rotation basis as a clinical and didactic coordinator, and assumes responsibility to qualify for examination by the American Board of Oral and Maxillofacial Surgery.

Master of Science
Requirements for the Master of Science degree may be completed during residency. The M.S. program involves writing and presenting an 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. Students may graduate from any accredited college of dentistry and be licensed to practice dentistry in the United States, and should be in the upper one-third of their graduating class.

Requirements include, but are not limited to:
1. Completion of courses in basic sciences for applicants in the fields of anatomy, physiology, biochemistry, and microbiology.
2. Completion of a minimum of 30 months of clinical experience in oral and maxillofacial surgery. The training is to be completed in a residency program accredited by the Commission on Accreditation of Medical Education.
3. Basic sciences review
5. Passing of the examination for the Master of Science degree in oral and maxillofacial surgery.

Graduate School
Graduate School is the academic unit of the University of Iowa. It is located at 1210 University Avenue, Iowa City, IA 52242-1034.

Graduate Programs
Graduate Programs are the academic units of the University of Iowa. They provide graduate education and research opportunities to students.

Graduate Programs in the College of Dentistry are: Oral and Maxillofacial Surgery, Oral Diagnosis, and Maxillofacial Surgery.

Graduate Programs in the College of Medicine are: Oral and Maxillofacial Surgery, Oral Pathology, and Oral Microbiology.

Facilities
The University of Iowa College of Dentistry has outstanding basic and clinical science departments that stimulate and support scholarly research and superior clinical practice. The facilities of The University of Iowa Hospitals and Clinics, the Veterans Affairs Medical Center, and the College of Dentistry and Medicine provide an appropriate environment for residency training in oral and maxillofacial surgery.

Courses
Dental Hygiene

87-001 An Introduction to Dental Hygiene
1 a.b.

87-002 Dental Hygiene Practitioner
1 a.b.

87-003 Dental Hygiene Practitioner I
1 a.b.

87-004 Dental Hygiene Practitioner II
1 a.b.

87-005 Dental Hygiene Practitioner III
1 a.b.

87-006 Dental Hygiene Practitioner IV
1 a.b.

87-007 Dental Hygiene Practitioner V
1 a.b.

87-008 Dental Hygiene Practitioner VI
1 a.b.

87-009 Dental Hygiene Practitioner VII
1 a.b.

87-010 Dental Hygiene Practitioner VIII
1 a.b.

87-011 Dental Hygiene Practitioner IX
1 a.b.

87-012 Dental Hygiene Practitioner X
1 a.b.

87-013 Dental Hygiene Practitioner XI
1 a.b.

87-014 Dental Hygiene Practitioner XII
1 a.b.

87-015 Dental Hygiene Practitioner XIII
1 a.b.

87-016 Dental Hygiene Practitioner XIV
1 a.b.

87-017 Dental Hygiene Practitioner XV
1 a.b.

87-018 Dental Hygiene Practitioner XVI
1 a.b.

87-019 Dental Hygiene Practitioner XVII
1 a.b.

87-020 Dental Hygiene Practitioner XVIII
1 a.b.

87-021 Dental Hygiene Practitioner XIX
1 a.b.

87-022 Dental Hygiene Practitioner XX
1 a.b.

87-023 Dental Hygiene Practitioner XXI
1 a.b.

87-024 Dental Hygiene Practitioner XXII
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87-025 Dental Hygiene Practitioner XXIII
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87-026 Dental Hygiene Practitioner XXIV
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87-027 Dental Hygiene Practitioner XXV
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87-028 Dental Hygiene Practitioner XXVI
1 a.b.

87-029 Dental Hygiene Practitioner XXVII
1 a.b.

87-030 Dental Hygiene Practitioner XXVIII
1 a.b.

87-031 Dental Hygiene Practitioner XXIX
1 a.b.

87-032 Dental Hygiene Practitioner XXX
1 a.b.

87-033 Dental Hygiene Practitioner XXXI
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87-034 Dental Hygiene Practitioner XXXII
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87-035 Dental Hygiene Practitioner XXXIII
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87-036 Dental Hygiene Practitioner XXXIV
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87-037 Dental Hygiene Practitioner XXXV
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87-038 Dental Hygiene Practitioner XXXVI
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87-039 Dental Hygiene Practitioner XXXVII
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87-040 Dental Hygiene Practitioner XXXVIII
1 a.b.

87-041 Dental Hygiene Practitioner XXXIX
1 a.b.

87-042 Dental Hygiene Practitioner XXXX
1 a.b.
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 each individual's 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, fluoridation 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. Five 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 Minority Career Development, Bureau of Community Health Services, Department of Health and Human Services.

Admission

Prospective students visit apply to the Graduate College.

Courses

Predoctoral

99.160 Pediatric Dentistry Diagnosis and Treatment

Concepts of growth and development, behavior management, and preventive techniques for pediatric patients.

99.160 Clinical Pediatric Dentistry

Comprehensive clinical management of pediatric patients.

99.160 Clinical Seminar in Pediatric Dentistry

The course of patient management, case histories, treatment philosophies, and other issues in contemporary dentistry for children.

Graduate

99.250 Advanced Pediatric Dentistry

Twelve themes in pediatric dentistry, including growth and development, behavior management, prevention, orthodontics, dental disease, oral surgery, and anesthesia.

99.250 Research in Pediatric Dentistry

Research design and completion of an original research project, with results presented in publishable form.

99.310 Thesis Preparation

Preparation of original research project and competent 8-hour thesis.

99.310 Advanced Clinical Pediatric Dentistry

Comprehensive clinical management of pediatric patients in areas of prevention, orthodontic appliance therapy, endodontics, and minor oral surgery.

99.310 Pediatric Physical Diagnosis for Dentists

Basic and clinical application for making a physical evaluation of the child.

99.310 Pediatric Therapy for Dental Pulpitists

Principles of therapy in various disease conditions.

99.310 General Anesthesia Dentistry

Hands-on training under the direction of the University of Iowa Hospital and Clinics, emphasis on local anesthesia.

99.310 Pediatric Teaching in Pediatric Dentistry

Observation and practice in current teaching techniques.

99.370 Pediatric Dentistry Case Review

Diagnosis and treatment planning in selected pediatric dental patients, particularly those with growth and development problems.

Periodontics

Head: Philip A. Goetzkin

Professor: Frank A. Kotzbauer, Philip A. Goetzkin, William C. Ruffin

Associate professors: Paul J. Colussi, William H. Geppert, Henry F. Hanrahan

Adjunct clinical assistant professors: Steven H. Cooper, Alan F. Powls

Assistant in Instruction: Nancy A. Stich

Graduate degree offered M.S. in Periodontology

Predoctoral Program

The Department of Periodontics is concerned with the diagnosis, treatment, and prevention of periodontal diseases. The predoctoral program combines didactic, laboratory, and clinical experience, with emphasis on applying the biological concepts of periodontiology to the comprehensive clinical management of patients who have periodontal diseases.

Graduate Programs

Master of Science

The Master of Science program is designed to provide training for teaching, research, and specialization in periodontics. The program meets all requirements of the Commission on Dental Accreditation of the American Dental Association for advanced dental education programs in periodontics. It also meets eligibility requirements for certification by the American Board of Periodontology and complies with regulations of the Graduate Colloquium for programs of higher education in dentistry.

The program requires satisfactory completion of 40 hours of didactic and elective course work, preparation and defense of an academic 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 grants final approval of such individual programs. The Department of Periodontics 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 Scientific Program are interdisciplinary with the basic sciences.

Certification

The certification program provides a sound foundation for the clinical practice of periodontics and is combined 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 periodontics. 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
114 Introduction to Periodontal  1.5 h.
115 Introduction to Periodontal  2.5 h.
116 Advanced Periodontal for Dental Hygienist Students  2.0 h.
117 Predoctoral
121 Periodontal Methods I  1.5 h.
123 Periodontal Methods II  1.5 h.
125 Periodontal Methods II  1.5 h.
126 Periodontal Methods III  1.5 h.
127 Periodontal Methods IV  1.5 h.
128 Periodontal Methods V  1.5 h.
210 Periodontal Methods VI  1.5 h.

Graduate
3210 Advanced Periodontal  3.0 h.
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3373 Advanced Periodontal  3.0 h.
Courses

Predoctoral

84132 Principles of Dentistry 3 a.h.
84140 Removable Prosthodontic Techniques 3 a.h.
84141 Removable Prosthodontic Techniques (Laboratory) 3 a.h.
84162 Fixed Prosthodontic Techniques 3 a.h.
84163 Fixed Prosthodontic Techniques (Laboratory) 3 a.h.
84164 Removable Prosthodontic Clinic 3 a.h.
84165 Removable Prosthodontic Seminar 3 a.h.
84170 Fixed Prosthodontic Clinical Practice 3 a.h.
84175 Fixed Prosthodontic Seminar 1 a.h.
84179 Fixed Prosthodontic Seminar 1 a.h.
84181 Fixed Prosthodontic Seminar II 1 a.h.
84182 Fixed Prosthodontic Seminar III 1 a.h.
84183 Fixed Prosthodontic Seminar IV 1 a.h.
84184 Fixed Prosthodontic Seminar V 1 a.h.
84185 Fixed Prosthodontic Seminar VI 1 a.h.
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84219 Fixed Prosthodontic Seminar XL 1 a.h.
84220 Fixed Prosthodontic Seminar XLI 1 a.h.
84221 Fixed Prosthodontic Seminar XLII 1 a.h.
84222 Fixed Prosthodontic Seminar XLIII 1 a.h.
84223 Fixed Prosthodontic Seminar XLIV 1 a.h.
84224 Fixed Prosthodontic Seminar XLV 1 a.h.
84225 Fixed Prosthodontic Seminar XLVI 1 a.h.
84226 Fixed Prosthodontic Seminar XLVII 1 a.h.
84227 Fixed Prosthodontic Seminar XLVIII 1 a.h.
84228 Fixed Prosthodontic Seminar XLIX 1 a.h.
84229 Fixed Prosthodontic Seminar L 1 a.h.
84230 Fixed Prosthodontic Seminar LI 1 a.h.
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The nation’s first university-level professional chair in education was established at The University of Iowa in 1872. The department became the School of Education in 1907, and the College of Education, structured in the basic pattern that governs it today, was founded in 1913. The growth of the college has continued 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 divisional components. Education, curriculum studies are 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 three baccalaureate degree-based teacher preparation programs. Two of these programs in education and education, teacher education programs require licensed majors. The third program involves the professional course work and academic major required for secondary school teaching.

The college also provides numerous specializations elementary (including early childhood), special education, and secondary education, and additional teaching endorsement programs. Permission for special education teaching is offered at the graduate level. A limited number of undergraduate special education majors are open to all students having an interest in this area, those from other teacher education programs, and those planning to pursue graduate degrees in special education.

All students admitted to the 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 prepared 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 decide to enter a teacher-education program and who meet eligibility requirements should submit an application to the College of Education, Office of Student Services, N310 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 September 1 or April 1 for consideration and may be accepted if qualified and if openings in the program occur.

**General Requirements**

Admission to teacher education programs 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 Test (ACT) or the Scholastic Aptitude Test (SAT).
- Attained freshman standing (completed 30 semester hours) prior to the semester during which enrollment is made in the foundations of education sequence of courses.
- Achieved a 2.5 grade-point average on all college course work as well as course completion of the University of Iowa; and
- Applied for admission to a teacher education program.

**Honors in Education**

The College of Education Honors Opportunities Program is open to seniors and seniors who have attained a 3.50 grade-point average. Students with lower GPA’s 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: 75,000 Honors Seminars in Education, research mentorship with optional credit, and a student teaching program including community-based research and social activities. The Honors Opportunities Program is housed in the Cerre Belle 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.) degree. Students selecting this route must satisfy the following conditions:
  - Admission to the Graduate College;
  - Completion of the Graduate Record Examination (GRE) General Test;
  - A composite grade-point average of not less than 2.0 on undergraduate work and 3.0 in the M.A.T. Program;
  - Approval of a specific certification program (e.g., elementary education, secondary 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 and must meet the general requirements stated in the undergraduate admissions section. 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 supervisors provide for discussion and evaluation of students’ teaching experiences. The student teaching requirement may not be met by transfer credit unless unusual circumstances exist.

Admission to the senior level student teaching semester requires separate application. Applications must be submitted by March 15 of the academic year prior to the semester the student teaching is to be completed to the Office of Student Services, N310 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 minimums.

Students should consult with their advisers regarding specific requirements for the program year.

**Waverers**

Students who have completed practical-type experiences or courses that they want to have considered in lieu of program requirements should consult with their advisers.

**Urban Student Teaching**

Students who want to advance their educational interests through student
teaching in an urban setting may apply through completion of field experiences. Popular settings for urban student teaching include the CUTE Program (Cooperating Urban Teacher Education). This option is open to all education majors who meet the requirements for student teaching.

Overseas Student Teaching

Overseas student teaching experience is available in cooperation with the University of Wisconsin–Stevens Point and the University of Oxford, England. Students may study at Oxford, and many students at the University of Wisconsin–Stevens Point also study at the University of Oxford. Interested students must present the regular requirements for student teaching and must be approved by their advisor and the appropriate division chair. Overseas assignments are for eight weeks. Secondary education students are required to complete a full semester in a U.S. assignment before student teaching overseas during a second semester. Elementary education students complete eight weeks in a 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 several courses, such as HENG 1100: Human Relations for the Classroom Teacher.

Teacher Education Minors

Acceptance into a teacher education program is prerequisite to registration for most College of Education undergraduate courses. However, the College of Education does offer four minors to students interested in being better informed about education. The course combinations are designed to better inform the student, as a parent or future employer, about current methods of a local board of education. Students also may feel that a minor would help support future career objectives. The minors are general education, science education, human relations, and education psychology. Descriptions of these minors are available in the College of Education.

Teaching Certification Services

The Iowa Board of Educational Examiners issues teacher, support service, and administrative certificates. On the recommendation of Iowa colleges and universities whose programs have been approved by the Iowa Department of Education, At least one year of college education is required for Iowa Department of Education approval.

Other minors have different certification requirements that call for some type of competency testing. Many states have provisional certificates to graduates of

Education


Educational Psychology—M.A., Ph.D. Instructional Design and Technology—M.A., Ed.D., Ph.D. School Psychology—Ed.D., Ph.D.

Master of Arts in Teaching

The M.A.T. program is a 24-semester-hour (minimum) non-thesis program designed for academically superior liberal arts graduates who completed few or no professional education courses in their undergraduate program. Requirements are listed in the Curriculum and Instruction section of the Catalog.

The program code to a master’s degree and certification as a secondary teacher in the fields of English, foreign languages, home economics, or science education (must be completed by May 1982) and science education. A grade-point average of at least 3.0 in undergraduate coursework is required for admission. A maximum of 24 semester hours of graduate course work in the student’s teaching field must be completed. A minimum of 24 semester hours of graduate work 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 M.A. and the thesis M.A. programs provide more advanced coursework than does the master’s program. The nonthesis M.A. is not necessarily a terminal program, but students who expect to continue their studies in a doctoral program are urged to select the M.A. thesis program since it offers more experience in research procedures. Students who complete a nonthesis M.A. program and are admitted to a Ph.D. program must be able to submit evidence of writing and research skills to their advisor or director during the early part of their Ph.D.-level coursework. Course credits earned more than ten years before the session in 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 admission to the program, and at least 8 must be completed on campus.

Master of Science

Thesis and non-thesis programs are available for students in science education. The degree requirements are similar to those for the Master of Arts degrees postbaccalaureate program designed for
silently preparing themselves for life beyond the classroom, teaching, administration, and supervision, and special services. Of the minimum 60 semester hours required for the degree, 28 must be in the area of specialization; the rest may be earned in cognate fields, supervised experience, research, and elective courses. The research must culminate in a written report. Other requirements and regulations for the 60-hour degree are the same as for the master's degree, except that 15 semester hours of residence work on campus are required in one 12-month period or in two summer sessions, and course work completed ten years prior to the final examination can be evaluated to determine the amount of credit that may be accepted toward fulfillment of the program requirements.

Doctor of Philosophy

The Ph.D. is the highest academic degree. It is conferred upon students who have demonstrated superior scholarship and mastery of research skills in course work as well as in the preparation and defense of a dissertation.

Professional Improvement

Students are admitted to professional improvement status in a division rather than in degree candidacy. This is appropriate only for persons who are seeking to develop skills or knowledge and are not temporarily undecided about career plans. Students should file a charge of status in advance of a program objective at the earliest opportunity.

Extramural Education

Through the Division of Continuing Education, attaining College of Education courses are offered at off-campus sites and through correspondence. This is taken after formal admission to a specific program, some of their courses may be applied to both residency requirements for degrees. There are, however, special regulations governing such continuing work. Students should obtain prior approval from their respective advisors before registering in extramural courses. Students not regularly admitted to The University of Iowa also may 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 a comprehensive learning package for all students. 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 videoconferencing, and computer-managed instruction.

The Computer Resources Laboratory supports a variety of microcomputers and terminals on line with University of Iowa mainframe and microcomputers. More than 500 pieces of software are available for checkout by registered students. Multiple copies of word processors, spreadsheets, programming languages, utilities, and instructional courseware can be checked out to be used in the lab area.

The Curriculum Resources Laboratory provides instructional materials primarily for students and faculty members interested in early childhood, elementary, secondary, and special education. It brings in a biannual conference to assist in the development of instructional materials and to inform the operation of instructional research and for conferences of all types. Laboratory staff members conduct with students and faculty the college on the production of color slides, overhead transparencies, videos and audio tapes, and other materials related to instructional development. The laboratory also offers workshops and credit courses through the college.

Libraries

The Mail Library and the Psychology Library provide books, periodicals, reference books, films, ERIC microfiche, and a reserved book room for students and faculty.

Placement

The 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 skills and employment tactics. Information about job vacancies, availability of a placement file, and the opportunity to interview with school recruiters on campus. An information center with resource 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 educational tests, such as the widely used Iowa Tests of Basic Skills and Iowa Tests of Educational Development, for use in elementary and secondary schools. This department also conducts research studies in educational measurement and evaluation, publishes the results of these studies, sponsors lectures and symposia, provides consulting services and systems, and provides training experience for graduate students in measurement and statistics.

Connie Belin National Center for Gifted Education

The Iowa State Board of Regents established The University of Iowa National Center for Gifted Education in 1989. Based in the College of Education, the center conducts research and services in gifted education. As a national 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 Henry B. and Jacquet Wallace National Research Symposium on Talent Development; faculty counseling; consultation; educational assessment; museum and internship opportunities; and college work in gifted education. For more information, contact the Director, Connie Belin Center, 210 Literature Center, The University of Iowa, Iowa City, 52242.

North Central Association

The North Central Association (NCA) of Colleges and Schools is the largest and most active of six 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 college 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 represented by the College of Education. Founded more than a decade ago, it provides continuing educational and staff development opportunities for school administrators across the state.
An executive planning board of practicing school administrators and educators is responsible for programming activities. Management and operation are coordinated by faculty members of the Division of Planning, Policy, and Leadership Studies. Associated 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 Schools Program has been a service of the College of Education since 1972. The program acts as a catalyst for University faculty and students to coordinate research and class projects with schools desiring to participate in the studies. Appropriately 40 requests from University faculty or students to conduct projects using students and staff from schools in Iowa and Illinois are processed each year. The dean's office provides support services for faculty research, development, and acquisition of grants and coordinates such efforts with the University's Office of Sponsored Programs.

Special Resources

The School Program for Emotionally Disturbed Children located in the Psychiatric Hospital provides diagnostic services for children in the institutional population. The program is supported by the Psychiatric Hospital. Opportunities are available for research teaching and practical experience in school psychology.

The University Counseling Service provides services and practicum opportunities 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 opportunities for new personnel, and research projects in program development and effectiveness.

Financial Aid

Students interested in enrollment opportunities are encouraged to contact the following special 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 graduate goals at The University of Iowa.

Graduate Assistships

Individual academic programs provide opportunities for teaching, research, or service assistantships, as well as for an academic and related employment opportunities. Inquiries should be addressed to the chair of the division or to the director of the special program in which the student believes he or she can provide service or achieve an outstanding academic performance. The application has been designed for admission, but his or her written file is available for review by those responsible for selecting the assistantship(s) for the student's program. Assistantship appointments are usually, but not always, made by the program area.

Special Graduate Assistships in Education

The Iowa Testing Programs and the Iowa Measurement Research Foundation provide sufficient funds to support a limited number of special graduate assistantships or education. Students admitted to or pursuing any of the advanced degree programs offered by the College of Education are eligible to apply to them. Assistantships are available for the academic year only and are renewable for a limited number of years. Holders are assigned to work while the direction of a 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 for a college completed (undergraduate as well as graduate), salaries of recommendation, and scores on the Graduate Record Examination (GRE) General Test. The application must be filed on a special form and submitted to the director of the Iowa Testing Programs, 314 Lindquist Center, University of Iowa.

The application deadline is March 1.

College of Education

Student Loan Fund

The College of Education Student Loan Fund was established to assist college students who are facing extraordinary and unforeseen expenses while pursuing degree or certification programs. The following procedures may provide a senior or post-baccalaureate degree. Students seeking teacher certification, or a graduate student seeking an advanced degree or certification in the College of Education. He or she must have completed the equivalent of two semesters of full-time coursework at The University of Iowa, 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 the college. Educational Planning Office, 312 Lindquist Center.

College of Education Awards

Awards are presented to outstanding students in the College of Education at the spring semester meeting of the college faculty. Some of these awards include:

The John Dinkin 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 Bonner-Henry Buss Fellowship, awarded annually to a doctoral student in the field of educational measurement and statistics. Nominations 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 selection committee supplements the recipient's teaching or research responsibilities each year until graduation. In a minimum of three years.

The John Leonard Davis Memorial Award, presented annually to an outstanding graduate student in education whose specialization is adult and continuing education.

The Howard 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 Roy Eugene McClagan Award, presented each academic year to a graduate student in the College of Education for outstanding academic performance and potential for the highest level of professional promise in the field of education.

Annually, the director of the College of Education presents the Outstanding Doctoral Student of the Year Award, the Outstanding Master's Student of the Year Award, and the Outstanding Graduate of the Year Award.

The University of Iowa provides institutional and agency scholarships to graduate students. These awards are available to students enrolled in the College of Education.

The Mary H. Murphy Scholarship Program, sponsored by the College of Education, provides financial assistance to full-time graduate students who are enrolled in the College of Education. The program is open to students who are enrolled in the College of Education at The University of Iowa.

The program is designed for graduate students with a minimum of 12 graduate credits who are enrolled in the College of Education at The University of Iowa. The program is limited to students enrolled in degree programs in the College of Education.
COUNSELOR EDUCATION

Chair: Allen H. Mann
Professors: Nicholas Calvagno, Richard Guttentag, David Johns, Linda K. Johnson, Susan K. Jones, Ph.D., Virginia M. Kountz, Ph.D., Glen A. Rieke, Gerald S. Tinkham, Ph.D., Robert J. Willard

The Division of Counselor Education is primarily involved in the preparation of practitioners and scholars at the graduate level, through degree programs a student development in postsecondary education, rehabilitation counseling, counseling and human development, substance abuse counseling, and marriage and family therapy. The division also offers basic courses in interviewing and interpersonal skills for students in other professional graduate programs, as well as for undergraduates.

Admission

Detailed information on admission and program requirements is presented in the Associated Programs for Advanced Degrees, available from the Division of Counselor Education.

Admission requirements include submission of an application form and a personal statement or essay. A personal interview is conducted for selected candidates.

Scholarships

The division offers scholarships for students displaying outstanding academic achievement and financial need. Information on scholarships is available from the Office of Financial Aid.

Counselor Education in Mexico

MA in Counselor Education in Mexico

COUNSELOR EDUCATION

Chair: Allen H. Mann
Professors: Nicholas Calvagno, Richard Guttentag, David Johns, Linda K. Johnson, Susan K. Jones, Ph.D., Virginia M. Kountz, Ph.D., Glen A. Rieke, Gerald S. Tinkham, Ph.D., Robert J. Willard

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Foreign Students

Foreign students also must provide a Test of English as a Foreign Language (TOEFL) score with their application. Typically a score of 550 is required. Depending on the TOEFL score, the division may require students to take and pass University of Iowa course work in English usage that is designed especially for them.

Final 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, a teaching certificate is required for students pursuing certification in school counseling. Any special admission requirements are listed with individual programs.

Conditional Admissions

Applicants who do not meet all the minimum requirements for regular admission consideration may be admitted on a conditional basis if the faculty determines that there are strengths and promising warranting conditional status. The following are the conditional divisions:

M.A. Level—students must complete 12 semester hours of core courses (approved by an advisor) over two consecutive semesters and demonstrate a cumulative grade point average of 3.0.

P.L. Level—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 3.0.

Maintaining Candidacy

All graduate students must meet the academic standards in order to maintain their candidacy for the degree.

Maintain necessary grade point average over the entire program: M.A.—3.00, P.L.—3.50.

Successfully complete practicum, internship, or equivalent professional experience.

Maintain professional behavior consistent with the American Association for Counseling and Development's code of ethics, and any additional code of professional ethics adhered to by any agency with which the student is completing a practicum or internship.

Dissatisfaction 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 overall 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 status. 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. For Prospective Students, 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 forms are available from the Division of Counselor Education. NRES Landmark Center, The University of Iowa, Iowa City, IA 52242-1222, phone: (319) 385-5275. Applicants can check on whether an application dossier is complete by contacting the Office of Student Services, NRES Landmark Center, The University of Iowa, Iowa City, IA 52242-1222, phone: (319) 335-5050.

Applicants are notified if their application is complete within 4 to 6 weeks after the application deadline.

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 study programs, community college counseling, adult and continuing education, and external degree programs. With experience, it is a foundation for positions as student dean and college admissions counselors.

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 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 service, adult continuing education, or external degree programs.

Doctor of Philosophy

The Ph.D. program provides preparation for positions such as counselor educator, researcher, associate 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 service, 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 or represent 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 counselor 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 had at least one year of full-time work experience in rehabilitation counseling are not considered. Successful 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, clinical, 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 equivalent 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 students may apply for certification for elementary school counselor (K-6) and secondary school counselor (7-12). Postsecondary counselor certification only is available for applicants with master's degrees and postsecondary teaching certificates.

Master of Arts

The M.A. program, accredited by the Council of Accreditation in Counseling and Related Educational Programs (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 supervisors to enhance 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—M.A.

The purpose of the M.A. program is to prepare individuals to counsel persons in substance abuse counseling. The program consists of 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. A. J.
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 Counselor Education hold a wide variety of graduate assistantships. For example, many of the Institute's student service units award part-time assistantships to graduate students in the division. Applicants for assistantships should contact the chairperson of the joint graduate counselor education graduate program they plan to enter.

Courses

TC419A Aiding in Vocational/ Educational Counseling 2 s.h.

For the counseling of displaced workers, retraining, and re-evaluation of the worth of workers who are no longer employed because of their education and occupational development.

TC412B Human Sexuality 3 s.h.

Principles and problems of sexual aspects of human sexuality. Same as HN 412, PSY 414, 912.

TC5620C Culturally Diverse in Human Services Settings 3 s.h.

Exposure in training to culturally different students in training for social work practice. Effective research on the basis of the development of training for social work practice.

TC5108 Programming for the Gifted 3 s.h.

Fundamental issues, focus on non-traditional approaches to working with the gifted. Same as PS 710.

TC5109 Education of the Gifted 3 s.h.

Introduction to educational issues, curriculum, counseling, family studies, juvenile delinquency and minority issues. Same as PS 710.

TC5110 Introduction to Education Gifted Students 3 s.h.

Overview of holistic instructional systems, contrasting models and values in practice and research. Same as PS 710.

TC5135 Psychological Aspects of Women's Issues 3 s.h.

Introduction to the psychological aspects of women's roles, men's roles, and development and interpersonal relationships. Group dynamics are emphasized for change techniques.

TC5132 Marriage and Family Counseling and Psychotherapy 3 s.h.

Counseling techniques are presented in the framework of marriage and family therapy. Emphasis on the development of marital and family counseling techniques. Same as PS 710.

TC5133 Marital and Family Counseling and Psychotherapy 3 s.h.

Counseling techniques are presented in the framework of marriage and family therapy. Emphasis on the development of marital and family counseling techniques. Same as PS 710.

TC5120 Counseling of Inmates in Correctional Education-Undergraduate 2 s.h.

An introduction to counseling offenders in correctional settings. Based on contemporary treatment and education philosophies. Same as PS 710.

TC5122 Counseling for Relocated Professionals 3 s.h.

Introduction to counseling and psychotherapy for relocated professionals. Focus on adjustment and personal and professional development. Same as PS 710.

TC5121 Individual Internships in Correctional Education-Graduate 2 s.h.

An introduction to counseling offenders in correctional settings. Based on contemporary treatment and education philosophies. Same as PS 710.

TC5140 Case- Guidelines and Job Placement 3 s.h.

Program seminars to help prepare people from diverse racial, ethnic, and cultural backgrounds, to enter careers in rehabilitation counseling. Same as PS 710.

TC5142 Group Processes for Vocational Counselors 3 s.h.

Advanced theory, research, and group work in group counseling, practical guidance to professions, and fieldwork in group counseling. Same as PS 710.

TC5141 Administration of Rehabilitation Client Assessment 3 s.h.

Incorporation to the practice of prevention of adults with disabilities for rehabilitation evaluation and development.

TC5146 Group Leadership in Human Services 3 s.h.

Focus on self-directed management of group process in social settings. Concept of group leadership required. Same as PS 710.

TC5147 Foundations of Counseling 3 s.h.

Phenomenological, psychoanalytic, and humanistic schools of thought. An introduction to the major schools in counseling. Same as PS 710.

TC5145 Clinical Supervision 3 s.h.

Counselor education in colleges and universities. Includes oriental counseling, population, and research. Same as PS 710.

TC5143 Internship in Counseling for School Related Professionals 3 s.h.

Advanced training in the psychology of supervision. Includes oriental counseling, population, and research. Same as PS 710.

TC5141 Internship in Rehabilitation Counseling 2 s.h.

Functional, philosophical, and sociological orientation to rehabilitation counseling. Includes oriental counseling, population, and research. Same as PS 710.

TC5142 Rehabilitation Counseling 3 s.h.

Counseling program as an intervention in helping situations with emphasis on the development and implementation of rehabilitation practices. Same as PS 710.

TC5146 Rehabilitation Counseling 3 s.h.

Counseling program as an intervention in helping situations with emphasis on the development and implementation of rehabilitation practices for clients with disabilities. Same as PS 710.

TC5145 Internship in Vocational Counseling 2 s.h.

Advanced training in the psychology of supervision. Includes oriental counseling, population, and research. Same as PS 710.

TC5147 Internship in Vocational Counseling 3 s.h.

Counseling program as an intervention in helping situations with emphasis on the development and implementation of rehabilitation practices for clients with disabilities. Same as PS 710.

TC5146 Internship in Vocational Counseling 3 s.h.

Counseling program as an intervention in helping situations with emphasis on the development and implementation of rehabilitation practices for clients with disabilities. Same as PS 710.

TC5147 Internship in Vocational Counseling 3 s.h.

Counseling program as an intervention in helping situations with emphasis on the development and implementation of rehabilitation practices for clients with disabilities. Same as PS 710.

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Counseling program as an intervention in helping situations with emphasis on the development and implementation of rehabilitation practices for clients with disabilities. Same as PS 710.

TC5147 Internship in Vocational Counseling 3 s.h.

Counseling program as an intervention in helping situations with emphasis on the development and implementation of rehabilitation practices for clients with disabilities. Same as PS 710.
In order to be considered for admission, students must have completed a minimum of 30 semester hours of course 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 graduate area TEP, so a 5.0 grade-point average does not ensure 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 student's grade-point average falls below 2.50, the student is placed on probation for one semester. If 2.50 is not attained during the probationary interval, 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, NSU Lingquist Center, for more information on admissions criteria.

Graduate students who apply to the Graduate College for "certification only" or to a M.A.T. program so that they may apply only for admission to the teacher education program Their admission to either graduate program includes admission to the TEP. The deadline for applications for either program is June 1. Applications submitted 10 to 15 days after June 1 also are considered.

A limited number of applicants are accepted into each graduate area TEP, so meeting the Graduate College admission requirements does not ensure admission. Admissions decisions are based on grade-point average in the major and other criteria relevant to teaching. Upon admission to the TEP, students are assigned in education advisor.

Admission to Student Teaching

Admission to the TEP permits students to select certain Education courses and requires a 2.50 cumulative grade-point average. Admission to the student teaching semester, however, requires a separate application by each student. All students are required to take the Praxis II examination before being placed in the classroom in the fall. Students are encouraged to register for student teaching in their certification program.

Elementary Education

Foundation Courses

These courses may be completed before any methods courses are begun.

[Course details not provided in the image]

Elementary Education Practice: Elementary Education 3 h.

Methods Courses

Three courses taken concurrently:

[Course details not provided in the image]

Other Requirements

[Course details not provided in the image]

Area of Specialization

A minimum of 24 semester hours must be completed in one of the following areas of specialization: general education, children's language arts, children's physical education, children's science, special education. Some programs have additional requirements.

[Course details not provided in the image]

Student Teaching

[Course details not provided in the image]

Secondary Education

Undergraduate students seeking secondary certification are required to have completed the following requirements for the Bachelor of Arts, Bachelor of Science, or Bachelor of General Studies degree in the College of Liberal Arts and must complete the requirements for the Bachelor of Arts, Bachelor of Science, or Bachelor of General Studies degree in the College of Education.
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, or science education. Certification requires a major of at least 30 semester hours of course work in a subject area with at least one required course. Course requirements for each major are available in The Division of Curriculum and Instruction Office, NS9 Lindquist Center. Candidates for secondary school teaching certification also may receive approval to teach in additional subject areas by completing an approved program, of 24 or more semester hours of course work in those areas.

Secondary school teacher preparation programs are provided in the following areas:

Art
Coaching
Communication studies (speech communication/theatre arts)
English
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
Technical education
*(Available as an additional approval area only. A major in another subject 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 TEP 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 areas 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 specialist 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, NS9 Lindquist Center.

Requirements

Undergraduate candidates for certification to teach in secondary schools may complete one of the following requirements, in addition to the requirements in their major:

- Out-of-state courses in 7500-7509
  - Introduction to Teaching (a specific subject area, except science education)
  - 7500 Issues in Education
  - 7575 Educational Psychology and Measurement
  - 7580 Human Relations for the Classroom Teacher
  - One or more methods of teaching-classes in the major area
  - Competency in computer-based education (CBE) only as satisfied by taking 7640 Intro. to Microcomputer for Teachers, by examination, or by completing CBE course or module in the subject area

Students teaching

- 0.1 s.h.
- 12 s.h.

With an advisor's approval, a graduate student may elect one or more graduate courses in lieu of 7500-7509, 7510, 7575, 7580, and 7585. Students must complete the methods courses in their major teaching fields before student teaching.

For all secondary students student teaching must be done all day for a full semester. Students in secondary education may take 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 specific practical experiences 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 alternatives for student teaching and application procedures is available from the Office of Student Services, NS9 Lindquist Center. Applications of 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 one or more teaching certificates in special education. For course requirements, see specific programs listed for the Master of Arts under "Special Education." In this section of the Catalog, AIM advisors list minimum requirements under "Special Education."

Financial Aid

Early Childhood, Elementary Education

A number of teaching assistantships are available for graduate students pursuing advanced programs in early childhood and elementary education. Specific assignments vary. Some involve supervising undergraduate majors enrolled in practicums and provide teaching situations, and some involve teaching situations, and some involve teaching situations, and supervising teachers. All assistantships are classified on the half-hour level. This classification permits students to register for a maximum of 12 semester hours at credit per semester. Graduate students with graduate assistantships must register for a minimum 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 division chair.

Secondary, Special Education

A limited number of assistantships are available for graduate students pursuing advanced degrees. Hours of such assistantships may register for no more than 12 semester hours and, except with special permission, no less than 6 semester hours per semester. Assignments vary. Some involve teaching undergraduate courses of supervising practicum experiences during projects, and others are made up primarily of research activities.

Secondary education graduate students also may be eligible for assistantships in some College of Liberal Arts departments. A candidate for an assistantship should apply directly to the specific department or consult the College of Education advisor directing the program in the appropriate field.

Trainees in selected certification and master's degree programs are available in all-education education studies. The Janet Zober Memorial Steele Internship is available each year to one student who is pursuing a special education teaching certification. 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 professionals to administer programs and deliver educational 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 nonthesis options.

Admission

Students must meet the general admission requirements of the Graduate College and have an undergraduate grade-point average of 2.50. 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, as for English proficiency, complete before registering for courses. Course work recommended by English proficiency evaluation 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 nonthesis option requires 32.

Foundation Courses

7E.189 History and Philosophy of Early Childhood Education 3 s.h.
7E.190 Development and Administration of Child Care Programs 3 s.h.
7E.304 Building Foundations for Reading (Preschool and Primary) 3 s.h.
7E.307 Curriculum Development in Early Childhood (5-8 Years) 3 s.h.
7E.368 Curriculum Development in Early Childhood (0-5 Years) 3 s.h.

Total 15 s.h.

Related Courses

One of these (or an approved substitute):
7P.206 Advanced Child Development 3 s.h.
3L.114 Cognitive Development of Children 3 s.h.

One of these:
17E.114 Parent-Child Relationships 3 s.h.
7E.134 Parent-Teacher Communication 3 s.h.
7P.253 Consultation Theory and Practice 3-4 s.h.

Total 5-6 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 language arts, mathematics, science, social studies, music, art, children's literature.

Human Relationships

Four of these:
7U.190 Exceptional Persons 3 s.h.
7E.206 Supervision of Student Teachers and Auxiliary Personnel 2-3 s.h.
7E.114 Parent-Child Relationships 3 s.h.
7E.134 Parent-Teacher Communication 3 s.h.
7P.250 Consultation Theory and Practice 2-3 s.h.

Total 10-12 s.h.

Community College Teaching

All of the following must be completed for the endorsement Post-Secondary Certification for Arts and Sciences.
7H.171 The Community College 3 s.h.
7E.102 Curriculum Development in Community College and Health Careers 3 s.h.
7E.270 Internship 1-5 s.h.
7E.175 Post-High School Staff Development Workshop 0-2 s.h.
7E.167 Teaching of Adults 3 s.h.
7H.102 College Teaching Internship 3 s.h.
7P.149 Introduction to Educational Measurement 3 s.h.

Counseling

7C.142 Introduction to Marriage and Family Counseling and Psychotherapy 3 s.h.
7C.115 Microcomputer 3 s.h.
7C.150 Group Techniques for Related Professions 3 s.h.
7C.222 Interventions for Primary Prevention in the Schools 3 s.h.
7P.263 Consultation Theory and Practice 2-3 s.h.

Total 12-15 s.h.

Social Work

42-43 Organization and Community Practice 3 s.h.
42-42 Family Violence 3 s.h.
42-22 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.150 Introduction to Educational Measurement 4 s.h.
7E.252 Field Service Project 3 s.h.
7E.390 M.A. Thesis in Early Childhood and Elementary Education 2 s.h.

Total 5-10 s.h.

Comprehensive Examinations

All students take one written examination in general early childhood education. SYNthesis students take a second written examination in their elected area of specialization. Students take the second oral exam related to their thesis or field-service project.

Note: This program does not lead to the Iowa endorsement for teaching in preschool-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 lead teachers, grade level or subject area supervisors, curriculum consultants, or master teachers.

Admission

Admission requirements are the same as those established by the Graduate College. In addition, applicants must have completed an undergraduate program of teacher preparation in either early childhood or elementary education. Graduates students who have not completed an undergraduate program in elementary education must be admitted initially on "condition only" students.

Requirements

The thesis option requires 38 semester hours of credit; the nonthesis option 37-38 semester hours must be taken in University of Iowa courses, with 8 semester hours completed on-campus. Course work must be taken within three years. At the time of the admission does not count toward the M.A. degree.

Foundations and Educational Psychology

Two of these (4-7 s.h.):
7F.102 History of American Education 3 s.h.
7E.117 Philosophies of Education 3-5 s.h.
7E.130 Educational Sociology 2-3 s.h.
7E.131 Educational Psychology 3 s.h.
7E.143 Introduction to Statistical Methods 3 s.h.
7E.150 Introduction to Educational Measurement 3 s.h.
7E.181 Introduction to Theories of Learning 3 s.h.
7E.190 Educational Research 3 s.h.

Research and Curriculum

All of these (7 s.h.): 7E.204 Seminar: Current Issues and Research in Elementary Education 4 s.h.
Admission

Students must meet the general requirements of the Graduate College, have an undergraduate grade-point average of 3.00, hold an early childhood, elementary, or secondary school teaching certificate, and show evidence of completing two years of a successful teaching experience.

Requirements

A minimum of 33 semester hours with thesis, 36 without thesis, is required. The following courses are required of all candidates:

- TP-170 Introduction to the Psychology of Reading
- TP-171 Reading Clinic: Teaching Techniques
- TP-172 Reading Clinic: Teaching Procedures
- TP-204 Building Foundations for Reading Preliminary and Primary
- TP-205 Supervision of Intermediate Grade Reading
- Either of the following courses:
  - TP-194 Methods: High School Reading
  - TP-195 Developing Reading Skills in Secondary Schools
- Either of the following courses:
  - TP-159 Introduction to Educational Measurement
  - TP-174 Diagnostic and Prescriptive Approaches to Reading Instruction
- Either of the following courses:
  - TP-204 Building Foundations for Reading Preliminary and Primary
  - TP-205 Supervision of Intermediate Grade Reading

M.A. in Developmental Reading

The degree program prepares graduate students for positions as reading specialists in elementary and grades 1-12. The course work required develops the skills, knowledge, and competencies needed for supervisor, curricular, and consultative roles in reading. The program allows for a background in reading for students who wish to specialize further in the area and eventually to teach 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
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 admitted to the program.

Requirements
The program requires the completion of 90 semester hours of credit, including a minimum of 60 semester hours at the undergraduate level. The core curriculum consists of 60 semester hours of credit, including a minimum of 30 semester hours at the upper division level. The program also requires the completion of a minimum of 15 semester hours of credit in the professional program, including a minimum of 9 semester hours of credit in the professional program at the graduate level.

Graduate coursework must be selected from courses approved by the Graduate Committee. Courses in the professional program must be selected from courses approved by the Graduate Committee. The core curriculum consists of courses in the professional program, including a minimum of 9 semester hours of credit in the professional program at the graduate level.

Requirements
The program requires the completion of 60 semester hours of credit, including a minimum of 30 semester hours at the undergraduate level. The core curriculum consists of 30 semester hours of credit, including a minimum of 15 semester hours of credit in the professional program, including a minimum of 9 semester hours of credit in the professional program at the graduate level.

Graduate coursework must be selected from courses approved by the Graduate Committee. Courses in the professional program must be selected from courses approved by the Graduate Committee. The core curriculum consists of courses in the professional program, including a minimum of 9 semester hours of credit in the professional program at the graduate level.

M.A. in Communication Studies
The program prepares teachers and supervisors of speech communication for positions in pre-collegiate and post-secondary schools.

Admission
Candidates must have a grade-point average of 2.75. Candidates are expected to be highly motivated and to have a strong background in speech communication. The program is designed for students who are interested in pursuing a career in the field of communication studies.

Requirements
A minimum of 36 semester hours of credit is required for the degree. The program consists of courses in the professional program, including a minimum of 9 semester hours of credit in the professional program at the graduate level.

Graduate coursework must be selected from courses approved by the Graduate Committee. Courses in the professional program must be selected from courses approved by the Graduate Committee. The core curriculum consists of courses in the professional program, including a minimum of 9 semester hours of credit in the professional program at the graduate level.
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 advisor. The project or paper may be circulated to the committee with the comprehensive examination.

A comprehensive examination consisting of three two-hour seminars to be defined and limited by the student and an advisor 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 (36-42 s.h.)
- 75:116 Curriculum Foundations 2-3 s.h.
- 70:171 Philosophies of Education (or its equivalent) 2 s.h.
- 70:257 Educational Measurement and Evaluation 3 s.h.
- 70:259 Construction and Use of Evaluation Instruments or 70:159 Introduction to Educational Measurement 3 s.h.
- 70:291 Junior High School and Middle School Curriculum 3 s.h.
- 70:291 Secondary School Curriculum 3 s.h.
- 70:300 Design and Organization of Curriculum 3 s.h.
- Research work, selected in consultation with the advisor, typically 70:160 Intensive in Statistical Methods 3 s.h.
- Cognates, in a subject field such as English 4-6 s.h.
- Electives—selected in consultation with advisor 4-6 s.h.
- Thesis, for students electing a thesis program 75:330 Master's Degree Thesis 2-4 s.h.
- Total 30-32 s.h.

Two three-hour comprehensive examinations, one in curriculum and one in a related field of education or in a cognate field, or three two-hour examinations.

**Ph.D. in Curriculum and Supervision**

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 50 semester hours including approved graduate course work is required.
- 70:146 Curriculum Foundations 2-3 s.h.
- 70:281 Junior High School and Middle School Curriculum 3 s.h.
- 70:291 Secondary School Curriculum 3 s.h.
- 70:300 Design and Organization of Curriculum 3 s.h.
- 70:391 Problems of Curriculum Planning 3 s.h.
- At least two advanced supervision courses in secondary or elementary school subject fields 6 s.h.
- 70:257 Educational Measurement and Evaluation 3 s.h.
- 70:259 Construction and Use of Evaluation Instruments or 70:159 Introduction to Educational Measurement 3 s.h.
- 70:291 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 advisor: Recommended Electives include: 70:120 Educational Sociology 2 s.h.
- 70:117 Philosophies of Education 2 s.h.
- 70:131 Educational Psychology 3 s.h.
- 70:171 Introduction to Psychology of Reading 3 s.h.
- 71:207 Administrative Leadership Theory 4 s.h.
- 71:232 Introduction to Instructional Design and Technology 3 s.h.
- 71:300 Exceptional Persons 3 s.h.
All doctoral candidates are required to complete at least 8 semester hours of cognate work in areas such as sociology, psychology, or political science.
- 70:450 Ph.D. Thesis 10-18 s.h.
Candidates take three three-hour comprehensive examinations in secondary school curriculum and two related fields in education or in a cognate field.

**M.A. in English Education**

The program prepares supervisors of English, department chairmen, curriculum specialists for secondary schools, and teachers of English in college preparatory work. 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 portions of the Graduate Record Examination (GRE).

**Requirements**

Students must maintain a 3.00 grade-point average while enrolled in the program.

- Students specialize in English education and one or two other areas. The other areas may be: literature, English and secondary school teaching, curriculum, reading, writing, speech and drama, journalism, language development, literature for children, and adolescents. Students and their advisors plan the program of study. Nine semester hours must be earned in courses numbered 200 or above. Students must pass a comprehensive examination in English literature 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 major in English and no professional education courses. Successful completion of the program qualifies students to receive certification as secondary school teachers of English.

**Admission**

Applicants must have a bachelor's degree in English and a minimum undergraduate grade-point average of 2.80. From this is a certification program, candidates must not pursue any other degree simultaneously. Applicants are expected to have no more than 5 semester hours in coursework in professional education courses prior to admission.

**Requirements**

The M.A.T. program must complete a minimum of 45 semester hours. This includes at least 18 semester hours of English courses offered by the Department of English, with the advisor to supplement the undergraduate major, and the following professional education courses:

- 70:131 Educational Psychology 3 s.h.
- 70:132 History of Western Education 3 s.h.
- 70:120 Educational Sociology 3 s.h.
- 70:117 Philosophies of Education 3 s.h.
- 70:130 Individual Projects in Laboratory Practice 3 s.h.
- 70:132 Relationships for the Classroom Teacher 3 s.h.
- 70:450 Methods: High School Reading 3 s.h.
- 70:455 Developing Reading Skills in the Secondary School 3 s.h.
Basic competency in microcomputing
75:155 Methods: English 3 s.h.
75:287 Research Paper and Student Teaching 2 s.h.
75:150-152 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 French, and the second part covers content of the upper division courses and program expectations. A comprehensive examination administered by the Department of French is required.

Ph.D. in English Education
This program is administered by the Graduate College. It prepares teacher educators in English, specialists in literature for young children, specialists in reading at secondary and junior college levels, specialists in writing at secondary and junior college levels, and coordinators/supervisors of English 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 3.60, 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 required to provide evidence of the successful completion of the Graduate Record Examination (GRE) General Test, and two years of successful teaching experience. Students admitted to the program are required to provide evidence of the successful completion of a master's degree in English literature, English education, or related field. They must maintain a grade-point average of 3.00 while enrolled in the program. Candidacy is reviewed annually.

Requirements
A minimum of 54 semester hours is required. This includes 18 semester hours in the area of specialization—teaching of English—including four of the following courses:

75:260 Rereading of Elementary School Language Arts (Language Arts) 3 s.h.
75:308 Seminar: Research and Current Issues (Sec. 99) ARR.
75:315 M.A. Seminar: English Education 3 s.h.
75:455 Prof. Seminar: English Education 2-4 s.h. (required for two or more registrations)

Cognate and electives (50-63 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, literary criticism, educational methodology, and speech and dramatic arts. Students and their advisor 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.

Graduation
Students must have a grade-point average of 3.60, a minimum composite score of 1000 on the verbal and analytical portions of the Graduate Record Examination (GRE). General Test, and two or more years of successful teaching experience. Students must take comprehensive examinations in three areas: teaching of English, language arts, and an elective area. The minimal requirements for eligibility to write comprehensive examinations vary; the general requirements are stated in course descriptions. Students must 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 semester hours of graduate courses in a foreign language department and the following professional education courses:

75:26 Introduction to Foreign Language (credit not applicable to M.A.T. degree) 2 s.h.
75:131 Educational Psychology 3 s.h.
75:137 History of Western Education 3 s.h.
75:111 Philosophy of Education 2 s.h.
75:135 Topics in Foreign Language Instructional Technology (same as 95:107, 95:117) 2 s.h.
75:116 Methods: Foreign Language 3 s.h.
75:191-192 Observation and Laboratory Practice in the Secondary School 12 s.h.
75:187 Seminar: Curriculum and Student Teaching 1 s.h.
75:130 Human Relations for the Classroom Teacher 3 s.h.

A comprehensive examination covering the candidate's knowledge and proficiency in the language, literary or cultural analysis, and foreign language education.

M.A.T., M.A. 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 better translation 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 75:205 Current Issues in Mathematics Education (2-3 s.h.), but remaining three courses are to be selected from the following:

75:339 Workshop in Secondary School Mathematics 1-3 s.h.
75:331 Computer-Based Teaching of Secondary School Mathematics 2-3 s.h.
75:216 The Teaching of Geometry 2-3 s.h.
75:238 Teaching the Low Achiever in Mathematics 3-3 s.h.
75:229 Teaching of Algebra 3-3 s.h.
75:335 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 in mathematics education, 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.

These two-hour comprehensive examinations in one in secondary mathematics education, secondary mathematics education, 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. The core master's program for either pure mathematics or applied mathematics as described below.

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
220M110 Introduction to Analysis I 3 s.h.
220M116 Introduction to Analysis II 3 s.h.
220M120 Abstract Algebra I 3 s.h.
220M121 Abstract Algebra II 3 s.h.
220M132 General Topology 3 s.h.

Applied Mathematics Core
220M142 Intermediate Differential Equations 3 s.h.
220M144 Introduction to Partial Differential Equations 2-3 s.h.
220M170 Numerical Analysis
Nonlinear Equations and Approximation Theory 1 s.h.
220M171 Numerical Analysis
Differential Equations and Linear Algebra 3 s.h.
220M174 Optimization Techniques 3 s.h.

Two courses in mathematics education:

Comprehensive examination of at least five hours of the required courses in either pure mathematics or applied mathematics, and education courses. The examination requires the candidate's knowledge of mathematics and of the specific content of 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 teachers 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 may 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 degree core requirements for pure or applied mathematics described under "Master of Science in Mathematics with Education Option" in this section of the Catalog. Courses counted toward a graduate degree in mathematics or applied mathematics are complete for mathematics requirement.

Admission
The applicant must be a certified music teacher or in the process of completing certification requirements. An undergraduate grade-point average of 2.50, excluding grades in seminars, is required for admission to regular status.

The program is administered by the School of Music in cooperation with the College of Education. Application is made to the School of Music.

Requirements
General:
220M120 Introduction to Gravas
Study in Music 2 s.h.

Theory:
220M130 Introduction to Contemporary Analysis and Theory 3 s.h.
220M132 Elective 3 s.h.

Specific hour and course requirements in the theory area are determined by score on the advisory examinations.

History and Literature:
220M130 Advanced History and Literature of Music I 3 s.h.
220M132 Advanced History and Literature of Music II 3 s.h.

Specific hour and course requirements in the history and theory area are determined by score on the advisory examinations. Students electing to major in music must complete 25 of the 32 credits required in music history and theory.

"School of Music" in the College of Liberal Arts section of the Catalog.

Electives:
240M130 Curricular Development in Music Education 2 s.h.
240M132 Foundations of Music Education 2 s.h.

Electives to be selected in consultation with the adviser (may include thesis).

Ensemble:
2 semester hours are required.

The amount of electives credit applicable toward the M.A. degree depends on scores earned in the music advisory examinations and the amount of credit earned in music education electives.

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 therapy, and music history and literature.

M.A. in Music Education
The program provides students with deeper insights into music, the theory and practice of music education, and the role of music in the school curriculum. The degree program may be taken with thesis (30-semester-hour minimum) or without (33-semester-hour minimum).
**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;
- College-level music education coursework and 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 a 2.5 grade-point average on graduate work (excluding grades in seminars), have a score above the 50th 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 admissions are fully determined.

The program is administered by the School of Music. In conjunction with the College of Education, Application is made to the School of Music.

**Requirements**

The Ph.D. degree is granted on the basis of achievement, as determined by course grades, comprehensive and final examinations, and not on the accumulation of semester hours of credit. The course requirements and semester hour credits are minimum requirements for the typical student in preparation for performance on the comprehensive and final examinations.

- **25:21 Introduction to Graduate Study in Music**: 3 s.h.
- **25:259 Musical Acoustics**: 3 s.h.
- **25:240 Introduction to Contemporary Analysis and Theory**: 3 s.h.
- **25:145-150**: 3 s.h.
- **Music History and Literature (15-15 s.h.)**
  - **25:301 Advanced History and Literature of Music**: 3 s.h.
  - **25:392 Advanced History and Literature of Music**: 3 s.h.
  - **Elective (25:309, 319)**: 3 s.h.
  - **Applied and Ensembles**: 4 s.h.
  - **Electives**: 6 s.h.
- **Music Education (25 s.h.)**
  - **25:144 Psychology of Music**: 2 s.h.
  - **25:189 Behavioral Research in Music**: 3 s.h.
  - **25:394 Curriculum Development in Music Education**: 2 s.h.
  - **25:249 Foundations of Music Education**: 2 s.h.
  - **25:445 Social and Psychological Factors in Music Education**: 3 s.h.
  - **25:141 Measurement and Evaluation in Music Education**: 3 s.h.
  - **25:342 Supervision and Administration in Music Education**: 2 s.h.
  - **25:379 Experimental Research in Music Education**: 3 s.h.
- **25:146 Introduction to Statistical Methods**: 3 s.h.
- **25:424 Selected Applications of Statistical Techniques**: 2 s.h.
- **M.A. level requirements**
  - Students select elective courses in consultation with their advisor, based on advisory examination scores and professional needs and goals. Subject areas include applied music; conducting, ensemble, theory, history and literature, music education, education, statistics, and psychology.
- **Dissertation, Comprehensive Examination**
  - Students earn a minimum of 12 semester hours for work on a dissertation.
  - The comprehensive examination is an inclusive evaluation of the student's mastery of selected fields of study. Candidates must demonstrate fundamental knowledge in the areas of theory and practice of music education, research design and technique, specialized music theory and analysis, music education theory and analysis. The comprehensive examination is divided into: (a) music education theories, methods, and practices, and research techniques; music theories and analyses, music history and literature, and a specialized minor area.

- **M.A., Ph.D. in Physical Education**
  - Master of Arts and Doctor of Philosophy programs in physical education are described in the College of Liberal Arts section of the Catalog.

- **M.A.T. in Science Education**
  - The M.A.T. degree program is designed for students who have an undergraduate degree in one of the sciences and wish to become certified to teach science in a formal educational setting. Students completing the program and fulfilling the requirements of the course work in science required by an endorsement program qualify 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 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: 75:181 Educational Psychology 3 s.h.
  - Component 4: 75:152 Science Methods I: Elementary School Seminar and Practicum 2 s.h.
  - Component 5: 75:152 Science Methods II: Resources, Research, Teaching Strategies, and Curriculum Development in the K-12 Audience 3 s.h.
  - Component 6: 75:152 Science Methods III: Multidisciplinary High School 2 s.h.
  - 75:190 Elementary School Special Subject Area Student Teaching 3 s.h.
  - Component 7: 75:187 Seminar: Curriculum and Student Teaching 3 s.h.
  - 75:199 Individual Projects in Laboratory Program 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 3 s.h.
  - Courses 4, 5, 6, and 7 must be taken in sequence and only one course per semester. These courses are not offered summer sessions.

- **Science Core**
  - 97:128 Meaning of Science 2 s.h.
  - 97:330 Science in Historical Perspective 2 s.h.
  - 97:102 Social and Educational Applications of Earth Sciences and Environmental Sciences or 97:103 Social and Educational Applications of Biological Sciences 3 s.h.
  - 97:105 Social and Educational Applications of Physical Sciences 3 s.h.
  - Science electives 11+.

- **M.S. in Science Education**
  - This degree is designed for students who want to pursue advanced science education specialization in teaching (kindergarten through college) or related fields such as medical education, museum programs, and
textbook editing. It is offered with or without thesis.
The program is administered by the College of Education.

Admission
Candidates must have a 2.50 undergraduate grade-point average and usually must have an undergraduate degree in one of the sciences or science education. Applicants must have teaching certification unless they are preparing for careers in allied health, museums, or community colleges.

Requirements
A total of 32 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
7E/7S.250 Science Education: Issues, History, and National Standards 3 s.h.
7E/7S.250 Science Education and the Nature of Science 3 s.h.
7E/7S.257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
7E/7S.258 Science Education: Research Models and Content-Specific Schemes 3 s.h.
*7S.350 Ph.D. Internship 1-3 s.h.
7E/7S.350 Science Education Internship: Teacher Education, Supervision, and Administration 1-3 s.h.
*7S.357 Science Education Internship: Teaching and Learning Strategies 1-3 s.h.
7S.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, biology, chemistry, environmental studies, geology, microbiology, physics, radiation research, and zoology, should include a concentration of 15 semester hours in at least one field of science.

Curriculum Studies (6 s.h.)
Science and applied science courses selected from an area other than the specialization or the specialization area.

Correlatives (5-6 s.h.)
Science and applied science courses taken in criminology and criminal justice.

Ed.S. in Science Education
The Ed.S. in Science Education is an interdisciplinary program designed for the master's and the Ph.D. degree. It is recommended for state, regional, or local science supervisors as well as for instructors in community colleges and small four-year liberal arts colleges.

The program is administered by the College of Education.

Admission
Candidates must have a 3.00 grade-point average on all undergraduate and graduate work undertaken prior to application for admission. Candidates usually are expected to have the equivalent of an undergraduate major in one of the sciences or science education.

Requirements
A minimum of 60 semester hours of course work, which must include the courses listed below, courses taken toward the requirements for a master's degree may be applied to this total.

Science Education (24 s.h.):
7E/7S.250 Science Education: Issues, History, and National Standards 3 s.h.
7E/7S.250 Science Education and the Nature of Science 3 s.h.
7E/7S.257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
7E/7S.258 Science Education: Research Models and Content-Specific Schemes 3 s.h.
*7S.350 Ph.D. Internship 1-3 s.h.
7E/7S.350 Science Education Internship: Teacher Education, Supervision, and Administration 1-3 s.h.
*7S.357 Science Education Internship: Teaching and Learning Strategies 1-3 s.h.
7S.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, biology, chemistry, environmental studies, geology, microbiology, physics, radiation research, and zoology, should include a concentration of 15 semester hours in at least one field of science.

Curriculum Studies (6 s.h.):
An integrated group of supporting courses selected from a limited number of areas such as education, applied science, science, and historiography of science, in consultation with the adviser.

A special research or curriculum development project is required, resulting in a written report suitable for publication. Four semester hours of credit are assigned for this research project.

Students take a comprehensive examination that consists of three parts: one dealing with science education, another with an area of science, and a third with the correlatives studies area.

Ph.D. in Science Education
This degree is appropriate for qualified candidates who aspire to college and university positions as science educators, major supervisory posts in national, state, and local systems; teaching positions in the sciences at small liberal arts colleges; positions as instructors of general education science courses and areas at major colleges; positions as research directors in science education; and positions in medical education.

The program is administered by the College of Education.

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 3.50 grade-point average on all graduate work taken prior to making the application.

Requirements
A minimum of 102 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
7E/7S.250 Science Education: Issues, History, and National Standards 3 s.h.
7E/7S.257 Science Education and the Nature of Science 3 s.h.
7E/7S.257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
7E/7S.258 Science Education: Research Models and Content-Specific Schemes 3 s.h.
*7S.350 Ph.D. Internship 1-3 s.h.
7E/7S.350 Science Education Internship: Teacher Education, Supervision, and Administration 1-3 s.h.
*7S.357 Science Education Internship: Teaching and Learning Strategies 1-3 s.h.
7S.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, biology, chemistry, environmental studies, geology, microbiology, physics, radiation research, and zoology, should include a concentration of 15 semester hours in at least one field of science.

Curriculum Studies (6 s.h.):
An integrated group of supporting courses selected from a limited number of areas such as education, applied science, science, and historiography of science, in consultation with the adviser.

A special research or curriculum development project is required, resulting in a written report suitable for publication. Four semester hours of credit are assigned for this research project.

Students take a comprehensive examination that consists of three parts: one dealing with science education, another with an area of science, and a third with the correlatives studies area.

Ph.D. in Science Education
This degree is appropriate for qualified candidates who aspire to college and university positions as science educators, major supervisory posts in national, state, and local systems; teaching positions in the sciences at small liberal arts colleges; positions as instructors of general education science courses and areas at major colleges; positions as research directors in science education; and positions in medical education.

The program is administered by the College of Education.

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 3.50 grade-point average on all graduate work taken prior to making the application.

Requirements
A minimum of 102 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
7E/7S.250 Science Education: Issues, History, and National Standards 3 s.h.
7E/7S.257 Science Education and the Nature of Science 3 s.h.
7E/7S.257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
7E/7S.258 Science Education: Research Models and Content-Specific Schemes 3 s.h.
*7S.350 Ph.D. Internship 1-3 s.h.
7E/7S.350 Science Education Internship: Teacher Education, Supervision, and Administration 1-3 s.h.
*7S.357 Science Education Internship: Teaching and Learning Strategies 1-3 s.h.
7S.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, biology, chemistry, environmental studies, geology, microbiology, physics, radiation research, and zoology, should include a concentration of 15 semester hours in at least one field of science.

Curriculum Studies (6 s.h.):
An integrated group of supporting courses selected from a limited number of areas such as education, applied science, science, and historiography of science, in consultation with the adviser.

A special research or curriculum development project is required, resulting in a written report suitable for publication. Four semester hours of credit are assigned for this research project.

Students take a comprehensive examination that consists of three parts: one dealing with science education, another with an area of science, and a third with the correlatives studies area.

Ph.D. in Science Education
This degree is appropriate for qualified candidates who aspire to college and university positions as science educators, major supervisory posts in national, state, and local systems; teaching positions in the sciences at small liberal arts colleges; positions as instructors of general education science courses and areas at major colleges; positions as research directors in science education; and positions in medical education.

The program is administered by the College of Education.

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 3.50 grade-point average on all graduate work taken prior to making the application.

Requirements
A minimum of 102 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
7E/7S.250 Science Education: Issues, History, and National Standards 3 s.h.
7E/7S.257 Science Education and the Nature of Science 3 s.h.
7E/7S.257 Science Education: Teaching, Learning, and Curriculum Models 3 s.h.
7E/7S.258 Science Education: Research Models and Content-Specific Schemes 3 s.h.
*7S.350 Ph.D. Internship 1-3 s.h.
7E/7S.350 Science Education Internship: Teacher Education, Supervision, and Administration 1-3 s.h.
*7S.357 Science Education Internship: Teaching and Learning Strategies 1-3 s.h.
7S.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, biology, chemistry, environmental studies, geology, microbiology, physics, radiation research, and zoology, should include a concentration of 15 semester hours in at least one field of science.

Curriculum Studies (6 s.h.):
An integrated group of supporting courses selected from a limited number of areas such as education, applied science, science, and historiography of science, in consultation with the adviser.

A special research or curriculum development project is required, resulting in a written report suitable for publication. Four semester hours of credit are assigned for this research project.

Students take a comprehensive examination that consists of three parts: one dealing with science education, another with an area of science, and a third with the correlatives studies area.

Ph.D. in Science Education
This degree is appropriate for qualified candidates who aspire to college and university positions as science educators, major supervisory posts in national, state, and local systems; teaching positions in the sciences at small liberal arts colleges; positions as instructors of general education science courses and areas at major colleges; positions as research directors in science education; and positions in medical education.

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 after 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 completed major paper or essay also is required. Typically, applicants to Program A are expected to build a secondary teaching certificate. After declaration of a social studies education major, the program requires a minimum of 15 course credits in the social sciences, including at least a 3.00 grade-point average.

Program A Requirements

Program A students must complete 38 semester hours distributed among history, social sciences, or related areas, with a minimum of 10 semester hours in each of three fields. Nine to 12 total 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 research or investigative problem in history or social sciences, or in related areas, in which the thesis director is a member of the appropriate department; an investigative problem in social studies education, in which 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 36-45 semester hours, consisting of the courses listed below. All of the following courses must be completed, but students may elect to take some of the course work in the process of completing the bachelor's degree. In such cases, the number of hours is reduced accordingly, but in no case is the number of hours in the master's degree program to be less than 38. In all instances, the student must take appropriate work for meeting all Iowa Department of Education requirements for teacher certification.

Professional Education Courses:

75:100 Issues in Education 2 s.h.
75:133 Educational Psychology 3 s.h.
75:188 Human Relations for the Classroom Teacher 3 s.h.
75:190 Introduction to Instructional Design and Technology 3 s.h.
75:170 Methods: Social Studies 3 s.h.
75:177 Philosophies of Education or
75:130 Educational Sociology 3 s.h.
75:277 Seminar: Social Studies Education 3 s.h.
75:190 Observation and Laboratory Practice in the Secondary School 6 s.h.
75:195 Observation and Laboratory Practice in the Secondary School 6 s.h.
Candidiates also are required to register for a practicum in a public school.

Subject Area Specializations Courses:

Fifteen semester hours of course work in one or two history or other social science fields must be selected in consultation with the advisor.

Comprehensive Examination

The comprehensive examination consists of three parts: a two-hour examination in the more specialized area and a two-hour examination in general professional education, and a two-hour examination in social studies education.

Ph.D. in Social Studies Education

This program is administered by the College of Education. It prepares secondary school superintendents, 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) General Test score of 1200 (composite of verbal and quantitative) is preferred. Seminar papers or field research are required as equivalent if no thesis was written at 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 divided 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 590, 690, 692, or 790-93 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's program and may consist of foreign languages or other requirements. Usually, statistics plus research techniques in one or more of the chosen fields or in a language is required.

Comprehensive Examinations

Students take three three-hour examinations, one in each of the areas of study. Depending on the distribution of work taken, the hours of written examinations may be rearranged. The Ph.D. examining committee consists of a minimum of the faculty member from each of the liberal arts disciplines and one from social studies education. The remaining members (to make up the minimum of six 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 examinations.

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 areas, which is completed in consultation with the dissertation director. The dissertation must be a reflection of the student's work, which is unique to the dissertation director. 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 reevaluation.

Special Education

The division offers special education programs in those 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 study 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 in 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) and an advanced verbal and quantitative GRE score of 100.

Specialist in Education: A graduate grade-point average of 3.25 and a combined verbal and quantitative GRE score of 1000.

Doctor of Philosophy: An undergraduate grade-point average of 3.00 or a graduate grade-point average of 3.50, with an earned master's degree in the specific area of study in which the candidate has obtained an advanced level of specialization, and a combined verbal and quantitative GRE score of 1000. For students without a 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 candidates' likelihood to succeed in the division. This analysis may include consideration of available resources, comparative standing, and specific program requirements (intended primarily to certificate 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;
Couples 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:
TU101 Exceptional Persons 3 s.h.
TU134 Parent/Teacher Communication 3 s.h.
TU206 Practicum with Exceptional Persons 3 s.h.
TU208 Assessment of Learning Difficulties 1-3 s.h.

Program Specializations

Learning Disabilities
A core of courses in learning disabilities (LD) is required for all students. It includes:
TU103 Introduction to Learning Disabilities 3 s.h.
TU203 Supervised Teaching with Learning Disability 5 s.h.
TU209 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:
TU171 Reading Clinic: Teaching Techniques 2-3 s.h.
TU172 Reading Clinic: Teaching Practice 2-3 s.h.
TU173 Teaching Elementary School Mathematics 2-3 s.h.
TU211 Methods: Children with Learning Disabilities 3 s.h.
TU173 Secondary Education and Transition 3 s.h.

TU194 Methods: High School Reading 2-3 s.h.
TU205 Developing Reading Skills in the Secondary Schools 2-3 s.h.
TU209 Methods: Adolescents with Learning Disabilities Total 3 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:
TU171 Reading Clinic: Teaching Techniques 2-3 s.h.
TU172 Reading Clinic: Teaching Practice 2-3 s.h.
TU173 Teaching Elementary School Mathematics 2-3 s.h.
TU211 Methods: Children with Learning Disabilities 3 s.h.
TU173 Secondary Education and Transition 3 s.h.

TU194 Methods: High School Reading 2-3 s.h.
TU205 Developing Reading Skills in the Secondary Schools 2-3 s.h.
TU209 Methods: Adolescents with Learning Disabilities Total 3 s.h.

TU205 Methods: High School Reading 2-3 s.h.
TU205 Developing Reading Skills in the Secondary Schools 2-3 s.h.
TU209 Methods: Adolescents with Learning Disabilities Total 3 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 (BD) is required for all students. It includes:
TU112 Introduction to Behavioral Disorders 3 s.h.
TU210 Characteristics and Programs of Persons with Severe Behavioral Disorders 2 s.h.
TU211 Interventions: Persons with Severe Behavioral Disorders 2 s.h.
TU210 Behavior Principles 1-3 s.h.
TU206 Supervised Teaching with Behavior Disorders 5 s.h.
TU209 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:
TU202 Methods: Children with Behavioral Disabilities 3 s.h.
Total 31 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:
TU204 Methods: Adolescents with Behavior Disorders 3 s.h.
TU121 Career Education and Transition 3 s.h.
Total 54 s.h.

Students completing an M.A. degree also must complete the following:
TU206 Practicum with Exceptional Persons (either autism or severe behavior disorders) 2 s.h.
TU211 Characteristics and Programs: Persons with Autism 2 s.h.
TU211 Interventions: Persons with Autism 2 s.h.
TU205 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:
TU210 Mental Retardation 3 s.h.
TU206 Moderate/Severe/Profound 3 s.h.
TU209 Seminar: Graduate Supervised Teaching 1 s.h.
TU220 Supervised Teaching with Mild Mentally Retarded 5 s.h.

TU210 Mental Retardation 3 s.h.
TU206 Moderate/Severe/Profound 3 s.h.
TU209 Seminar: Graduate Supervised Teaching 1 s.h.
TU220 Supervised Teaching with Mild Mentally Retarded 5 s.h.
TU 244 Supervised Teaching: Moderate Mentally Retarded 3 s.h.
Students seeking an endorsement in the area of Elementary Mental Retardation—Moderate may meet the requirements for certification in the area of Physically Handicapped (K-6) to complete the following courses: 3 s.h.
TU 245 Methods: Children with Mild Mental Retardation 3 s.h.
TU 231 Teaching Elementary School Mathematics 3 s.h.
TU 294 Methods: High School Reading 2 s.h.
or
TU 230 Developing Reading Skills in the Secondary School 2 s.h.
TU 231 Career Education and Transition 3 s.h.
Total 25-30 s.h.

The remainder of the required 26 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—Moderate/Mild may meet the requirements for certification in the area of Physically Handicapped (K-6) to complete the following courses: 3 s.h.
TU 210 Introduction to Speech and Hearing Processes and Disorders 3 s.h.
TU 236 Methods: Children with Physical Disabilities 3 s.h.
TU 135 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: Early Childhood Teaching 3 s.h.
TE 212 Educational Psychology and Measurement 3 s.h.
TP 360 Human Relations for the Classroom Teacher 3 s.h.
TE 291 Audiovisual Equipment for Instruction 1 s.h.
TE 202 Introduction to Microcomputer Operation/Teaching 1 s.h.
The following courses, in addition to the above core requirements, form the program of study for early childhood special education.

TU 211 Interdisciplinary Programming for Disabled Children with Disabilities 2 s.h.
TU 222 Development of Young Children with Disabilities 2 s.h.
TU 275 Teaching Early Childhood Special Education Ages 0-3 3 s.h.
TU 274 Teaching Early Childhood Special Education Ages 3-5 3 s.h.
TU 272 Teaching Early Childhood Special Education Ages 3-6 3 s.h.
TU 273 Teaching Early Childhood Special Education Ages 2-6 3 s.h.
TU 271 Supervised Teaching: Early Childhood Special Education II 3 s.h.
TU 270 Seminar: Early Childhood Special Education I 1 s.h.
TU 262 Seminar: Early Childhood Special Education II 1 s.h.
Total 27 s.h.

The remainder of the required 26 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 additional 18 semester-hour program as follows:
TU 100 Introduction: Elementary and Early Childhood Teaching 3 s.h.
TU 212 Educational Psychology and Measurement 3 s.h.
TU 219 Human Relations for the Classroom Teacher 3 s.h.
TU 291 Audiovisual Equipment for Instruction 1 s.h.
TU 202 Introduction to Microcomputer Operation/Teaching 1 s.h.
The following courses, in addition to the above core requirements, form the program of study for moderate/severe/profound mental disabilities.
TU 117 Interdisciplinary Programming for Disabled Children with Disabilities 2 s.h.
TU 240 Behavioral Principles I 2 s.h.
TU 242 Methods: Persons with Moderate/Severe/Profound Mental Disabilities I 3 s.h.
TU 243 Issues: Teaching Persons with Moderate/Severe/Profound Mental Disabilities II 3 s.h.
TU 244 Supervised Teaching: Moderate Mentally Retarded (1 semester, 1/2 time) 3 s.h.
TU 245 Supervised Teaching: Severe/Profound (1 semester, 1/2 time) 3 s.h.
TU 246 Seminar: Teaching Persons with Moderate/Severe/Profound Mental Disabilities 1 s.h.
Total 35 s.h.

CardioPulmonary resuscitation course 9 s.h.
Total 50 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 Children with Disabilities 3 s.h.
TU 222 Supervised Teaching in Resource Program 5 s.h.
TU 230 Seminar: Graduate Supervised Teaching 2 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 134 Mental Retardation 3 s.h.
Students seeking an endorsement (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.
TU 217 Reading Clinic Teaching Techniques 3 s.h.
TU 218 Reading Clinic Teaching Practicum 3 s.h.
TU 230 Seminar: Teaching Elementary School Mathematics 3 s.h.
TU 231 Career Education and Transition 3 s.h.
Total 28-42 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 121 Career Education and Transition 3 s.h.
TU 133 Teaching Elementary School Mathematics 3 s.h.
Total 28-42 s.h.

TU 194 Methods: High School Reading 3 s.h.
or
TU 230 Developing Reading Skills in the Secondary School 2 s.h.

TU 204 Methods: Adolescents with Behavioral Disorders 3 s.h.

TU 237 Methods: Secondary Resource Teaching 3 s.h.
Total 38-42 s.h.

Multicategorical Special Class with Intervention
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 chosen above also must be completed.
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, with a plan of study flexible and tailored depending 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 (UO:143 Ph.D. Thesis in Special Education, 30 semester-hour 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

171T1 Human Growth and Motor Development
3 s.h.

171T2 Methods and Materials in Elementary Physical Education—Elementary School
3 s.h.

171T3 Methods and Materials in Elementary Physical Education—Elementary School
3 s.h.

171T4 Phys. Ed. for Mentally Retarded
3 s.h.

171T5 Preschool Education
3 s.h.

171T6 Pre-Kindergarten, Kindergarten, and Pre-Kindergarten
3 s.h.

171T7 Pre-Kindergarten, Kindergarten, and Early Elementary
3 s.h.

171T8 Introductory Elementary and Early Childhood Teacher
3 s.h.

171T9 Introduction to Education
3 s.h.

171T10 Administration of Physical Education and Athletics: Supervisory Field Experience
3 s.h.

171T11 Research Methods in Social Research
3 s.h.

171T12 Remedial Methods In Speech and Hearing
3 s.h.

171T13 Remedial Methods In Speech and Hearing
3 s.h.

171T14 Remedial Methods In Speech and Hearing
3 s.h.

171T15 Remedial Methods In Speech and Hearing
3 s.h.

171T16 Remedial Methods In Speech and Hearing
3 s.h.

171T17 Remedial Methods In Speech and Hearing
3 s.h.

171T18 Remedial Methods In Speech and Hearing
3 s.h.

171T19 Remedial Methods In Speech and Hearing
3 s.h.

171T20 Remedial Methods In Speech and Hearing
3 s.h.

171T21 Remedial Methods In Speech and Hearing
3 s.h.

171T22 Remedial Methods In Speech and Hearing
3 s.h.

171T23 Remedial Methods In Speech and Hearing
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171T24 Remedial Methods In Speech and Hearing
3 s.h.

171T25 Remedial Methods In Speech and Hearing
3 s.h.

171T26 Remedial Methods In Speech and Hearing
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171T27 Remedial Methods In Speech and Hearing
3 s.h.

171T28 Remedial Methods In Speech and Hearing
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171T29 Remedial Methods In Speech and Hearing
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171T30 Remedial Methods In Speech and Hearing
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171T31 Remedial Methods In Speech and Hearing
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171T32 Remedial Methods In Speech and Hearing
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171T33 Remedial Methods In Speech and Hearing
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171T34 Remedial Methods In Speech and Hearing
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171T35 Remedial Methods In Speech and Hearing
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171T36 Remedial Methods In Speech and Hearing
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171T37 Remedial Methods In Speech and Hearing
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171T38 Remedial Methods In Speech and Hearing
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171T39 Remedial Methods In Speech and Hearing
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171T40 Remedial Methods In Speech and Hearing
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171T41 Remedial Methods In Speech and Hearing
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171T42 Remedial Methods In Speech and Hearing
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171T43 Remedial Methods In Speech and Hearing
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171T44 Remedial Methods In Speech and Hearing
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171T45 Remedial Methods In Speech and Hearing
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171T46 Remedial Methods In Speech and Hearing
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171T47 Remedial Methods In Speech and Hearing
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171T48 Remedial Methods In Speech and Hearing
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171T49 Remedial Methods In Speech and Hearing
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171T50 Remedial Methods In Speech and Hearing
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171T51 Remedial Methods In Speech and Hearing
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171T52 Remedial Methods In Speech and Hearing
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171T80 Remedial Methods In Speech and Hearing
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171T81 Remedial Methods In Speech and Hearing
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171T82 Remedial Methods In Speech and Hearing
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171T83 Remedial Methods In Speech and Hearing
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171T84 Remedial Methods In Speech and Hearing
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171T85 Remedial Methods In Speech and Hearing
3 s.h.

171T86 Remedial Methods In Speech and Hearing
3 s.h.

171T87 Remedial Methods In Speech and Hearing
3 s.h.
Education ● Curriculum and Instruction

Weekend Teacher

17EF4 Curriculum Development in Early Childhood

17EF7 Classroom Technology and Instructional Design

17EF8 Teacher Education

17EF9 Educational Leadership

17EF10 Educational Psychology

17EF11 Educational Technology

17EF12 Educational Measurement and Evaluation

17EF13 Educational Research

17EF14 Educational Statistics

17EF15 Educational Testing

17EF16 Educational Administration

17EF17 Educational Evaluation

17EF18 Educational Leadership

17EF19 Educational Policy

17EF20 Educational Planning

17EF21 Educational Finance

17EF22 Educational Law

17EF23 Educational Sociology

17EF24 Educational Anthropology

17EF25 Educational Psychology

17EF26 Educational Measurement

17EF27 Educational Testing

17EF28 Educational Research

17EF29 Educational Statistics

17EF30 Educational Evaluation

17EF31 Educational Administration

17EF32 Educational Leadership

17EF33 Educational Policy

17EF34 Educational Planning

17EF35 Educational Finance

17EF36 Educational Law

17EF37 Educational Sociology

17EF38 Educational Anthropology

17EF39 Educational Psychology

17EF40 Educational Measurement

17EF41 Educational Testing

17EF42 Educational Research

17EF43 Educational Statistics

17EF44 Educational Evaluation

17EF45 Educational Administration

17EF46 Educational Leadership

17EF47 Educational Policy

17EF48 Educational Planning

17EF49 Educational Finance

17EF50 Educational Law

17EF51 Educational Sociology

17EF52 Educational Anthropology

17EF53 Educational Psychology

17EF54 Educational Measurement

17EF55 Educational Testing

17EF56 Educational Research

17EF57 Educational Statistics

17EF58 Educational Evaluation

17EF59 Educational Administration

17EF60 Educational Leadership

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17EF66 Educational Anthropology

17EF67 Educational Psychology

17EF68 Educational Measurement

17EF69 Educational Testing

17EF70 Educational Research

17EF71 Educational Statistics

17EF72 Educational Evaluation

17EF73 Educational Administration

17EF74 Educational Leadership

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17EF81 Educational Psychology

17EF82 Educational Measurement

17EF83 Educational Testing

17EF84 Educational Research

17EF85 Educational Statistics

17EF86 Educational Evaluation

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17EF92 Educational Law

17EF93 Educational Sociology

17EF94 Educational Anthropology

17EF95 Educational Psychology

17EF96 Educational Measurement

17EF97 Educational Testing

17EF98 Educational Research

17EF99 Educational Statistics

17EF00 Educational Evaluation

17EF01 Educational Administration

17EF02 Educational Leadership

17EF03 Educational Policy

17EF04 Educational Planning

17EF05 Educational Finance

17EF06 Educational Law

17EF07 Educational Sociology

17EF08 Educational Anthropology

17EF09 Educational Psychology

17EF10 Educational Measurement

17EF11 Educational Testing

17EF12 Educational Research

17EF13 Educational Statistics

17EF14 Educational Evaluation

17EF15 Educational Administration

17EF16 Educational Leadership

17EF17 Educational Policy

17EF18 Educational Planning

17EF19 Educational Finance

17EF20 Educational Law

17EF21 Educational Sociology

17EF22 Educational Anthropology

17EF23 Educational Psychology

17EF24 Educational Measurement

17EF25 Educational Testing

17EF26 Educational Research

17EF27 Educational Statistics

17EF28 Educational Evaluation

17EF29 Educational Administration

17EF30 Educational Leadership

17EF31 Educational Policy

17EF32 Educational Planning

17EF33 Educational Finance

17EF34 Educational Law

17EF35 Educational Sociology

17EF36 Educational Anthropology

17EF37 Educational Psychology

17EF38 Educational Measurement

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17EF67 Educational Testing

17EF68 Educational Research

17EF69 Educational Statistics

17EF70 Educational Evaluation

17EF71 Educational Administration

17EF72 Educational Leadership

17EF73 Educational Policy

17EF74 Educational Planning

17EF75 Educational Finance

17EF76 Educational Law

17EF77 Educational Sociology

17EF78 Educational Anthropology

17EF79 Educational Psychology

17EF80 Educational Measurement

17EF81 Educational Testing

17EF82 Educational Research

17EF83 Educational Statistics

17EF84 Educational Evaluation

17EF85 Educational Administration

17EF86 Educational Leadership

17EF87 Educational Policy

17EF88 Educational Planning

17EF89 Educational Finance

17EF90 Educational Law

17EF91 Educational Sociology

17EF92 Educational Anthropology

17EF93 Educational Psychology

17EF94 Educational Measurement

17EF95 Educational Testing

17EF96 Educational Research

17EF97 Educational Statistics

17EF98 Educational Evaluation

17EF99 Educational Administration

17EF00 Educational Leadership
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 register 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 unit 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 (TEP) of the College of Education.

Program requirements are as follows.

Professional Education Component

ED 315 Educational Psychology and Measurement 3 s.h.
ED 403 Audiovisual Equipment for Instruction 1 s.h.
ED 404 Introduction to Working with Exceptional Teachers 1 s.h.
ED 112 Teaching of Adults 3 s.h.
HE 107 Foundations of Vocational Education 2 s.h.
HE 190 Social Health Occupations Education 1 s.h.
HE 111 111 Foundations of College Teaching Internship 6-12 s.h.
HE 112 Curriculum Development Application to Community College and Health Careers 3 s.h.
HE 190 190 Evaluation: Application to Community College and Health Careers 2-3 s.h.

Additional course work in health occupations education

Students may take workshops or courses offered by specific health colleges or institutions such as development of nursing skills or computer science in health, to keep with their educational goals.

Graduate Programs

Educational Administration

The programs in educational administration prepare individuals for leadership positions. LPA Full programs lead to the American Educational Administration itself is acceptable for administrative certification. Educational administration offers programs with joint work with specializations in different colleges 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 school superintendent, students must complete the appropriate program. The specific requirements for each program are available through the Director and the College of Education Office of Student Services.

Students who hold an M.A. degree must satisfy all core requirements and must complete at The University of Iowa the minimum semester-hour program for the certification 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 candidate, candidates are required to plan their program with the advisor’s approval.

Master of Arts

The primary purpose of the M.A. program is to prepare individuals for appointments as elementary or secondary principal, school superintendent, central staff, and for certain positions within area education agencies and state departments of education.

The student 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.

71-201 Foundations of School Administration 3 s.h.
71-250 Administration of Strategies with Special Emphasis 3 s.h.
71-252 The Principalship 3 s.h.
71-256 Legal Aspects of School Personnel 3 s.h.
71-350 Supervision and Evaluation 3 s.h.
71-350 Design and Organization of Curriculum 3 s.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 satisfy the following degree requirements.

Elementary Level

71-250 Contemporary Management Strategies for the Elementary Principal 3 s.h.
71-351 Field Service Project in Elementary Administration 3 s.h.

Secondary Level

71-250 Contemporary Management Strategies for the Secondary Principal 3 s.h.
71-431 Field Service Project in Secondary Administration 3 s.h.

Electives selected with approval of advisor.

Specialist in Education

The E.S. program prepares candidates for administrative appointments in area education agencies, state departments of education, and the U.S. Office of Education. It also assists school administrators in upgrading their administrative skills to the level of superintendent of schools. Students 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

25-250 Administration of Educational Programs and Personnel 4 s.h.

Planning, Policy, and Leadership Studies • Education 325
Ed.D. 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 course work 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, Education 225, 228) or director of special education (State of Iowa, Education 229). It also qualifies the student for certification in general administration (State of Iowa, Education 171). The program requires a minimum of 62 semester hours of credit.

Admission to the program is limited by available resources. First to eighth 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, qualification for a candidate'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 course work in education, research, and research pursuits. Emphasis is placed on the integration of theory and practice in the program.

The Ph.D. in educational administration is a flexible program that prepares professionals for leadership positions at all levels of administrative practice and for academic teaching and research positions. Sufficient course work and related experiences are planned individually. Students are expected to achieve competence in the areas of educational program planning, finance and governance, leadership, theory, evaluation, and research methodologies that include statistical methods. They also must gain expertise in areas of specialized program and personnel policy analysis.

Course content in the Ph.D. program is divided into prerequisite, a core of common competencies, at least one specialization in the administrative field, cognate study outside the college, research skill development, and a research dissertation.

Commonly selected specialization areas are general administration, elementary school administration, secondary school administration, educational research, and research, school finance, curriculum, legal aspects, theory, and school personnel. Students must demonstrate proficiency in two research tool areas.

Admission

Applicants must satisfy Graduate College requirements and are selected through a faculty review process. The division admits a maximum of two students per academic year or the preceding summer session. Factors considered include 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; step 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, and applicants are notified by February 15.

Core Courses

Core courses are designed to provide the necessary background for further study, including research in specialized areas, and to develop competencies common to the functional areas of school administration. The four core courses integrate planning of educational personnel programs, analysis of the problem of economics of governance and the financing of public education, evaluation of administrative leadership theories, and options in research methodology and quantitative analysis. Each course requires a minimum of 4 semester hours of credit; open only to Ed.S. and Ph.D. students. Core courses require the development and practice of interaction, reading, and writing skills.

Comprehensive Examination

Students specializing in educational administration must complete a 9 semester-hour cognate outside the College of Education with the adviser's approval.

Doctoral students must satisfactorily complete an extensive six-hour comprehensive examination in the six common areas of educational administration, and a three-hour examination based on the student's areas of specialization and approved by the student's advisory committee.

Students must complete the doctoral core course work and requirements for registration by the research requirement to take the comprehensive examination. Students must be registered in the Graduate College at the
time of the exam. No Ph.D. comprehensive examinations are held during summer sessions.

Students pursuing doctoral programs in areas other than educational administration who wish to use some aspect of the educational administration program as an area of concentration for which they would request a comprehensive examination should consult with the Director of Educational Administration early in the sequence of their studies.

Any of the areas of specialization open to doctoral students in educational administration are open to other doctoral students who meet the necessary registration prerequisites for specific courses. Students would complete approximately 12 semester hours in one area of specialization before requesting a comprehensive examination. If the student decides to use a field within educational administration as a related comprehensive area, he or she should plan to complete approximately 8 semester hours of diversified coursework in related 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. Student and advisor determine whether the prospectus is complete. A final evaluation of the prospectus and approval to proceed may or may not be granted at the end of the prospectus committee meeting.

Dissertation prospectuses are not held during summer sessions.

Completion and Final Examination

Students must accumulate 10 semester hours of research dissertation credit. The dissertation committee determines the manner in which the dissertation is completed. 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 doctorate candidate must successfully complete two consecutive 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 90 semester hours and assumes that students enter with an M.A. and 32 semester hours of graduate credit.

Core Requirements

20-201 Administration of Educational Programs and Policies 4 s.h.
20-204 Politics and Economics of the Government and Financing of Public Education 4 s.h.
20-208 Administrative Leadership Theory 4 s.h.
10-201 Research Methodology and Quantitative Analysis 4 s.h.
Other-Required Courses

Cognitive courses selected with the approval of advisor 9 s.h.
Research design and statistics 6 s.h.
Thesis 10 s.h.
Examinations to permit specialization: students typically include two or more doctoral electives 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 educational enterprise. Major areas of specialization are comparative/international education, history of education, philosophy of education, policy studies, and sociology of education.

General requirements for admission are as stated by the Graduate College. A personal interview with one or more members of the social foundations faculty is desirable and may be required. As undergraduate and graduate emphasis in philosophy, history, sociology, or the social sciences and 2 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 18 semester hours of work in social foundations, which should include at least two courses in one of the five areas of specialization. The remainder of the required 32 semester hours of course work must be in an area of concentration appropriate to students' career and academic goals for example, those interested in philosophy of education usually take these courses in the Department of Philosophy.

Doctor of Philosophy

The Ph.D. program requires a minimum of 18 semester hours in social foundations, which must include at least 12 semester hours in the major area of specialization and a minimum of 6 semester hours from each of two additional areas. In addition, students must take at least 12 semester hours in related courses in the College of Education, that must be in an area of concentration in administrative, educational policy, psychological 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, psychological science, or sociology. These sequences are individually planned by the student with the aid of his or her advisor and suggestions from the appropriate department or departments.

Two research tools are required. They may be selected from the following alternatives in accordance with the individual candidate's research interests and program courses: two courses in a graduate-level statistics sequence, philosophy of science and philosophy of social science. Internship, foreign language(s) proficiency exams.

In addition, all students are required to successfully complete 33-05 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 focus on that complexity. Degrees are offered in all levels, with emphasis on both research and practice. Preparation for either teaching or administration is available. The teaching, research, and service activities of the faculty and the work of the graduates of the several degree programs illustrate that education beyond the high school level continues in a variety of ways in all ages and in many different settings.

Master of Arts without Thesis

The purpose of the M.A. program is to prepare individuals for entry- and middle-level administrative, instructional management, continuing education, and policy positions in two- and four-year institutions in an appropriate program for positions such as: assistant dean, assistant to the president, director, in-service director, and dean 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. Theses, theses, three letters of recommendation, and a statement of educational goals are required for consideration for regular admission.

Details for receipt of application for admission, following GRE General Test, 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.

Requirements

The M.A. program requires a minimum of 32 semester hours. Students take six hours
of written examinations based on the core concentration, and specialization, according to the plan of study developed individually for each student.

Areas of concentration in which examinations may be written are administrative practices, academic practices, continuing education practices, and policy studies. Students majoring in another field who want to complete a related field in higher education and to be eligible to write a related-field examination should consult with a higher education 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 joint program that consists of one or more of the graduate seminar hours of the teacher or administrator specialty, and one or more of the courses in higher education, or completion of a higher education sequence following a master's degree program.

Admission

Applicants for admission must satisfy the general requirements for admission to the Graduate College. Candidates are selected on the basis of grade-point average, GRE General Test scores, and on the basis of professional experience (e.g., graduate course work, GRE scores, three letters of recommendation, and a statement of educational goals). Requirements for regular admission are:

1. The GRE General Test scores, three letters of recommendation, and a statement of educational goals are required.

2. The College of Education will award credit for all graduate hours earned on or before November 1 for spring semester admission and April 1 for 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 areas 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 76:395 Education 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, respectively 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 early 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 no less than possibility of the academic life of the host community college, and usually gather data for their Ed.S. research project during the internship.

Participation is required to travel to a community college and reside there for the entire semester. Some interns are accommodated at nearby community colleges, but preference is given to those willing to travel for the experience.

Doctor of Philosophy

The Ph.D. program is designed for persons who are likely to serve as administration, specialist, researchers, and teachers in higher education institutions, or for those who plan to go on to earn a doctorate in related fields, or for others who plan to go on to earn a doctorate in 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 (16-19 semester hours). In addition, candidates choose one area of concentration and must earn 16-24 semester hours of credit in that area. Ordinarily, candidates choose a related field of 3-12 semester hours; a minor (approximately 30 semester hours), which may be by appropriate prerequisite course work in 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 major 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 interaction processes.

Comprehensive examinations for the doctorate cover the general areas of higher education and the candidate's area of concentration, major and/or related field, and dissertation.

Admission

Applicants for admission to the doctoral program must satisfy the requirements for the graduate College. Candidates will be selected on the basis of grade-point average, GRE General Test scores, and for professional growth, transcripts, the GRE General Test scores, three letters of recommendation, and a statement of educational goals. Requirements for regular admission are:

1. The 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 fall semester admission.

Courses

Educational Administration

72:301 Foundations of Educational Administration 3 s.h.
Introduction to organization and administration of educational, public, and private agencies, including historical and philosophical foundations, administrative roles and organizational structure, and ethical and social implications of educational administration.

72:302 College Organizing in Education 3 s.h.
Current analysis of public sector requiring the U.S. education system and the changes in demographics, priorities, and approaches to management structure.

72:303 Institutional Instruction, Research, and Development 4 s.h.
Emphasis on the various aspects of educational research directed at solving educational problems at the local, regional, and national levels. Emphasis on the design and evaluation of instructional and research programs.

72:304 Institutional Instruction, Research, and Development 4 s.h.
Emphasis on the various aspects of educational research directed at solving educational problems at the local, regional, and national levels. Emphasis on the design and evaluation of instructional and research programs.

72:301 Institutional Instruction, Research, and Development 4 s.h.
Emphasis on the various aspects of educational research directed at solving educational problems at the local, regional, and national levels. Emphasis on the design and evaluation of instructional and research programs.

72:304 Institutional Instruction, Research, and Development 4 s.h.
Emphasis on the various aspects of educational research directed at solving educational problems at the local, regional, and national levels. Emphasis on the design and evaluation of instructional and research programs.

72:301 Institutional Instruction, Research, and Development 4 s.h.
Emphasis on the various aspects of educational research directed at solving educational problems at the local, regional, and national levels. Emphasis on the design and evaluation of instructional and research programs.

72:304 Institutional Instruction, Research, and Development 4 s.h.
Emphasis on the various aspects of educational research directed at solving educational problems at the local, regional, and national levels. Emphasis on the design and evaluation of instructional and research programs.
Undergraduate Course Work

The division offers an undergraduate minor in the combined fields of educational psychology, measurement, and statistical analysis.

The purpose of the minor is to provide an enriched background in educational and social measurement, psychological testing, and research methods in education. A division minor selected by the student must include courses totaling 18 or more semester hours, of which 12 semester hours must be at the 300-level. This minor does not lead to certification as a public school teacher.

One of the General Education Requirements for graduation from the College of Liberal Arts is successful completion of a course designed to develop skills in quantitative or formal reasoning (see the College of Liberal Arts” section of the Catalog). 17-25 Elementary Statistics and Inferential may be used to satisfy this requirement.

Graduate Programs

Educational Measurement and Statistics

Master of Arts

The M.A. degree is a 36-credit program for students who desire an advanced education in measurement, educational psychology, cognitive science, and other related areas. The program may be completed in three to four years, depending on the student’s prior coursework.

Admission

Applicants are admitted based on their academic record and potential for success in graduate studies. Admission is based on a combination of letters of recommendation, a statement of purpose, and a personal interview. Applicants must hold a bachelor’s degree from an accredited institution with a minimum GPA of 3.0 on a 4.0 scale. A GRE or MAT score is required.

Requirements

The degree may be obtained through a thesis (30-semester-hour minimum) or with an internship (15-20 semester hours of required coursework plus 3-4 semester hours of thesis credit). Students must complete a core of courses totaling approximately 60 semester hours. In addition, students are required to complete a graduate-level survey course in educational psychology, educational measurement, and statistics.
psychology, elementary and intermediate courses in statistical methods, a course in educational research methodology, and courses in the history and use of research instruments.

The 40 hours of formal comprehensive examinations typically include three-hour examinations in educational measurement and in applied statistics. With the approval of the M.A. committee, the student may take two-hour examinations in these fields plus a two-hour examination in educational psychology or a substitute area. Three-hour examinations assess a minimum of three courses and the two-hour examinations assess a minimum of two courses in the area.

Doctor of Philosophy

This doctoral program prepares students for senior professional positions in the fields of educational measurement, program evaluation, and statistics. Such positions generally are found in colleges and universities, state departments of education, large public and private school systems, testing agencies, and research centers.

Admission

Applicants for admission to the program must hold an M.A. degree from an accredited institution. The grade-point average requirement is the same as that for the Graduate College. If an applicant's grade-point average in technical/statistical areas, based on the GPR Formula, is less than 3.00, there is an offsetting requirement of superior ability, as determined by the faculty, in other areas. Students who do not meet these requirements for the graduate college mathematics through differential equations or have not had a sufficient background in statistics, must enroll in introductory courses. Such coursework must be completed before the candidate will be considered for admission.

The faculty may adjust the GRE standards for students who do not meet these requirements for the graduate college mathematics through differential equations or have not had a sufficient background in statistics. Students who do not meet these requirements for the graduate college mathematics through differential equations or have not had a sufficient background in statistics must enroll in introductory courses. Such coursework must be completed before the candidate will be considered for admission.

Counseling Psychology

Doctor of Philosophy

The doctoral degree is designed to provide training for students who wish to pursue a career in counseling psychology. The program aims to prepare graduates to conduct research and to develop and implement programs in the areas of counseling psychology.

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79:350 Processes and Outcome in Counseling and Psychotherapy
3 s.h.
79:365 Psychotherapy II: Cognitive and Behavioral Approaches
3 s.h.
79:405 Issues and Ethics in Professional Psychology
3 s.h.
79:413 Practicum in Counseling Psychology
3 s.h.
79:415 Advanced Practicum in Counseling Psychology (may be repeated)
3.5 s.h.
Total (minimum)
21 s.h.

Students must enroll in practice to reach a specified level of client contact, supervise, analyze, and additional experience beyond the minimum one practice is available at the University Counseling Service. Placement is by the University Counseling Service and must be prior approval of the Counseling Psychology faculty. Students must successfully complete at least one quarter of 79:413 Practicum in Counseling Psychology before enrolling in 79:415 Advanced Practicum in Counseling Psychology. Meetings 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 adviser. Course work is determined in collaboration with the major adviser. A research project completed in the winter of the second semester is to be submitted prior to the comprehensive examinations. Up to 6 semester hours of courses may be applied to this project. The dissertation research study is planned in collaboration with the doctoral student's major adviser. The course work can range from 12 to 15 semester hours.

Students spend a calendar year at an internship (to be approved by the Counseling Psychology faculty). The faculty determines the type and length of the experience to be applied for the requirements based on completion of all or almost all of the courses, successful completion of the major's equivalent research, and successful completion of practicum requirements.

Comprehensive Examinations are written in four areas: counseling psychology practice, counseling psychology research, counseling psychology philosophy, and a fourth area. It is strongly recommended that students complete comprehensive examinations prior to the internship.

Students must show appropriate levels of emotional balance and interpersonal skills and act within the American Psychological Association's Ethical Principles of Psychology.

Educational Psychology

Master of Arts

This program provides an overview of educational psychology in an area of scholarly 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 either a specific vocation. Rather, it is designed to improve understanding of the psychological principles on which educational behavior is based.

Admission

Admissions requirements may vary as these are established by the Graduate College. Teaching experience is desirable but not required. The faculty reviews applications as they are received.

Requirements

Students may take the degree with or without thesis. The degree without thesis requires a minimum of 33 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 79:145 Introduction to Statistical Methods or the equivalent. Students who intend to apply for admission to the Ph.D. program should take the M.A. degree with thesis.

Students plan the remainder of the program in consultation with their advisors. Course work consists of the following four areas: human development, cognitive learning, motivation, socialization/personality. Students must take at least one course in each of these areas: the faculty encourages a broad degree of specialization 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 in residence. The program faculty considers course grades, evidence of critical and analytical skills, development during the year, and progress toward continued growth. Decisions identified in the review are discussed with the student. Students may be dropped from the program or the discipline at the discretion of the faculty.

The program culminates in six courses of comprehensive examinations consisting of either three two-hour or two three-hour exams. The three-hour exams call for a minimum of two courses in each area tested. The two-hour exams call for a minimum of two courses in each area tested. The comprehensive exam is planned under the advisement of 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 practices. Such careers include psychoeducators at the university and college level and research or administrative positions in educational agencies, clinics, homes, training organizations, and public schools.

Admission

An applicant for admission to the program must hold an M.A. degree from or be an M.A. degree candidate in good standing at an accredited institution. Applicants whose M.S. degree is not directly relevant to educational psychology may be admitted conditionally. The student must complete the M.A. program before taking the Ph.D. comprehensive exams.

The graduate student point average requirement for admission is the same as that established by the Graduate College. Applicants are expected to have earned a cumulative grade point average of at least 3.0 in their last two years of baccalaureate study. Experience in research is desirable. Students may be admitted on a conditional basis if recommended by the departments.

Requirements

The program requires a minimum of 73 semester hours beyond the bachelor's degree and encompasses four substantive areas: human development, cognitive learning, motivation/socialization/personality, and educational psychology. Students must complete at least one course in each of the four areas, with three of these courses above the 300 level. In addition, students must demonstrate substantive competence in at least one of these areas. A minimum characterization of competence requires the following: a minimum of three core courses and at least one course beyond the 100 level.

Additional requirements include the following: 79:305 Research Methodology, a minimum of 6 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 core courses in areas of interest. Graduates who take the degree without thesis must undertake a project in an educational psychology area. 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 adviser. The record of every student admitted to the program is reviewed near the end of the second semester of residence. The program faculty considers the candidate's previous record, evidence of critical and analytical skills, development during the year, and progress toward continued growth. Decisions 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 undertake comprehensive examinations. Six of the eight hours of comprehensive
transmissions must be based on course work in educational psychology offered by the division or on closely related courses offered by other University departments. A comprehensive examination taken outside the educational psychology program must be planned in consultation with the adviser. The project examination schedule must be approved by the comprehensive examination committee.

School Psychology

Specialist in Education

The E.S.S. program provides course work and supervised field experience in the areas of education and psychology, leading to a specialist qualification in school psychology (State of Iowa Endorsment 41).

Admission

Undergraduate preparation in psychology or education is desirable but alternative backgrounds are considered. Qualifications include an adequate 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 45 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-209 Educational Specialist Research (4 semester hours).

Doctor of Philosophy

The Ph.D. program in school psychology prepares students for positions in higher education and 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, grade point averages above 3.00, and verbal and quantitative scores above 500 on the Graduate Record Examination General Test. The faculty also encourages applications from those with psychology majors in M.A. or Ed.S. degrees. Applications must include three letters of recommendation and a personal statement of interest and goals. Complete application materials, transcripts, and test scores, must be received by February 1 for consideration for fall admission. Decisions are made by March 15. A maximum of five students are admitted to the program each year.

Requirements

The program requires a minimum of 90 semester hours. Course work is chosen from among areas including educational psychology, educational foundations, school psychology, and research methods that are available to students. 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-495 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 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, all students are expected to attain a grade-point average of at least 3.00. Applicants are encouraged to include with the application a personal statement about their interest in the field. Applications for full admission must be received by May 1; for spring admission, by October 1; for summer admission, March 1. Admissions decisions are announced approximately one month after the deadline.

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-105 Design and Production of Multimedia for Instruction
- TP-197 Psychological Bases of Instructional Design
- TP-199 Introduction to Educational Measurement
- TP-220 Advanced Instructional Design and Technology

The program culminates with a six-semester hour of comprehensive examinations based on core and emphasis area courses. The examinations are divided into two- or three-hour exams as follows: general instructional design, 2-3 hours; area of emphasis, 2-3 hours; other, 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.S. is usually considered a final 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, all students are expected to maintain a 3.00 grade-point average. Applicants are encouraged to discuss their plans with a faculty member and to include a personal letter with the application describing their interests in the instructional design and technology field. Information that may be helpful in the application process includes:

Applications for full admission must be received by May 1; for spring admission, by October 1; for summer admission, March 1. Admissions decisions are announced approximately one month after the application deadline.

Requirements

Course work required for the degree includes the following core courses (or equivalent): three research methods courses (TP-145 Introduction to Statistical Methods, TP-139 Introduction to Instructional Design and Technology, and TP-132 Use of Media in Instruction); 18 semester hours of study in one area: classroom instruction, computer applications, instructional design, technology, educational psychology, educational research, educational measurement, and educational statistics. In addition,
the student must complete 6 semester hours of coursework outside the College of Education. Students who have taken courses in designing instruction or training are required to complete a practicum.

The program culminates in the completion of a final project and a six-hour set of comprehensive examinations that include the core, research, and specialized courses. Students should prepare for the comprehensive examinations by focusing on the core courses, core, and specialized courses.

Doctor of Philosophy
The P.D. program in instructional design and technology provides a broad background for those interested in teaching, research, and leadership positions. The 30-semester-hour program emphasizes the acquisition of knowledge and skills needed to explain the understanding of instruction and training and their effects on learning and performance.

Admission
Admission to the program is competitive. Applicants are required to have a grade-point average of 3.00 on previous coursework and a score of 500 or higher on both the quantitative and verbal sections of the Graduate Record Examination General Test. Other factors considered are the number of applicants, previous experiences, personal recommendations, and letters of recommendation. Applicants must include a personal letter with the application, describing their interests in the profession and the application, and any additional information that may be pertinent. Applicants are strongly encouraged to discuss their plans with a departmental advisor.

Applicants for fall admission must be received by May 1; for spring admission, by October 1. A summer semester, by March 1. Admission decisions are communicated approximately one month after the application deadlines.

Requirements
Course work required for the degree includes a minimum of 18 to 24 credits or equivalent, 5 research-related courses including one or two methods courses, and 12 semester hours in the specialized area. Instructional development, computer application, health sciences education, or instructional development. In addition, students must complete 9 semester hours of coursework in a cognate area outside the College of Education.

At the end of the course work requirements, students must submit a final paper that reflects their ability to organize and present a concept at the conceptual level expected for the dissertation. The required paper must be approved by a faculty committee before the comprehensive examinations may be taken.

All students must successfully pass a three-hour set of comprehensive examinations that include the core, research, and specialized courses as follows: general instructional design, 3 or 5 hours; sets of pedagogy, 3 or 4 hours; other, 0 or 3 hours.

The program culminates with the successful preparation and defense of a dissertation.

Financial Aid
The division normally employs several advanced graduate students as teaching, research and production assistants. The stipends vary and are typically half-time, $12,000 per year, and are held for up to 24 semester hours per semester. Assistantships will address concerns to the chair of the division.

Other types of graduate assistantships are supported by other Testing Programs. Usually are only, including research opportunities. The emphasis is on the department and research, generally not supported by the Iowa Testing Programs that are not specific to the programs cited above. Information should be directed to the program's director.
program, while learning how to use and create media. Prerequisites: TR 108 and programming experience.

TV 210 Advanced Topics in Computer-Aided Instruction 3 s.h.
Analysis of current research and development related to computer-based instruction. Prerequisites: TV 108 and programming experience.

TV 215 Advanced Computer Graphics 3 s.h.
Techniques such as color and shading, hidden line elimination, animation, programming graphics DSK in assembly language. Prerequisites: TV 108 and programming experience.

TV 241 Instructional Computer Simulation 3 s.h.
Theory, design, and development of computer-based simulations and games, and specific design characteristics of instructional computer simulations. Prerequisites: TV 108 and programming experience.

TV 262 Facilitating Learning in Health Science Education 3 s.h.
Various critical teaching models and factors involved in the development of a comprehensive class evaluation system. Same as TV 292.

TV 263 Curriculum Theory and Practice 3-4 s.h.
Analysis of curricular development and practice in textbooks, textbooks, and other reading materials. Prerequisite: TR 108 or equivalent knowledge of curricula.

TV 270 Internship in Instructional Design and Technology 1-3 s.h.
Opportunities will be provided for students to gain practical experience in teaching, consulting, and other related environments. Prerequisites: TV 241, TV 250, and TV 255.

TV 271 Survey of Research in Instructional Design and Technology 3 s.h.
Survey of research in instructional design, technology, and education and learning design as related to instruction.

TV 279 Special Topics in Health Science Education 3 s.h.
Topics in health science education, such as community health, health sciences education, and health sciences education simulation. Prerequisites: TV 108 and programming experience.

TV 282 Independent Study: Instructional Design for Micros 3 s.h.
Students investigate current issues in instructional design for microcomputers. Consent of instructor required.

TV 284 Organizational Development and Change 3 s.h.
Organizational development and change. Current topics such as corporate culture, management, and organizational change. Consent of instructor required. Prerequisites: TR 108 and TV 250.

TV 270 Practicum in Instructional Design and Technology 3-6 s.h.
Supervised experience in an applied setting. Consent of instructor required.

TV 271 Survey of Research in Instructional Design and Technology 3 s.h.
Survey of research in instructional design, technology, and education and learning design as related to instruction.

TV 493 M.A. Project in Instructional Design and Technology 1-6 s.h.
Project for the M.A. and completion of the master of arts in instructional design and technology. Consent of instructor required.

TV 495 E.D. Project in Instructional Design and Technology 1-6 s.h.
Project for the E.D. and completion of the master of arts in instructional design and technology. Consent of instructor required.
Engineering is defined by the Accreditation Board for Engineering and Technology as that branch of science in which knowledge of mathematics and natural sciences gained by study, experience, and practice is applied with judgment to design, construct, and operate structures, machines, materials, and processes for benefit of society.

The major aim of engineering is the creation of new products, processes, material, or systems. This activity demands a high degree of creativity coupled with a full understanding of engineering fundamentals, good judgment, and a practical sense of economics.

The College of Engineering prepares young men and women for one or more of the many career opportunities in the engineering profession. Such opportunities include positions in design, production, development, research, management, and consulting. Engineers are employed in industrial organizations, government agencies, and private practice.

The College of Engineering has two major responsibilities. The first is to provide high-quality undergraduate engineering programs by blending 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 to expanding the depth and breadth of technical knowledge and experiences. Graduate education involves intensive study, analysis, and creative activity of a nature that are expected to result in original contributions to the literature at the Ph.D. level.

Programs

The College of Engineering offers programs leading to the Bachelor of Science in Engineering (B.S.Eng.) degrees 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 biochemical engineering, civil and environmental engineering, electrical and computer engineering, industrial engineering, and mechanical engineering.

Any of the undergraduate programs offered by the College of Engineering may be combined with a program leading to a bachelor's degree in the College of Business Administration, and a second bachelor's degree in the College of Engineering. In addition, a combined bachelor's/master's degree program is available through each of the engineering majors and the Graduate Programs in Urban and Regional Planning.

Graduation With Distinction

The college awards degrees—with highest distinction—to students in the top 1 percent of their graduating class, with highest distinction to students in the next highest 3 percent, and with distinction to students in the next highest 3 percent.

Undergraduate Programs

Academic Recognition

Honors Program

The College of Engineering Honors Program provides special recognition for outstanding undergraduate students who demonstrate exceptional accomplishment through research, directed independent study, teaching, or other approved undergraduate enrichment activities. Honors students may participate in a college-wide honors seminar with faculty and senior honors students. Junior and senior engineering students with college and cumulative grade-point averages of 3.80 and higher are eligible to apply to the program. Successful completion of departmental requirements leads to a Bachelor of Science in Engineering with Honors. A permanent notation of this achievement is recorded on the student's University academic record.

Freshmen and sophomore students interested in honors are encouraged to participate in the College of Liberal Arts Honors Program, which provides access to all of the services offered by the Thurnham House. Interested students also are encouraged to join the Association of Iowa Student Chapters, which sponsors a variety of social and educational activities each year. Engineering students are the second largest college group in the College of Liberal Arts Honors Program.

For more information or to apply, contact the Office of the Dean, College of Engineering, 3301 Engineering Building.

Graduation With Honor

High scholastic achievements is certified in two ways, graduation with distinction based on grade point and graduation with honors based on both grades and extracurricular accomplishments. To be eligible for graduation with honors, students must be recommended by their major department and approved by the department chairperson and the director of the honors program.

President's List

Students who earn a 4.0 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 grades standing on the current or two semester's record, are recognized by inclusion on the president's list.

Dean's List

Engineering students who achieve grade-point averages of 3.50 or above during a given semester or more during two consecutive semesters with no less than grades standing on the current or past semester's record are recognized by inclusion on the dean's list for that semester.

Degree Requirements

The Bachelor of Science in Engineering (B.S.Eng.) degree requires a minimum of 128 semester hours of credits, including a minimum of 80 semester hours of the engineering program as described in the following sections. Candidates for the B.S.Eng. degree must be enrolled in the College of Engineering list at least 30 semester hours, or 45 of the last 60 semester hours, or at least 30 semester hours. They must have a minimum grade-point average of 2.00 on all college work used to satisfy the degree requirement as well as an overall work satisfactory at the University of Iowa. In addition, candidates must have completed 23.5 semester credits in Calculus I, II, or their equivalents, with a grade of C- or better in each course.

Students who wish to be considered for graduation must file an application for degree with the Office of the Registrar before the deadline day during the semester in which the degree is to be conferred.

Students who do not graduate on the date indicated in the application must file another application for a degree for the
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 or 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 ranked in the upper one-third of their high school graduating class.

One-half year of a high school computer programming course is highly recommended.

Nonresident freshmen applicants must have completed the same high school requirements as required and recommended for resident applicants, and must have:

Completed the Enhanced ACT Assessment with a composite score of 26 or above and a mathematics score of 20 or above (or equivalent SAT scores) and ranked in the upper 20 percent of their graduating class.

Transfer applicants must complete the same college core 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 and a language equivalent and maintained a cumulative grade-point average of at least 2.35.

Freshman and transfer applicants who do not meet the foreign language requirement may be admitted upon a conditional basis for a minimum 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 minimum 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 at the four-year level for a degree in that program. The established set of courses is known as the curriculum for that program. General guidelines for establishing the course requirements in each program are provided by the national accrediting body, the Accreditation Board for Engineering and Technology (ABET).

The purpose of the curriculum in each program is to prepare students for the practice of engineering in that program.

Curriculum Stems

The curriculum for each program is divided into four major curriculum stems: mathematics and basic sciences, engineering sciences, engineering design, and humanities and social sciences. In addition to the four major stems, there are a few general backgroun courses that fall outside of the stems. These courses are scheduled in the freshman year. They include Engineering I and II and Rhetoric, 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 for the major.

Engineering Sciences

The second curriculum stem, engineering sciences, builds upon the math and science stem to bridge from fundamental principles to applications and creative practices. The engineering sciences courses use the underlying principles learned in the mathematics and basic sciences courses to understand and predict the behavior of idealized models of real-world systems or systems encountered in engineering. These courses include statistics, thermodynamics, and electrical circuits as well as other engineering courses relevant to each major.

Engineering Design

Engineering design, the third curriculum stem, is the process of developing a system, component, or process to meet stated needs. It is a decision-making process, often interactive, in which the basic sciences, mathematics, and engineering sciences are applied optimally to convert resources to meet a stated objective. The design process includes the establishment of objectives and constraints, needs analysis, problem definition, problem solving, evaluation, and decision making. This process involves the inclusion of realistic constraints such as economics, safety, reliability, aesthetics, ethics, and social impact.

Because of the need to utilize a spectrum of basic and applied subject matter, which involves course work taken early in the freshman year, the preprofessional activities usually begin in the junior year in the form of a machine course or activity in the senior year.

Humanities and Social Sciences

The fourth stem involves course work in the humanities and social sciences. This stem serves to engender an appreciation for and understanding of society and culture. All of the courses in these curriculum stems are sequenced and integrated to meaningful patterns so that students better understand the interrelationships and importance of each stem.

Freshman and Sophomore Year

Aptemproximately one-half of the course requirements for 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 a few in the junior or senior years. Hence, students generally may postpone math, general education, and many engineering courses to junior or senior years. It is possible to accelerate course work in the freshman year with minimal loss of course credits.

Exceptions to the common freshman year and sophomore year course requirements for engineering, both of which require a second-year of entry to sophomore year, generally may postpone the decision about a major until as late as the end of the third semester. However, because of prerequisite sequencing, a delay of two years may result in an extra semester or a summer session. The curriculum for each engineering program is listed in the section entitled Core Program. The following are freshman year courses that are common to all engineering curricula.

First Semester

Engineering Design 1, 4-3-3
Chemistry I 4-3-3
Physics I 4-3-3

Second Semester

Second Semester

Principles of Chemistry I 2-2-2
Engineering Calculus II 3-3-3

Total 17-5-2
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 area are specified.
Students considering a major in this
program should consult "Industrial
Engineering" in this section in the Catalog
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
courses 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; Literature; Science;
and the Arts, Music; Philosophy; Religion;
theology; or other departments approved
by the curriculum committee of the College
of Engineering.
Following an introductory-level course,
students select a minimum of 6 semester
hours of advanced (junior-level) courses to
secure sufficient depth of knowledge in an
elective subject of study. This advanced
level coursework 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. Language course
courses do not satisfy any of the
requirements because courses are at or
below 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 Communication.
In some cases students may require
additional coursework in other
departments approved by the
curriculum committee.
To qualify for both degrees in the combined
degree program, candidates must
take an overall total of 184 semester hours
of credit, including at least 26 semester
hours of courses offered by the College
of Engineering and at least 21 semester
hours of courses offered by the College of Liberal
Arts.
Combined College of Engineering/B.A.
Program
An Accelerated Professional Track (APT)
Program has been initiated by the College of
Business Administration for upper
undergraduate students who want to
complete their B.S. and B.A. degrees in
four years. The APT program is
designed to allow students to
complete both degrees in four
years, while providing a
professional track of courses.
Students select, with their advisor's
approval, a minimum of 15 semester
hours of social sciences and humanities
Elective courses.
Minor In Business Administration

Requirements for a minor are two economic courses (EC 1 and EC 2), two accounting courses (AC 1 and AC 2), a marketing course (OM 100), a management course (ST 100), a finance course (GF 100), and a legal course (LG 100). 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 ECON 523, ECON 524, and ECON 525. A 2.0 grade-point average in courses applicable to the minor is required. Students who want to complete a degree in Business Administration should also select courses that satisfy M.B.A. requirements.

Minor In Liberal Arts

Requirements for a minor are a minimum of 15 semester hours in the liberal arts department, at least 12 of which are in advanced courses at The University of Iowa and acceptable to the department. Students should consult with the minor department to identify acceptable courses. Students must achieve a 2.0 grade-point average in the courses applicable to the minor. Courses to be counted toward the minor may not be taken pass/peer.

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 can earn a substantial portion of college expenses during the co-op years, but the success of the program depends on the work experience itself. The academic component, which is educational value as well, is designed to benefit the engineering student by increasing his awareness of the nature of credit earned applicable to a Bachelor's degree in engineering, according to the following:

Freshman—Less than 25 semester hours. Sophomore—30 to 59 semester hours. Junior—40 to 85 semester hours. Senior—90 or more semester hours.

Grading System

The college uses a letter grading system with a plus or minus designation of performance between the letter grades. The numerical equivalent of each letter grade with plus and minus options are as follows:

<table>
<thead>
<tr>
<th>Grade (definition)</th>
<th>Grade points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+ (5.0-miss)</td>
<td>4.33</td>
</tr>
<tr>
<td>A (4.0)</td>
<td>4.00</td>
</tr>
<tr>
<td>A- (3.67)</td>
<td>3.67</td>
</tr>
<tr>
<td>B+ (3.33)</td>
<td>3.33</td>
</tr>
<tr>
<td>B (above average)</td>
<td>3.00</td>
</tr>
<tr>
<td>B- (2.67)</td>
<td>2.67</td>
</tr>
<tr>
<td>C+ (above average)</td>
<td>2.33</td>
</tr>
<tr>
<td>C (2.00)</td>
<td>2.00</td>
</tr>
<tr>
<td>C- (1.67)</td>
<td>1.67</td>
</tr>
</tbody>
</table>
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 two or three 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 for the fall 2014 semester are on file or may be obtained by the student or by the office of 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 fulfillment of the humanities and social science requirements. Students who want to take such courses in liberal arts or business administration must have their 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 the instructor must be obtained on the proper form and the completed form must be submitted to the registrar by the student through the office of academic advising 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. Grades of P and N are not used in computing the grade point average. The mark of N does not count as earned hours.

No course work taken in the College of Engineering on the pass/nonpass option may be used to satisfy requirements for an engineering degree.

Second-Grade-Only Option

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 in which the student wishes to repeat the course as a prerequisite. The option may be applied to no more than three courses, and it may be applied only once to a given course.

Students may apply the option to a repeated basis. For example, students who transfer no more than 40 semester hours of applicable engineering course work may use this option for a maximum of three courses, while students who transfer between 45 and 85 semester hours of credit may use this option for no more than two courses, and students who transfer 86 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 optional and will not satisfy the requirement. No other engineering courses are offered on this basis. An F (fail) grade carries for each course only an unspecified portion of the professional seminar requirement.

Incomplete and No Report Grades

A mark of I (incomplete) or O (no report) that is not replaced by a final grade prior to the announced deadline during the semester in which the student’s regular semester 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 preceding 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 have achieved satisfactory scores on the comprehensive examination administered through the 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 ZM235, Engineering Calculus I. Likewise, students earning a score of 3, 4, or 5 in a BC-level calculus course receive 8 semester hours of credit for ZM235-36, Engineering Calculus I-II. Credit earned through other AP courses also may be applied to other engineering course requirements to appropriate to course level and, as long as credit for those requirements has not already been earned through other exams or course satisfactions. 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 behavioral 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 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 social sciences requirements for engineering.

Completion of the depth requirement in the social sciences requirement of the 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 in history; CLEP credit in general social science 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 in a nonsuperseded basis. Oversteps 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 traditional course formats 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. The specific subject matter for which credit is awarded 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 up to a maximum of 12 semester hours for which the validation may be granted after students have completed at least 24 semester hours toward their degree at The University of Iowa that includes appropriate courses for which the work to be validated are prerequisites. 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 student is notified of their status in the college.

Satisfaction of engineering course requirements by transfer course work may be approved by the assistant to the dean or, on a course-by-course basis, there is a match in the content and level of the transfer courses, and the grades earned for such courses are C or higher. Students who want to satisfy the engineering social sciences and humanities requirements of The University of Iowa rhetoric requirements by transfer work should contact the assistant to the dean for details.

Students planning to attend a two- or four-year institution before transferring to the College of Engineering are well advised to discuss the planned transfer with officials at both schools before embarking on a transfer program. The College of Engineering has recommended course lists for various Iowa community colleges and some four-year colleges. These course lists are available by contacting the assistant to the dean. Once students are enrolled in the College of Engineering, all course work they have taken at other institutions must be preapproved by the assistant to the dean or it is not applicable to their requirements.

By policy of the State Board of Regents, a student who has earned 64 semester hours of college credit from all sources may transfer no more credit from a two-year college toward meeting the 128 semester hours required for graduation. If a student has earned more than 64 semester hours of college credit, the student may transfer no more than two years of credit and grades are used in computing the grade point average. This may not include transfer credit made by the student in the year of graduation.

Course Substitutions

For students in the College of Engineering, the substitution of an alternate course for a required course requires the approval of a petition. The petition form is available in the office of the assistant to the dean or the assistant of the academic department in which the student is majoring.

If the petition invokes a required engineering core course, then it must be approved as a substitution by the dean or at least one of the associate deans. Substitutions of courses that are required by the student's department may be approved by the dean or the associate dean. Substitutions of courses that are required by the faculty of that department approval of these alternate substitutions is required only from the faculty advisor and the department chair. All petitions must be forwarded to the office of the dean for inclusion in the student's permanent file.

Auditing Courses

Students in the College of Engineering may register for a course for zero credit (audit) with the permission of the course instructor and the advisor. The audit of a required course for zero credit where attendance and final performance are satisfactory, if satisfactory, the audit will be assigned. Courses completed with a mark of D or D minus requirements are not recognized unless they carry some credit toward graduation. Auditing may be used for a second-grade-only option. To register for a course on an audit basis, students must enter the course on their registration card in the usual manner except that they should indicate zero credit hours. The instructor's authorizing signature and the advisor's signature must be required on the reverse side of the registration card. To change registration from audit to credit or from credit to audit, a drop/add form is used. These changes must be made during the first three weeks of a semester or one and one-half weeks of a summer session.

Misconduct and Complaints

Student Academic Misconduct

Regulations dealing with cases of cheating or plagiarism are delineated by a college policy. In cases of cheating on an exam or quiz, the policy requires that the instructor notify the student's grade, including the assignment of the failure grade. The course with a zero grade has been reduced to an F. If the course is a core course, the student is not eligible to eliminate the failing grade. If the student requests, an instructor may inform a student's advisor and the chair of the academic department in which the student is majoring.

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Misconduct and Complaints

Student Academic Misconduct

Regulations dealing with cases of cheating or plagiarism are delineated by a college policy. In cases of cheating on an exam or quiz, the policy requires that the instructor notify the student's grade, including the assignment of the failure grade. The course with a zero grade has been reduced to an F. If the course is a core course, the student is not eligible to eliminate the failing grade. If the student requests, an instructor may inform a student's advisor and the chair of the academic department in which the student is majoring.

If the petition invokes a required engineering core course, then it must be approved as a substitution by the dean or at least one of the associate deans. Substitutions of courses that are required by the faculty of that department approval of these alternate substitutions is required only from the faculty advisor and the department chair. All petitions must be forwarded to the office of the dean for inclusion in the student's permanent file.

Auditing Courses

Students in the College of Engineering may register for a course for zero credit (audit) with the permission of the course instructor and the advisor. The audit of a required course for zero credit where attendance and final performance are satisfactory, if satisfactory, the audit will be assigned. Courses completed with a mark of D or D minus requirements are not recognized unless they carry some credit toward graduation. Auditing may be used for a second-grade-only option. To register for a course on an audit basis, students must enter the course on their registration card in the usual manner except that they should indicate zero credit hours. The instructor's authorizing signature and the advisor's signature must be required on the reverse side of the registration card. To change registration from audit to credit or from credit to audit, a drop/add form is used. These changes must be made during the first three weeks of a semester or one and one-half weeks of a summer session.

Misconduct and Complaints

Student Academic Misconduct

Regulations dealing with cases of cheating or plagiarism are delineated by a college policy. In cases of cheating on an exam or quiz, the policy requires that the instructor notify the student's grade, including the assignment of the failure grade. The course with a zero grade has been reduced to an F. If the course is a core course, the student is not eligible to eliminate the failing grade. If the student requests, an instructor may inform a student's advisor and the chair of the academic department in which the student is majoring.

If the petition invokes a required engineering core course, then it must be approved as a substitution by the dean or at least one of the associate deans. Substitutions of courses that are required by the faculty of that department approval of these alternate substitutions is required only from the faculty advisor and the department chair. All petitions must be forwarded to the office of the dean for inclusion in the student's permanent file.
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 before graduation. In Iowa the agency that controls and monitors the licensing procedure is the State of Iowa Engineering and Land Surveying Examination Board. The first step in the procedure for students enrolled in an accredited program is to pass an examination on engineering fundamentals given at the University near the time of graduation. Graduates of accredited 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 engineering fundamentals exam, graduates receive an Engineer-in-Training (ET) certificate. The second step in the procedure is to pass the advanced examination administered by the State Board of Examiners in Engineering following a minimum of four years of approved professional engineering experience. At this point the graduate engineer is a registered "Professional Engineer."

Graduate Programs

The general rules and regulations for the graduate programs are established by the Graduate College. However, the specific admission and degree requirements for each graduate engineering program are included in the information described to the individual programs. Also included in those sections is 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 85,000 books and 100,000 pamphlets equipped with microfiche and microfiche readers. It provides study spaces for 100 library users.

Iowa Computer-Aided Engineering Network (IAEWN)

This facility provides primary support for instructional computing in the College of Engineering. IAEWN consists of approximately 1,000 computer engineering work stations 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 is tied together by a high-speed network allowing all stations to share common data, programs, and peripheral devices.

The Apollo 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 to the Computing Center facilities, or be used to access national computer networks. A variety of printers, plotters, and other specialized devices are available through the IAEWN system.

Software supported by IAEWN includes several programming languages as well as graphics and word processing facilities. Also available is a number of commercially available 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.

IAEWN 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 IAEWN. The Howard I. Elder Laboratory for Engineering Computing, located on the fourth floor of the Engineering Building, houses 30 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 station clusters for software and course development activities are located in each of the six engineering departments. Remote clusters are located in the chemical engineering department in the Chemistry-Physics Building and in the Hydraulics Laboratory of the Iowa Institute of Hydraulic Research.

Computer Services

In addition to local facilities provided by IAEWN, services of the Wang Computing Center are available to students and faculty of the college. Access to Wang computing 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 FX/1000 supercomputer, a VAX 11/780 superminicomputer, and an advanced graphics equipment for research in computer-aided design.

The electrical and computer engineering department has two VAX 11/750 microcomputers 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 advanced employment. Services provided to graduating students include campus interviews, current job listings, information and assistance with resumes, cover letters, interview techniques, and assistance in career decision making.

Major resources available to all engineering students and alumni include a comprehensive employer library, information from employers specifically seeking to hire 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 interview facilities, is located in Room 3021 of the Engineering Building.

Organization of the College

The College of Engineering is organized into six departments and three research units.

The departments are chemical engineering, civil and environmental engineering, electrical and computer engineering, industrial engineering, and mechanical engineering. The 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 Laboratory 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 recognized for many years to be an international leader in numerous areas of hydraulic engineering and fluid mechanics. It was organized formally in 1941 to conduct special research on problems in engineering technologies and hydraulic and...
Project current and future needs of Iowa industries through effective collaboration with the College of Engineering. This has led to the establishment of the Iowa Institute of Biomedical Engineering, which focuses on research and development in the areas of biomechanics, biomechatronics, and tissue engineering. The institute is home to several research centers, including the Midwest Biomedical Engineering Laboratory and the Iowa Institute of Biomedical Engineering.

The Iowa Institute of Biomedical Engineering is a hub for academic and industrial collaboration, with partnerships with companies such as Medtronic and Johnson & Johnson. The institute has contributed to the development of new medical technologies and has a strong focus on translational research, moving from the lab to the market. The institute is also home to several graduate programs, including a Ph.D. program in Biomedical Engineering, which is highly ranked nationally.

In addition to research, the Iowa Institute of Biomedical Engineering is also involved in community outreach and education, with programs for high school students and community members. The institute is committed to advancing the field of biomedical engineering and making a positive impact on the health and well-being of people around the world.
### Junior Year

#### First Semester
- **57.17 Computer Engineering** 3 s.h.
- **57.18 Principles of Electronic Instrumentation** 4 s.h.
- **57.40 Biological Systems Analysis I** 3 s.h.
- **Engineering Science Core Elective (see "Engineering Science Core Electives," below)** 3 s.h.

#### Second Semester
- **225.39 Probability and Statistics for the Engineering and Physical Sciences** 3 s.h.
- **Engineering Science Elective (see below)** 3 s.h.
- **57.21 Principles of Design I** 3 s.h.
- **57.80 Biomedical Measurements I** 3 s.h.
- **57.91 Professional Seminar: Biomedical Engineering** 0 s.h.

**Total**: 16 s.h.

### Senior Year

#### Fifth Semester
- **51.85 Biomedical Engineering Systems Design** 3 s.h.
- **Biomedical engineering design elective (see "Biomedical Engineering Electives," below)** 2 s.h.
- **Biomedical engineering science elective (see below)** 3 s.h.

#### Sixth Semester
- **51.91 Professional Seminar: Biomedical Engineering** 0 s.h.

**Total**: 16 s.h.

### Engineering Science Core Electives

**Students select one of the following courses:**

- 57.12 Linear Systems Analysis
- 57.13 Engineering Biological Processes
- 57.15 Materials Science
- 57.17 Mechanics of Deformable Bodies
- 57.20 Mechanics of Fluids and Transfer Processes

### Engineering Science Electives

**Students select one of the following courses:**

- 57.12 Linear Systems Analysis
- 57.13 Engineering Biological Processes
- 57.15 Materials Science
- 57.17 Mechanics of Deformable Bodies
- 57.20 Mechanics of Fluids and Transfer Processes

#### Biomedical Engineering Electives

A total of 14 semester hours must be chosen with at least one course (3 semester hours) from the biomedical engineering design elective and one 51-prefix course (3 semester hours) from the biomedical engineering science electives. The list are as follows:

**Biomedical Engineering Design Electives**
- 57.84 Principles of Electrical Engineering Design I
- 57.82 Principles of Design II

**Biomedical Engineering Science Electives**
- 51.140 Biological Systems Analysis I
- 51.145 Biomedical Computer Systems
- 51.150 Biomechanics
- 51.160 Cardiovascular Biomechanics
- 51.160 Biomechanics in Biomedical Processes
- 51.172 Metals and Biomaterials
- 51.174 Ceramics and Glasses in Biomaterials
- 51.177 Composite Materials
- 51.180 Biomedical Measurements II

### Other Acceptable Biomedical Engineering Electives

- 51.81 Intermediate Mechanics of Deformable Bodies
- 51.133 Finite Element Techniques in Engineering I
- 50.25 Introduction to Digital Design
- 50.30 Introduction to Software Design
- 50.42 Signals and Systems
- 50.140 Digital Image Processing
- 50.164 Computer-Based Control Systems
- 50.41 Thermodynamics
- 50.141 Heat Transfer
- 50.140 Intermediate Heat Transfer
- 50.140 Intermediate Mechanics of Fluids
- Organic Chemistry I
- Organic Chemistry II
- General Physics I
- Biomedical Engineering

### Other Science, Engineering, and Design Courses

Courses approved by the advisor.

### Biomedical Engineering SubTracks

Biomedical engineering majors are encouraged to pursue one of the following subtrack curricula:

#### Biomechanics/Biofluids

**Fifth Semester**
- 57.89 Mechanics of Deformable Bodies

**Sixth Semester**
- 57.12 Principles of Design II, or equivalent
- 51.150 Biomechanics
- 51.151 Intermediate Mechanics of Deformable Bodies
- 51.160 Intermediate Mechanics of Fluids

**Seventh Semester**
- 57.82 Principles of Design II, or equivalent
- 51.150 Biomechanics

**Eighth Semester**
- 51.155 Cardiovascular Biomechanics
- 51.160 Biomechanics in Biomedical Processes
- 51.177 Composite Materials
- 51.155 Finite Element Techniques in Engineering

### Hemosthetics

**Fifth Semester**
- 57.12 Principles of Design II, or equivalent

**Sixth Semester**
- 57.82 Principles of Design II, or equivalent

**Seventh Semester**
- 57.82 Principles of Design II, or equivalent

**Eighth Semester**
- 51.150 Biomechanics

### Bioelectricity

**Fifth Semester**
- 57.12 Linear Systems Analysis

**Sixth Semester**
- 57.12 Linear Systems Analysis

**Eighth Semester**
- Two courses chosen from:
  - 51.155 Cardiovascular Biomechanics
  - 51.160 Biomechanics in Biomedical Processes
  - 51.177 Composite Materials
  - 51.155 Finite Element Techniques in Engineering
  - 51.160 Biomechanics in Biomedical Processes
  - 51.177 Composite Materials
  - 51.155 Finite Element Techniques in Engineering

### Biofluidics

**Fifth Semester**
- 57.89 Mechanics of Deformable Bodies

**Sixth Semester**
- 57.82 Principles of Design II, or equivalent

**Seventh Semester**
- 57.82 Principles of Design II, or equivalent

**Eighth Semester**
- Two courses chosen from:
  - 51.155 Cardiovascular Biomechanics
  - 51.160 Biomechanics in Biomedical Processes
  - 51.177 Composite Materials
  - 51.155 Finite Element Techniques in Engineering
  - 51.160 Biomechanics in Biomedical Processes
  - 51.177 Composite Materials
  - 51.155 Finite Element Techniques in Engineering
Graduate Programs

The goal of graduate study at both the M.S. and Ph.D. levels is to educate students in the disciplines of biomedical engineering more broadly and thereby make them more competitive at the Ph.D. level. The goal is to enable students to use contemporary methods at the biomedical engineering and medicine level of an advanced degree during a professional career in biotechnology, development, and research.

Each student's course of study is based on individual background and career objectives, and academic performance. Department faculty members have teaching and research expertise in areas related to: biomechanics, cardiovascular and fluid biomechanics, bioreactors, and other medical devices.

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, physics, mathematics, and biology. M.S. students who want a more general program may choose a more diversified program, while those who want some specialization in any particular field may concentrate their preferences by a combination of departmental courses.

Ph.D. programs may center on any one in 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 must complete a thesis or thesis program:

- 30 semester hours of course work
- 3-9 semester hours of credit for thesis research and writing toward satisfying the thesis requirement
- At least two courses in the biomedical engineering curriculum
- Thesis

A tentative plan of study for each student is determined through consultation with an advisor. All M.S. candidates must have completed at least 12 semester hours in the biomedical engineering curriculum, which is required of all Ph.D. candidates.

Doctor of Philosophy

The doctoral program, including acceptable transfer credits, requires a minimum of 72 semester hours of course work. Of these 72 hours, at least 60 semester hours must be formal course work taken after the Ph.D. degree is awarded, and at least 12 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 12 semester hours must be research and thesis credits. Based on research progress, examination results, or other measures, the student's graduate committee may require additional formal course work in order to strengthen areas of perceived weakness.

Admissions to the Ph.D. program are conditional until students successfully complete a qualifying examination, which is administered by the biomedical engineering faculty. The decision is whether the student will be allowed to continue in the Ph.D. program or whether he or she will be required to take the examination again.

Ph.D. candidates must complete a minimum grade-point average of 3.25 for all graduate work done at The University of Iowa. Upon completion of the core course work specified in the plan of study, the student must receive an average grade of 3.5 or better in the four courses in the Biomedical Engineering Program.

Biomedical Engineering Project Traineeship

The student must complete at least 24 semester hours of course work, of which at least 12 must be in the biomedical engineering curriculum.

Admissions and Financial Assistance

Students who have earned a baccalaureate or postbaccalaureate degree in an engineering discipline or 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 (GRE) (combined verbal and quantitative score of 1250) are eligible for admission to the Master of Science degree program in biomedical engineering. Students who, for unusual 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 Biometrical 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 51.172 Polymers as Biomaterials, 51.173 Metals as Biomaterials, and 51.174 Ceramics and Composites as Biomaterials.

The Biometrical Measurements Laboratory is equipped for measuring biomedical variables of clinical and epidemiological interest and for designing electronic instrumentation in biomedical engineering. This laboratory also is used for 51.180 Biometrical Measurements II.

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.

Biomaterials Laboratory

The Biomaterials Laboratory is equipped to test mechanical thermal properties of biomaterials and thin sectioning of hard tissues and prostheses for histology.

Histomorphometry Laboratory

The Histomorphometry Laboratory is equipped to study cardiovascular blood dynamics, particularly flow patterns and resistances in the human aorta. In addition, the laboratory has an imaging-processing system based on a Radynoix G4000 series digital X-ray imaging system and a GE Digital IRP4000 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 injuries, and the effect of vibration on the spine.

Biomedical Image Processing and Computing Laboratory

This laboratory has an image-processing system used to digitize anatomical slides, photographs, X-rays, and CAT scan images.

Biostatistics Laboratory

The Biostatistics Laboratory is equipped to conduct physiological experiments on cardiovascular and respiratory systems.

Courses

Special

51.088 Cooperative Education Training Assignees: Biomedical Engineering 0.5 h.

Biomedical engineering students participating in the Cooperative Education Program fulfill the course requirements by completing supervised work experience and providing record of participation in the program on the student's permanent record. Creations of faculty advised minor. Prerequisite: admission to the Cooperative Education Program.

11.111 Biological Systems Analysis I 3 h.

Application of principles and concepts derived from biological systems to develop computer simulation techniques to study physiological responses of physiological systems. Offered fall semesters: 53.15.

11.119 Biomechanics I 4 h.

Properties, Imperviousness, characteristics, and physical measurement techniques of biological systems. Offered spring semesters: 50.15.

11.120 Biomechanical Measurements I 3 h.

Courses of vision and digital circuit design, with emphasis on circuits for biomedical applications using operational amplifiers, active filters, data acquisition, and control systems and instrumentation in microcomputer systems. Offered fall semesters: 53.15.

11.130 Biomedical Engineering System Design 3 h.

Design and implementation of computerized systems and devices to solve biomedical problems. Offered fall semesters: 53.15 and 50.15.

11.132 Biomedical Engineering Design Project 4 h.

Biomedical design project usually involving actual clinical problems in biomedical engineering projects are completed jointly by students majoring in biomedical engineering and science faculty consultants. Offered spring semesters. Prerequisite: 11.15 and senior standing.

11.161 Professional Seminar: Biomedical Engineering 1 h.

Professional problems in biomedical engineering presented through lectures and discussions by guest speakers, field trips, films, and guest demonstrations. May be repeated. Prerequisite: junior standing.

11.164 Individual Investigations: Biomedical Engineering 3-4 h.

Individual projects for biomedical engineering undergraduates, such as laboratory research, medical devices, or other projects for the completion of an engineering system. Computer and research assignments. and projects. Consent of instructor required.

11.166 Biomedical Engineering Elective 3 h.

Special topics in biomedical engineering. Consent of instructor required. Open to students with a minimum of 15 semester hours in biomedical engineering. 50.15, or equivalent. Prerequisite: 51.180 or 51.181 for 50.15 or equivalent.

51.168 Biographical Methods 3 h.

Concepts of instruction and minimum wage, techniques and ethical boundaries, methods for producing wildlife-related wildlife, including injection, site-specific problems, and Dreux Biologicals: methods of biological systems. Offered spring semesters: 53.15 and 51.15. Offered fall semesters: 53.15.

51.170 Intermediate Biophysics 3 h.

Physical and mathematical relations of biological and physical materials and their interactions in vivo and in vitro. Prerequisite: 51.15.

51.172 Polymers as Biomaterials 3 h.

Polymers used in medical implants and other devices: their interaction with proteins and the insertion in vivo and in vitro. Prerequisite: 51.15.

51.173 Metals as Biomaterials 3 h.

Properties of metals used in medical implants and other devices: their interaction with proteins and insertion in vivo and in vitro. Prerequisite: 51.15.

51.179 Ceramic Materials 3 h.

Properties of ceramics used in medical implants and other devices: their interaction with proteins and insertion in vivo and in vitro. Prerequisite: 51.15. Same as 54.179.

Biomechanics/Biophysics

11.150 Biomechanical Mechanics of Soft Tissue 3 h.

Applied mechanics in solid and structural materials, analysis of problems with solid mechanics; analysis of problems with the electric and magnetic field; analysis of problems with the field of strong and weak magnetic field. Prerequisite: 11.13.

13.155 Biomechanics of Orthopaedic Devices 3 h.

Engineering analysis of orthopedic devices used for clinical applications. Study of current orthopedic devices, including knee and hip prostheses. 51.180, 53.15.

15.151 Cardiovascular Biomechanics 3 h.

Anatomy and physiology of the human cardiovascular system. Basic physical principles and techniques pertinent to cardiovascular physiology. Study of current cardiovascular devices. 53.15 and 50.15.

15.155 Biomechanics of Orthopaedic Devices 3 h.

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15.155 Biomechanics of Orthopaedic Devices 3 h.
Sophomore Year
First Semester
421 Organic Chemistry I 3 s.h.
22B4 Matrices Algebra for Engineers 2 s.h.
22B5 Differential Equations for Engineers 3 s.h.
2518 Modern Physics II 4 s.h.
571 Statics 2 s.h.
*Humanities or social sciences elective 3 s.h.
Total 15 s.h.
Second Semester
4212 Organic Chemistry II (or science elective) 3 s.h.
4213 Physical Chemistry 3 s.h.
22B2 Chemical Engineering Thermodynamics 3 s.h.
5715 Materials Science 3 s.h.
5713 Engineering Biologica Science 3 s.h.
5791 Professional Seminar: Chemical Engineering 0 s.h.
Total 15 s.h.
Junior Year
First Semester
4231 Physical Chemistry I 3 s.h.
5242 Momentum Transport 3 s.h.
5243 Chemical Engineering Thermodynamics 3 s.h.
Total 15 s.h.
Second Semester
4232 Physical Chemistry II (or science elective) 3 s.h.
4235 Physical Chemistry Laboratory 2 s.h.
22B3 Probability and Statistics for the Engineering and Physical Sciences 3 s.h.
5244 Mass Transfer Operations 3 s.h.
5246 Heat Transfer 2 s.h.
5791 Professional Seminar: Chemical Engineering 0 s.h.
5793 Principles of Design I 3 s.h.
Total 16 s.h.
Senior Year
First Semester
5245 Chemical Reaction Kinetics 3 s.h.
5246 Process Dynamics and Control in Design 3 s.h.
5247 Unit Operations Laboratory I 2 s.h.
5714 Engineering Economy 3 s.h.
*Humanities or social science elective 3 s.h.
Technical elective 3 s.h.
Technical elective 3 s.h.
Total 15 s.h.
Second Semester
5248 Unit Operations Laboratory II 2 s.h.
5246 Chemical Engineering Process Design 3 s.h.
Total 5 s.h.
Technical elective 3 s.h.
Humanities and social sciences elective 7 s.h.
5249 Professional Seminar: Chemical Engineering 0 s.h.
Technical elective 3 s.h.
Graduate Programs
The Department of Chemical and Biotechnological 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 develop skills in applying those principles to contemporary problems such as energy, environment, biotechnology, and materials. The emphasis is on research since most opportunities for graduate work in research and development. A thesis is required for each degree.
All candidates in advanced degree programs are required to assist faculty members in teaching and research as part of the graduate training.
Research
Current research strengths of the Department of Chemical and Biotechnological Engineering are in the areas of catalytic design, reactor design, global and regional environmental research, separation and bioprocess processes, biotechnological engineering and applied biocatalysis, and particulate material processing sciences.

Catalog and Reactor Design
Within the general field of kinetics, catalysis, and reaction engineering, research is being conducted in the areas of heterogeneous reactions, heterogeneous, and supported metal catalysts; gas-solid reactions, modeling and analysis of heterogeneous reactions, design of novel reactor-separators; colloidic routes being developed for both organic and inorganic chemical processes. The emphasis is on research since most opportunities for graduate work in research and development. A thesis is required for each degree.

Global and Regional Environmental Research
Concentration of the environment in which we live and work is a major problem facing today's engineers. The Department of Chemical and Biotechnological Engineering has had an active research program in the environmental area. Environmental air quality, indoor air pollution, and water pollution, are areas being studied. A significant 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 bioseparations processes. In particular, researchers are investigating a novel technique in ultrafiltration and microfiltration called transmembrane pressure pulsing. In this process, high frequency oscillating pressure across the membrane exhausts the various fluids through the membrane. Another new device is being investigated for preparative continuous electrophoresis. Electrokinetic dispersion, photophysical membranes for gas separation, and enzymatic membrane reactors are also being investigated.

Biotechnological Engineering and Applied Biocatalysis
Biotechnological engineering involves the application of enzymes, microorganisms, cells, and tissues for production of chemicals, pharmaceuticals, and other materials of commercial value. The department is active in developing novel techniques in biocatalytic processing, including enzymes in organic solvents, enzyme-based bioassays, 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 the formation of a multidisciplinary area involving other engineering departments and the Departments of Chemistry, Biotechnology, and the College of Pharmacy.

Particulate Material Processing Science
Theoretical and experimental studies in morphological analysis of particulate systems, along with kinds of particulate processes. 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 bulk material. Examples include wear debris analysis, crystallization and precipitation (formation pm—epoxies), and dust explosions and combustion of particles (particle behavior).

Master of Science
A thesis and a minimum of 24 semester hours, including at least 24 semester hours completed in residence at The University of Iowa. Work completed in the Saturday Evening Class Program as residence credit may not exceed 6 semester hours, but 6 semester hours may be completed in residence at another recognized graduate college or through the Guided
Correspondence Study Program at The University
The minimum course work requirement is 24 semester hours (about eight courses), and the remainder of the 16 semester hours is devoted to research. To be eligible for the M.S. degree, students are required to maintain at least a minimum-grade-point average of 3.50. M.S. degree candidates must defend their thesis at the final oral examination. Although it is possible to obtain an M.S. degree in one year, most students require three or four semesters to complete the requirements.

Doctor of Philosophy
The Ph.D. degree is granted primarily on the basis of achievement rather than on the accumulation of semester hours of credit. However, candidates usually are expected to have completed three or four years of residence, or two years if they already hold a recognized master's degree. In any case, degree candidates are required to have completed at least 72 semester hours of graduate credit. Ph.D. candidates are expected 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 exam or, if the assessment of the examining committee is based on a written examination covering graduate work. These examinations are arranged by the graduate office on the recommendation of the examining committee. The standards for the comprehensive examination are published in the Graduate Bulletin College. There is no foreign language requirement. A Ph.D. candidate who is a Ph.D. candidate in this department must complete 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 college or university. Graduates of foreign universities also are accepted, depending on evaluation of their records. Admission to this graduate program usually requires at least a grade-point average of 3.50. Applicants for admission to the M.S. program must be accepted by the graduate chairman of the department.

Graduate work in chemical and biochemical engineering is 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 course with minimum difficulty. Since these undergraduate courses are taken as make-up courses, most do not carry credit toward a graduate degree.

Financial Aid
A number of fellowships, scholarships, and assistantships are available to graduate students who qualify. These awards are made on the basis of need.

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 test equipment and hardness testing machines are also available. There is also a machine tooling and a variety of scientific instruments available in the nearby laboratory. Teaching aids include a digital microscope and a variety of scientific instruments available in the research lab.

Required Course Laboratories

Unit Operations Laboratory
This is primarily an instructional laboratory for senior undergraduate students. It involves experimentation in transport processes, heat transfer, fluid flow, chemical engineering unit operations, and reaction kinetics and catalysis. The laboratory includes pilot plant equipment, such as a distillation column, a reactor, and a heat exchanger. It also includes a computer-controlled process simulator, which is a simulation of the process, the computer simulation of the process, and the computer simulation of the process.

Process Control Laboratory
The process control laboratory is a modern, computer-based instructional laboratory for seniors. It is integrated to the senior process control course, and the laboratory consists of computer control of a shell-and-tube heat exchanger, a stirred-tank reactor, and a three-tank flow process. Additional laboratories include the use of the analog control system.

The computer control system is set up to provide an ensemble of learning experiences with computer experience, so that analogs and better insight into the control process can be obtained. Topics include determination of gain and time constants for simple processes, understanding of steady-state and dynamic processes, the use of analog and digital computers, and the use of computer-aided experiments. In addition, there is a computer-aided experiment that uses a computer to control the experiment. The computer is also connected to the laboratory and is used to control the experiment.

Graduate Facilities and Laboratories

To support and develop research activities, the department offers a wider variety of facilities and research equipment within and available to the department.

Computer Facilities

The departmental computer facilities contain a variety of graphics terminal, printers, and minicomputers. The department is connected to the university's Weig Center, which makes available these computers: IBM 3033, Prime 5100, IBM 3084, PDP-11, and VAX 11/780. They also provide access to the computer's Computer-Aided Engineering Laboratory.

The department also is connected to the Iowa Computer-Aided Engineering Network, which includes Apollo workstations augmented with Apple MacIntosh personal computers. In addition, the department has access to the University's computer network, which is available to the major computer laboratories.

Catalysis and Reaction Engineering Facilities

A variety of equipment is available for the study of catalysis. Techniques currently available include chromatography and spectroscopy. The facility has two mass spectrometers and two gas chromatographs and a variety of instruments for the analysis of gas samples. The facility is also connected to the university's computer network, which is available to the major computer laboratories.

The computer control system is set up to provide an ensemble of learning experiences with computer experience, so that analogs and better insight into the control process can be obtained. Topics include determination of gain and time constants for simple processes, understanding of steady-state and dynamic processes, the use of analog and digital computers, and the computer simulation of the process.
Materials Characterization Facilities

Facilities include a variety equipped laboratory for the characterization of powdery and pasty materials. The laboratory contains a variety of instruments and microscopy equipment, including an X-ray diffractometer (XRD), scanning electron microscopy (SEM), and a variety of spectrometers for chemical analysis.

Other facilities include sampling devices, devices for characterizing bulk properties, and a variety of instruments for measuring density and other properties.

Separation and Bioseparation Equipment

Processes available for the study of separation processes include a variety of methods, such as chromatography, electrochemistry, and optical microscopy.

Special

Projects

Research and development activities are ongoing in the Chemistry Department.

Biochemical Engineering

Special

Projects

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Biomedical Engineering

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Engineering

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CIVIL AND ENVIRONMENTAL ENGINEERING

Chair: Gene F. Faust
Associate professors: Massoud Arabnejad, Robert P. Austin, John F. Graff, Gregory体积 Balchakian, James W. Groat, Richard L. Valentine, Frank K. Woelk
Assistant professors: Cheryl Curiel, Mark T. Freyberg, Brian C. Gross, William A. Neiva
Adjunct professor emeritus: Peter R. Fisher
Adjunct associate professor: Yvonne Nalos
Adjunct assistant professor: Keith Shermeyer, Kent Johnson
Undergraduate Degree offered: B.S. in Civil Engineering
Graduate degree offered: M.S., Ph.D. in Civil and Environmental Engineering

Civil Engineering is one of the three largest fields of engineering. It traditionally has been concerned with facilities that are both large and essential to modern life. Civil and environmental engineering projects include transportation systems and their components, such as bridges, highways, public transit systems, railways, harbors, airports, sewers, and even some sports complexes. Office buildings that provide enclosed working and living space, environmental and hydraulic systems that provide clean water and air, including filtration plants and distribution systems for municipal and industrial water supplies, wastewater treatment plants, dams, levees, and irrigation systems. Growth areas of civil and environmental engineering include infrastructure repair, construction management, and computer-aided design, and hazardous waste treatment.

There is a critical and growing need for civil and environmental engineers. Shortages are projected for civil engineering professionals and educators in the 1990s. In the future, civil and environmental engineers will be called upon to design structures for earth and water space, preserve existing and anticipate new rivers, predict effects of global climate change on the environment, provide modern and efficient transportation systems, protect the land surface and groundwater quality.

In planning and design, civil and environmental engineers work with architects, landscape architects, planners, real estate agents, financiers, sociologists, lawyers, and other specialists as members of the design team. Some civil engineers work in engineering offices; others may be called upon to consult or supervise civil engineering projects. They have designed these field assignments, many of which are in remote and interesting parts of the world, are particularly appealing to many civil and environmental engineers.

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. Students in the senior year generally broaden their or additional concentration in areas of specialization such as structural engineering, environmental engineering, hydraulic engineering, and transportation engineering.

Curriculum
* The humanities and social sciences electives must be selected to satisfy the humanities and social sciences requirements of the College of Engineering.

Freshman Year
First Semester
4 credits of Principles of Chemistry I 3 s.h.
22M 35 Engineering Calculus I 4 s.h.
22M 40 Analytic Geometry for Engineers 2 s.h.
29 17 Introductory Physics I 4 s.h.
57 5 Engineering I 3 s.h.
Total 19 s.h.
Second Semester
4 credits of Principles of Chemistry Lab I 2 s.h.
22M 36 Engineering Calculus II 4 s.h.
22M 40 Analytic Geometry for Engineers 2 s.h.
29 18 Introductory Physics II 4 s.h.
57 9 Statics 2 s.h.
57 9 Thermodynamics I 3 s.h.
57 3 Mechanics of Deformable Bodies 3 s.h.
Total 17 s.h.

Sophomore Year
First Semester
22M 12 Vector Calculus for Engineers 3 s.h.
29 18 Introductory Physics II 4 s.h.
37 7 Statics 2 s.h.
57 9 Thermodynamics I 3 s.h.
Humans or social science elective 3 s.h.
Total 16 s.h.
Second Semester
22M 41 Differential Equations for Engineers 3 s.h.
57 10 Dynamics 3 s.h.
57 15 Materials Science 3 s.h.
57 19 Mechanics of Deformable Bodies 3 s.h.
Total 15 s.h.

Junior Year
First Semester
57 20 Mechanics of Fluids and Transfer Processes 4 s.h.
22M 41 Probability and Statistics for Engineers and Physical Sciences 3 s.h.
57 20 Soil Mechanics 3 s.h.
57 32 Modern Structural Analysis 3 s.h.
57 64 Pressure Vessel Seminar Civil Engineering 0 s.h.
Total 16 s.h.
Second Semester
57 38 Electrical Circuits 3 s.h.
57 22 Principles of Design I 3 s.h.
57 56 Design of Steel Structures 3 s.h.
57 57 Principles of Hydraulics 2 s.h.
57 28 Principles of Hydrology 2 s.h.
57 91 Professional Seminar Civil Engineering 0 s.h.
Humans or social science elective 3 s.h.
Total 16 s.h.

Senior Year
First Semester
53 36 Reinforced Concrete Structures 3 s.h.
53 70 Transportation Engineering 3 s.h.
53 79 Hydraulic Design 3 s.h.
53 81 Computers in Civil Engineering 3 s.h.
53 91 Professional Seminar Civil Engineering 0 s.h.
53 150 Principles of Environmental Engineering 3 s.h.
Humans or social science elective 3 s.h.
Total 18 s.h.
Second Semester
53 70 Project Design and Management in Civil Engineering 3 s.h.
53 855 Experiences in Civil and Environmental Engineering 3 s.h.
53 91 Professional Seminar Civil Engineering 0 s.h.
Technical electives 6 s.h.
Humans or social science elective 3 s.h.
Total 15 s.h.

Graduate Programs
The graduate program in civil and environmental engineering at both the M.S. and Ph.D. levels prepares students for professional careers and further study. The principal areas of concentration are environmental engineering and science, hydrology and water resources, structures, mechanics, and materials and transportation.

*Humanities or social science elective 3 s.h.
Total 15 s.h.
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, waste management and pollution control, and solid and hazardous waste management. Inter-disciplinary specialization and study is conducted with programs including the Iowa Institute of Hydraulic Research, the Center for Global and Environmental Research, far Center for Health Effects of Environmental Contaminants, and the Department 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 devote about half of their time to teaching. The institute offers unique opportunities for students to participate actively in the research, analysis, and design aspects of real world problems. 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 Hydrometeorology and Water Resources, with its high-speed computer facilities and advanced graphics and communication software, enhances the study of hydrology and water resources curricula.

Structures, Mechanics, and Materials

The areas of mechanics, concrete, and materials curricula are directed primarily toward computer-aided structural design, optimization, and mechanics of materials. Special attention is given to the areas of structural optimization, computational methods, concrete and prestressed concrete structures, high performance steels and reinforced concrete masonry. Course work in research in structural design and optimization, dynamics of structures, finite element techniques, soil mechanics and foundations, concrete structures, and design philosophies 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 Simulation 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 program in civil and environmental engineering is designed to permit further concentration in the areas of the student's choice. Graduates are placed in advanced technical positions in industry, consulting firms, or government, or they may continue their graduate study. Current and projected demand for M.S. graduates is excellent.

In general, the plan of study, with or without thesis, must include: a minimum of 30 semester hours credit; with no more than 6 semester hours credit allowed for the thesis. An additional 3 semester hours are required in the methodology environmental engineering curricula.

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, in some program options, a written examination.

Doctor of Philosophy

The doctoral degree is granted primarily on the basis of achievement, rather than on a prescribed course of study. Requirements for semester hours of course work vary among the specialty areas. Candidacies 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 dissertation defense beyond the baccalaureate degree. Some program options have higher requirements.

All doctoral students are required to pass a written and oral comprehensive examination before being formally admitted to candidacy for the degree. This examination is usually taken when virtually all of the student's course work has been completed.

The program culminates in a final examination, in which candidates must successfully defend their dissertation. Doctoral candidates are expected to maintain a grade-point average of 3.20 throughout the doctoral program.

The program also cooperates in 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; students may be admitted from all disciplines of engineering as well as from the mathematical and basic sciences.

Applicants for the master's degree program are expected to have a cumulative undergraduate grade-point average of at least 2.50, 3.00 is preferred. For admission to candidacy for the doctorate, the maximum grade-point average is 3.50 based upon previous graduate work. Applicants whose grade-point averages are slightly lower are invited to correspond 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 awarded on a variety of research projects, as well as a limited number of teaching assistantships. Selection of recipients is based on academic achievement and research interest.

Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core

The freshman engineering course DSE.1 Engineering Core includes an introduction to the Iowa Computer-Aided Engineering Network (IACEN), which is described under "College Facilities." Students in the course learn word processing on Macintosh microcomputers and elementary graphics using Apollo workstations. Junior students in the course Principles of Design I make extensive use of the computer hardware and software available through IACEN.

For information about laboratories affiliated with civil engineering classes the instructor responsible for the course or department.

Required and Elective Course Laboratories

• 03.30 Solid Mechanics (3.0); Equipped for determining the classification, seismic characteristics, stress-strain properties, and strength of soils.
Graduate Facilities and Laboratories

Environmental Engineering and Science Laboratories

Research in environmental engineering is conducted in the department's Phillip P. Morgan Sanitary Engineering Research Laboratory at the 304A City Municipal Wastewater Treatment Plant, at the Environmental Engineering Laboratory at the University of Water Treatment Plant, and in the Environmental Research Laboratory at the Engineering Research Facility.

The Morgan laboratory is devoted to research activities in the wastewater treatment area. It includes a modern wet-digested, automatic analyzer and solid waste equipment. A photochromatic apparatus and a gas chromatograph are available for research and teaching.

The Environmental Engineering Laboratory is equipped for both routine and advanced chemical and physical analyses of water and provides space for both bench and pilot scale studies. The water and effluent-generating unit is especially designed to allow the evaluation of treatment processes for specific study under controlled but realistic conditions. The laboratory is a place for research and training in environmental science and technology.

The Environmental Research Laboratory at the Engineering Research Facility consists of a 2,500 square feet of space for wet chemistry and microbiology of ground water analysis and hazardous wastes. The laboratory is equipped with a mass spectrometry and a high performance liquid chromatography system. A variety of equipment is available for research, teaching, and training in environmental science and technology.

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 Hydroinformatics and Water Resources.

The institute houses some of the most modern research facilities in the world, including a 360-foot test tunnel, several hydraulic flumes and wind tunnels, a dispersion flume, a wet lab, and two state-of-the-art low-temperature flow facilities for simulation of ice phenomena. An environmental hydraulic flume for modeling of floodplains; a wind tunnel; a computer-controlled data handling system; and 2-D and 3-D laser doppler anemometers for micro-scale velocity measurements.

The Computational Laboratory for Hydroinformatics and Water Resources utilizes an Apollo ENIAC superminicomputer, several Apollo high-speed workstations, and graphic terminals and peripherals. It is a node in the University of Iowa's Ethernet ultra-high-speed communication network. The laboratory has real-time links with the nationwide databases of the U.S. Army Corps of Engineer, Rock Island District, and the National Water Survey. It is equipped with advanced graphics software, communication, software, mathematical software packages, and a Geographic Information System (GIS). The laboratory is managed by a full-time data systems coordinator.

Structures, Mechanic, and Materials Laboratories

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 net of Apollo work stations and other peripherals. It is used for teaching and research in current computer-aided 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 plastic. Equipment includes a computer-controlled MTS axial-torsional test system, universal testing machines, and a stress-relating machine.

The ice engineering research laboratory is linked to the MTS test system with a state-of-the-art digital instrumentation system. There is also a Tomlinson testing box, a test tank, a 12-gallon tank, and a variety of equipment to allow testing of the mechanical properties of ice or ice-structure interaction processes.

Courses

Special

2500E Cooperative Education Training Architectural Engineering 3.0 3.0

Civil engineering students participate in the Cooperative Education Training Program in the School of Engineering and Architecture to gain experience in the workplace. Students earn academic credit and a minimum of six weeks of related work experience during the academic year. Students also have the opportunity to earn a professional degree at Northern Illinois University.

3205 Computer in Civil Engineering 3.0 3.0

Civil engineering students are expected to acquire basic knowledge and skills in computer science and related areas. The computer science program offers courses in computer science, software engineering, computer operations, development, and related areas. Students are expected to have knowledge of computer science, software engineering, computer operations, development, and related areas.

3305 Design and Remote Sensing Engineering Surveying and Remote Sensing 3.0 3.0

Engineering, Surveying, and Remote Sensing courses are offered in two areas: Engineering Surveying, with emphasis in topography, and Remote Sensing, with emphasis in geomatics. These courses are designed for students who want to learn about the various aspects of engineering surveying and remote sensing.

3550 Project Design and Management in Civil Engineering 3.0 3.0

Design of civil engineering projects, individual and team design, project management, construction quality, and project management. Emphasis on project management, construction quality, and project management.

3565 Subsoil and Ground Water Quality 3.0 3.0

Subsoil and ground water quality in the environment by ground water quality. The course covers groundwater hydrology, groundwater pollution, and treatment of groundwater quality problems.

3585 Environmental Engineering 3.0 3.0

Environmental engineering and science laboratories provide facilities for research in environmental science and technology. The course covers environmental science and technology.

3587 Professional Seminar: Civil Engineering 3.0 3.0

Professional seminar in civil engineering provides an opportunity for students to gain experience in the workplace and to discuss the various aspects of civil engineering.

3595 Individual Investigation: Civil Engineering 3.0 3.0

Individual investigation in civil engineering undergraduate students for laboratory studies and design projects. Laboratory studies and design projects are arranged to stimulate independent study.

3605 Geological Analysis: Civil Engineering 3.0 3.0

Geological analysis in civil engineering provides an opportunity for students to gain experience in geological analysis and related areas. The course covers geological analysis and related areas.

3625 Environmental Impact Assessment 3.0 3.0

Environmental impact assessment in civil engineering provides an opportunity for students to gain experience in environmental impact assessment and related areas. The course covers environmental impact assessment and related areas.

3645 Environmental Policy and Management 3.0 3.0

Environmental policy and management in civil engineering provides an opportunity for students to gain experience in environmental policy and management.

3685 Introduction to Computer-Aided Engineering 3.0 3.0

Introduction to computer-aided engineering provides an opportunity for students to gain experience in computer-aided engineering.

3695 Introduction to Environmental Engineering 3.0 3.0

Introduction to environmental engineering provides an opportunity for students to gain experience in environmental engineering.

3735 Computer-Aided Engineering 3.0 3.0

Computer-aided engineering provides an opportunity for students to gain experience in computer-aided engineering.

3755 Computer-Aided Analysis 3.0 3.0

Computer-aided analysis in civil engineering provides an opportunity for students to gain experience in computer-aided analysis.

3775 Computer-Aided Design 3.0 3.0

Computer-aided design in civil engineering provides an opportunity for students to gain experience in computer-aided design.

3795 Computer-Aided Simulation 3.0 3.0

Computer-aided simulation in civil engineering provides an opportunity for students to gain experience in computer-aided simulation.

3815 Environmental Engineering 3.0 3.0

Environmental engineering provides an opportunity for students to gain experience in environmental engineering.

3835 Environmental Engineering 3.0 3.0

Environmental engineering provides an opportunity for students to gain experience in environmental engineering.

3855 Environmental Engineering 3.0 3.0

Environmental engineering provides an opportunity for students to gain experience in environmental engineering.

3875 Environmental Engineering 3.0 3.0

Environmental engineering provides an opportunity for students to gain experience in environmental engineering.

3895 Environmental Engineering 3.0 3.0

Environmental engineering provides an opportunity for students to gain experience in environmental engineering.
531.2 Analysis of Mechanical Systems 1
531.4 Dynamic Systems 1
531.6 Systems Engineering 1
531.8 Environmental Systems Engineering 1
531.10 Chemical Systems Engineering 1
531.12 Biomedical Systems Engineering 1
531.14 Transportation Systems Engineering 1
531.16 Information Systems Engineering 1
531.18 Systems Engineering and Management 1

532.1 Analytical Methods in Thermodynamics 1
532.3 Heat Transfer 1
532.5 Fluid Mechanics 1
532.7 Heat and Mass Transfer 1
532.9 Fluid Flow and Transportation 1

533.0 Mechanics of Solids 1
533.1 Elasticity 1
533.2 Plasticity 1
533.3 Fracture Mechanics 1
533.4 Composites 1
533.5 Nonlinear Elasticity 1

534.0 Statics and Dynamics of Structures 1
534.1 Statics and Kinematics 1
534.2 Dynamics of Structures 1
534.3 Control of Structures 1

535.0 Soil Mechanics 1
535.2 Geotechnical Engineering 1
535.4 Geophysical Methods in Geotechnical Engineering 1

536.0 Foundations of Structures 1
536.2 Analysis of Applied Structures 1
536.3 Analysis of Building Structures 1
536.4 Analysis of Bridge Structures 1
536.5 Analysis of Building Structures 1

537.0 Structural Engineering 1
537.2 Structural Analysis 1
537.3 Structural Design 1
537.4 Structural Control 1

538.0 Mechanics of Structures 1
538.2 Analytical Methods in Mechanics of Structures 1
538.4 Experimental Methods in Mechanics of Structures 1

539.0 Nuclear Engineering 1
539.2 Nuclear Reactor Engineering 1
539.4 Nuclear Fuels and Reactor Components 1
539.6 Nuclear Safety and Radiation Protection 1

540.0 Automation and Control 1
540.2 Automation and Control Systems 1
540.4 Automation and Control Devices 1
540.6 Automation and Control Methods 1

541.0 Computer-Aided Design 1
541.2 Computer-Aided Engineering 1
541.4 Computer-Aided Manufacturing 1
541.6 Computer-Aided Process Design 1

542.0 Manufacturing 1
542.2 Manufacturing Systems 1
542.4 Manufacturing Processes 1
542.6 Manufacturing Automation 1

543.0 Materials Science and Engineering 1
543.2 Materials Processing 1
543.4 Materials Characterization 1
543.6 Materials Design and Applications 1

544.0 Materials Science 1
544.2 Materials Processing 1
544.4 Materials Characterization 1
544.6 Materials Design and Applications 1

545.0 Materials Science and Engineering 1
545.2 Materials Processing 1
545.4 Materials Characterization 1
545.6 Materials Design and Applications 1

546.0 Manufacturing 1
546.2 Manufacturing Systems 1
546.4 Manufacturing Processes 1
546.6 Manufacturing Automation 1

547.0 Materials Science 1
547.2 Materials Processing 1
547.4 Materials Characterization 1
547.6 Materials Design and Applications 1

548.0 Manufacturing 1
548.2 Manufacturing Systems 1
548.4 Manufacturing Processes 1
548.6 Manufacturing Automation 1

549.0 Materials Science 1
549.2 Materials Processing 1
549.4 Materials Characterization 1
549.6 Materials Design and Applications 1

550.0 Environmental Engineering 1
550.2 Water Resources Engineering 1
550.4 Waste Management 1
550.6 Environmental Impact Assessment 1

551.0 Environmental Engineering 1
551.2 Water Resources Engineering 1
551.4 Waste Management 1
551.6 Environmental Impact Assessment 1

552.0 Environmental Chemistry 1
552.2 Water Chemistry 1
552.4 Air Pollution Chemistry 1

553.0 Environmental Engineering 1
553.2 Water Resources Engineering 1
553.4 Waste Management 1
553.6 Environmental Impact Assessment 1

554.0 Environmental Chemistry 1
554.2 Water Chemistry 1
554.4 Air Pollution Chemistry 1
S1244 Seminar in Electronic Nanotechnology 3 a-b
Practical and theoretical aspects of high-resolution TEM, STM, and EELS, with emphasis on the properties of nanostructures and the development of new materials for nanotechnology. Prerequisites: CHEM 311 and PHYS 310.

S1245 Topics in Environmental Engineering 3 a-b
Focus on specific environmental engineering topics such as air pollution, water quality, waste management, and renewable energy. Prerequisites: EENG 310 and EENG 320.

S1272 Industrial Water and Hazardous Waste Management 3 a-b
Techniques and methods for the management and disposal of hazardous waste, hazardous materials, and stormwater quality. Prerequisites: EENG 310 and EENG 320.

Transportation
S1305 Transportation Planning and Control 3 a-b
Introduction to transportation systems, traffic fundamentals, and the analysis of transportation networks. Prerequisites: MATH 220 and EENG 310.

S1307 Transportation Systems Analysis 3 a-b
Transportation systems analysis and design, with emphasis on traffic flow models, urban transportation systems, and the analysis of highway and rail systems. Prerequisites: EENG 310 and MATH 220.

S1309 Traffic and Urban Planning 3 a-b
Traffic engineering, urban planning, and the impact of transportation systems on urban development. Prerequisites: EENG 310 and MATH 220.

Hydraulics, Hydrology, and Water Resources
S1201 Principles of Hydraulics 3 a-b
Basic principles of fluid mechanics and the analysis of hydrodynamic processes. Prerequisites: MATH 220 and PHYS 210.

S1204 Hydrology and Water Resources 3 a-b
Fundamentals of hydrology, water resources, and the management of aquatic systems. Prerequisites: MATH 220 and PHYS 210.

S1205 Water Resources Engineering 3 a-b
Introduction to the principles of water resource engineering, including surface water management, groundwater systems, and water infrastructure. Prerequisites: EENG 310 and EENG 320.

S1207 Experimental Methods in Hydrology and Water Resources 3 a-b
Methods and techniques for the experimental study of hydrologic and water resources systems. Prerequisites: MATH 220 and PHYS 210.

S1217 Hydrologic-Natural Resource Engineering 3 a-b
Introduction to the principles and techniques of hydrologic-natural resource engineering. Prerequisites: MATH 220 and PHYS 210.

S1218 Hydrologic-Natural Resource Engineering 3 a-b
Introduction to the principles and techniques of hydrologic-natural resource engineering. Prerequisites: MATH 220 and PHYS 210.

S1219 Hydrologic-Natural Resource Engineering 3 a-b
Introduction to the principles and techniques of hydrologic-natural resource engineering. Prerequisites: MATH 220 and PHYS 210.

S1272 Hydrology and Water Resources 3 a-b
Introduction to the principles and techniques of hydrology, water resources, and the management of aquatic systems. Prerequisites: MATH 220 and PHYS 210.

Electric and Computer Engineering • Engineering 363

Graduate Seminars, Advanced Topics, Research
S1302 Readings in Civil and Environmental Engineering 3 a-b
For graduate students who are interested in exploring specific topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1304 Graduate Seminar: Stormwater Management 3 a-b
Techniques and methods for the management and disposal of stormwater, rainwater, and other forms of runoff. Prerequisites: EENG 310 and EENG 320.

S1306 Environmental Engineering Seminar 3 a-b
Presentation and discussion of current topics, case studies, and research in environmental, civil, and water resources engineering. Prerequisites: EENG 310 and EENG 320.

S1308 Contemporary Issues in Civil and Environmental Engineering 3 a-b
Discussion and analysis of current issues and challenges facing civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1312 ECG: Engineering and Sustainability 3 a-b
Introduction to the principles and techniques of environmental and sustainability engineering. Prerequisites: EENG 310 and EENG 320.

S1314 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1316 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1318 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1320 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1322 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1324 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1326 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1328 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1330 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1332 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1334 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1336 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1338 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1340 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1342 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1344 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.

S1346 Research Topics: Civil and Environmental Engineering 3 a-b
Research topics in civil and environmental engineering. Prerequisites: EENG 310 and EENG 320.
From its early beginnings of electrical power from windmills, 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 electric energy and information in the form of electrical signals. The important role of the digital computer in these activities is emphasized by the program title, electrical and computer engineering.

Graduates of the program are employed in semiconductors, aerospace, telecommunications, 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 courses, mathematics, and physics 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 electrical and computer engineering, telecommunication, 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.

**1591 Professional Seminar: Electrical Engineering must be taken once in the junior year and once in the senior year.

Freshman Year

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>E 13 Principles of Chemistry I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>F 13 Principles of Chemistry I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>22M 25 Engineering Calculus II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>2518 Engineering I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>Humanities or social science</strong></td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17 s.h.</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>416 Principles of Chemistry Lab I</td>
<td>2 s.h.</td>
</tr>
<tr>
<td>22M 16 Engineering Calculus II</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>3224 40 Linear Algebra for</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>2517 Introduction Physics I</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>5106 Engineering II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15 s.h.</td>
</tr>
</tbody>
</table>

Sophomores Year

First Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>22M 41 Differential Equations for Engineers</td>
<td>3 s.h.</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>57 18 Introductory Physics III</td>
<td>4 s.h.</td>
</tr>
<tr>
<td>57 18 Electrical Circuits</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>57 18 Thermodynamics I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15 s.h.</td>
</tr>
</tbody>
</table>

Junior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>225 35 Probability and Statistics for the Engineering and Physical Sciences</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>5102 Introduction to Digital Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>5109 Electronic Circuits</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>51 30 Signals and Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>51 90 Professional Seminar: Electrical Engineering</strong></td>
<td>0 s.h.</td>
</tr>
<tr>
<td><strong>Humanities or social science</strong></td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15 s.h.</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 33 Introduction to Software Design</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>55 35 Communication Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>55 36 Control Systems</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>55 37 Electromagnetic Theory</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>55 90 Principles of Electrical Engineering I</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>15 s.h.</td>
</tr>
</tbody>
</table>

Senior Year

**First Semester**

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>55 72 Electrical Engineering Materials and Service</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>55 35 Principles of Electrical Engineering II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>55 90 Professional Seminar: Electrical Engineering</strong></td>
<td>0 s.h.</td>
</tr>
<tr>
<td><strong>Technical electives</strong> (see &quot;Technical Electives&quot; below)</td>
<td>9 s.h.</td>
</tr>
<tr>
<td><strong>Humanities or social science</strong></td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>17 s.h.</td>
</tr>
</tbody>
</table>

Second Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 01 Modern Physics</td>
<td>3 s.h.</td>
</tr>
<tr>
<td>55 90 Principles of Electrical Engineering II</td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>Technical electives</strong> (see &quot;Technical Electives&quot; below)</td>
<td>9 s.h.</td>
</tr>
<tr>
<td><strong>Humanities or social science</strong></td>
<td>3 s.h.</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>18 s.h.</td>
</tr>
</tbody>
</table>

Technical Electives

Technical electives must include at least two of the following.

- 50 35 Computer Architecture and Organization
- 50 36 Power Systems Analysis
- 50 37 Control Systems Analysis
- 50 33 Introduction to VLSI Design
- 50 35 Introduction to Computer-Based Systems
- 50 36 Testing Digital Logic Circuits
- 50 30 Design and Implementation of Digital Systems
- 50 34 Digital Electronics
- 50 34 Linear Integrated Circuits
- 50 34 Digital Integrated Electronics
- 50 34 Digital Signal Processing
- 50 34 Digital Image Processing
- 50 34 Communication Theory
- 50 34 Introduction to Information and Coding Theories
- 50 34 Control Theory
- 50 34 Computer-Based Control Systems
- 50 34 Introduction to Robotics
- 50 34 Solid State Physical Electronics
- 50 34 Optical Signal Processing
- 50 34 Principles of Defense I
- 50 34 Principles of Defense II

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 adviser and, with the adviser, plan a master's 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

Pulsing 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 a topic in acoustics physics of a theoretical as well as experimental nature. These topics include plasma confinement and stability and nonlinear wave phenomena, such as solitons and shocks. A plasma physics
Electrical and Computer Engineering  •  Engineering  365

laboratory is available to support this activity. An electronic instrument laboratory and an ultrasonic facility are used to conduct experimental work in the areas of optical instruments, especially acoustic-optics, and nonlinear wave phenomena at ultrasonic frequencies. In addition, the laboratory to support the research work is equipped with advanced equipment and has a comprehensive range of facilities for conducting research work in the areas of optical systems, especially acoustic-optics, and nonlinear wave phenomena at ultrasonic frequencies.

In the area of optical systems, research projects involve the use of optical fibers and various light sources to build special-purpose analog devices for optical processing and optical interconnects. A small-scale optical processing laboratory is being developed in the optical processing laboratory.

**Computer Systems**

Research emphasis is directed toward the design of highly reliable computer systems, distributed computing, parallel processing, and reconfigurable computer systems. Areas of interest include fault-tolerant computing, high-speed distributed computing, and parallel processing, including distributed computing, parallel processing, and high-speed computing. High-speed computer systems, parallel processing, and distributed computing are being studied in the optical processing laboratory.

This work is supported by a number of government agencies, including the National Science Foundation, the National Institutes of Health, the National Institute of Standards and Technology, and the National Aeronautics and Space Administration.

Subjects include design and analysis of computer systems, computer architecture, computer-aided design, computer-aided manufacturing, computer-aided engineering, and computer-aided design and manufacturing.

Current research activities include the study of computer systems and computer-aided design, computer-aided manufacturing, computer-aided engineering, and computer-aided design and manufacturing.

**Signal and Image Processing**

Cardiovascular signal and image processing, signal processing associated with speech and hearing, and vision and hearing are active areas. Collaborative efforts involve the Department of Biological Engineering and the College of Medicine. A digital signal processing laboratory and a cardiovascular image processing laboratory, the latter located in the cardiovascular center at The University of Iowa Health Care, are available to support this research. The special-purpose computer systems 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 algorithms for signal processing and communications problems.

**Control Systems and Robotics**

Current research emphasizes optimal control, learning and adaptive control, control and robotics, multi-agent robot manipulation, and sensor-based robotics. Work also is being done in identification, and control and robotics for linear and nonlinear dynamic systems. A modern control systems research laboratory supports this effort. The lab is equipped with a complete set of control and robotics systems to support the research. The lab is equipped with a complete set of control and robotics systems to support the research.

**Master of Science**

There are two M.S. degree options: with and without thesis. The thesis option requires 30 semester hours of coursework, including at least 12 semester hours of courses in electrical and computer engineering. The non-thesis option requires 36 semester hours of coursework, with a minimum of 18 semester hours from an approved list of courses in electrical and computer engineering. The M.S. degree in computer science includes at least 12 semester hours of courses in electrical and computer engineering. The M.S. degree in computer science includes at least 12 semester hours of courses in electrical and computer engineering.

**Admission**

The usual requirement for admission to the graduate program is a grade-point average of at least 3.0 for M.S. students and 3.25 for Ph.D. students on all courses in electrical and computer engineering, excluding all remedial courses. A grade-point average of 3.00 or higher is required. A grade-point average of 3.00 or higher is required. A grade-point average of 3.00 or higher is required. A grade-point average of 3.00 or higher is required.

**Special Facilities and Laboratories**

Undergraduate Instruction

Electrical and computer engineering provides core instruction in the college in systems, electrical circuits, and electronics.

Successful completion of the Ph.D. comprehensive examination: Successful completion of the Ph.D. comprehensive examination: Successful completion of the Ph.D. comprehensive examination: Successful completion of the Ph.D. comprehensive examination: Successful completion of the Ph.D. comprehensive examination: Successful completion of the Ph.D. comprehensive examination: Successful completion of the Ph.D. comprehensive examination.
Undergraduate Program

The undergraduate curriculum in industrial engineering requires a strong foundation of courses in engineering science, mathematics, design, 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.
Roentgen (102 or 103) 4 s.h.
22L35 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.
22M30 Engineering Calculus II 4 s.h.
22M10 Matrix Algebra for Engineers 2 s.h.
29.17 Introductory Physics I 4 s.h.
57.6 Engineering II 3 s.h.
Total 15 s.h.

Sophomore Year

First Semester
22M41 Differential Equations for Engineers 3 s.h.
29.18 Introductory Physics II 4 s.h.
52.1 General Chemistry I 3 s.h.
52.9 Thermodynamics I 3 s.h.
57.14 Engineering Economy 3 s.h.
Total 18 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 Physics 3 s.h.
57.15 Meteorology 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.
56.145 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 0 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.
57.171 Operations Research 3 s.h.
Technical elective (see below) 3 s.h.
Total 15 s.h.

Senior Year

First Semester
31.106 Psychology in Management (social science elective) 3 s.h.
56.01 Professional Seminar: Industrial Engineering 3 s.h.
56.131 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
56.01 Professional Seminar: Industrial Engineering 3 s.h.
56.160 Operations Systems Design 4 s.h.
56.142 Quality Control and Engineering Statistics 3 s.h.
Humanities elective (100 level) 3 s.h.
Technical electives (see below) 6 s.h.
Total 16 s.h.

Economics Electives
Students must select from the following:
61.100 Price, Employment, and Production Theory 3 s.h.
61.120 Microeconomics 3 s.h.
61.11 Labor Economics 3 s.h.
68.173 Managerial Economics 3 s.h.

Humanities and Social Science Electives
Those must be selected to qualify the College of Engineering requirements. Note: social science electives are highly recommended. An advising guide for humanities sequences may be obtained from the office of the dean.

Mathematics and Statistics Electives
Students may select from the following:
22M44 Vector Calculus for Engineers 3 s.h.
22M41 Elementary Numerical Analysis 3 s.h.
Advanced statistics course (with advisor's approval) 3 s.h.

Engineering Science Electives
Students must select one of these:
57.10 Dynamics 3 s.h.
57.12 Linear Systems Analysis 3 s.h.
57.13 Engineering Biological 3 s.h.
57.18 Principles of Electronic Instruments 4 s.h.
57.19 Mechanics of Deformable Bodies 3 s.h.
57.30 Mechanics of Fluids and Transducer 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.
56.98 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.
54.143 Advanced Human Factors Engineering 3 s.h.
56.145 Advanced Managerial Psychology 3 s.h.
56.15 Microcomputer Applications 3 s.h.
56.152 Engineering Administration I 3 s.h.
56.153 Quantitative Investment Analysis 3 s.h.
56.156 Engineering Economic Decisions 3 s.h.
56.153 Quality Engineering I 3 s.h.
56.162 Reliability Theory and Practice 3 s.h.
56.157 Regression Analysis 3 s.h.
56.163 Systems 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 entire life cycle. Quality is the fitness 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 those cases that occur, as well as during the design, development, and manufacture of products or 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 following selection of effective courses and the educational programs. For the quality engineering specialization, 12 semester hours are required from the following list.
56.132 Introduction to Industrial Engineering 3 s.h.
56.138 Artificial Intelligence in Manufacturing I 3 s.h.
56.162 Reliability Theory and Practice 3 s.h.
56.157 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 student's background, career objectives, and social/economic needs. 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, engineering and management quality, and production control, and operations research and applied statistics.

Manufacturing courses, offered by the ME series, delve into selecting appropriate manufacturing materials, planning processing operations, drawing control strategies, and designing products and manufacturing systems. Contemporary topics in computer-aided planning and design, computer-controlled manufacturing, and applications of artificial intelligence in manufacturing are covered.

Human factors studies concentrate on applying physiological, psychological, and sociological sciences to problems in manufacturing and service systems. These problems concern interacting time and organizations to the people who perform the jobs within the organization as well as managing and motivating these people. Courses in the 60 series cover these topics.

Information and computer engineering management courses concentrate on computerized information systems and design of supporting software. Other topics include engineering administration and economic and economic systems. This area is covered by courses in the 60 series.

The quality and production control area encompasses facilities design, quality assurance, reliability, and manufacturing. This area is covered by courses in the 50 series.

Studies in operations research and applied statistics concentrate on mathematical, statistical, and engineering sciences 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 discriminate 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 includes flexible manufacturing systems, design, optimum control of production systems, adaptive manufacturing control, parametric robotic control, and automatic pattern recognition of parts. Current research in human factors engineering/organizational information on human information processing, performance, time statistics, and cognitive tasks, and the effects of aging on human performance. Other ongoing research is directed to the use of digital systems to achieve highly reliable, cost-effective, and efficient research and computer systems. Research on computer-based systems, materials handling systems, location and allocation of automatic systems, and line expert systems in production control, and inventory control is currently active.

Ongoing research in operations research and applied statistics is currently directed toward optimization, expert systems in scheduling and dispatching, flexible manufacturing and medium number generation, and the development of programming technique 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 work. The two programs, including a minimum of 8 semester hours of research, are:

1. Students who select the non-thesis option complete a minimum of 24 semester hours of coursework at the 600 or 700 level; including at least 7 semester hours at the 700 level or at the 600 level with the designation "advanced" or "contemporary topics." The student develops a tentative plan of study through consultation with his or her advisor. The final plan of study is reviewed by the student's examining committee and approved by the student's examining program chair and the Graduate College dean.

2. Entering 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 English in the English language are essential. Engineering management and human factors students will find psychology and engineering design courses to be helpful preparation. Compensatory course work may be required by students with nonengineering backgrounds.

Graduate students are required to maintain a minimum grade-point average of 3.00 in all graduate course work taken (both 600- and 700-level courses) at The University of Iowa. In order to be eligible for the M.S. degree, the nature of the final examination is required by the examining committee. It may consist of both written and oral parts. The examination explores student's course preparation and/or an appropriate individual investigation.

Doctoral Philosophy

Typically, Ph.D. programs in industrial engineering require at least 21 semester hours of study, including research for the dissertation. Actual study requirements above this minimum are specified by the Ph.D.'s advisory committee. There is no foreign language requirement or special requirements for research techniques. Admission to degree candidacy requires a minimum grade-point average of 3.50 in all graduate work taken after the University of Iowa and the demonstration of a capacity for individual achievement.

Upon completing the course work specified by their advisors, students are eligible to become graduate students. These students are admitted to the comprehensive examination, which includes both written and oral parts. The Ph.D. examination usually includes the presentation of a dissertation proposal, so that the advisory committee, the faculty, and the student have an opportunity to consider the student's academic preparation in light of the opportunity to complete the degree. Typically, a comprehensive examination, students are accepted as candidates for the Ph.D. and usually have only to complete and defend their dissertation.

In-state (Ph.D. study is discouraged.

Admission

Students with an M.S. objective may be admitted on an A.B.T.E., bachelor's baccalaureate curriculum in any engineering discipline or in the mathematical or physical sciences with a minimum grade-point average of 2.5 and an acceptable score on the Graduate Record Examination (GRE) General Test (Typically at least 600 verbal, 600 quantitative). Applicants from non-U.S. institutions must meet equivalent courses of the respective institutions and have completed a minimum of 60 semester hours with at least 30 semester hours in mathematics. Students from business or social science programs with a strong mathematical preparation also may be considered for regular or conditional admission. Students in conditional status must achieve regular
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 staff. Students who do not maintain either, are dismissed. Admissions to the Industrial Engineering faculty and other available resources.

Students with a Ph.D. objective may be admitted to an ABET-accredited bachelor's or a graduate-level curriculum in any engineering discipline or in the mathematical and physical sciences with a minimum grade-point average of 3.00 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 business or social science programs as determined individually. Students who wish to earn a P.D. and who have a B.S. degree or an M.S. degree without thesis usually are admitted to the M.S. program. All admissions to the Ph.D. program are approved by the faculty as a committee of the whole.

Financial Aid

A member of one-quarter-time and one-half-time graduate student teaching and research assistantships are available. Awards are based on students' academic records and assessment of their potential contributions to instruction and research. Those interested should apply directly to the Industrial Engineering faculty for further information.

Special Facilities and Laboratories

Engineering Core

Information about laboratories affiliated with core courses covered by other departments can be found in the catalog sections for each of the other engineering departments.

Required and Elective Course Laboratories

Industrial engineering occupies the north wing of Old Trestle Hall in the Engineering Building. Room numbers and facilities are described below.

Computer Integrated Systems Laboratory

This facility is equipped to support instruction in digital signal processing and computer control systems. A personal computer is available for program development and programming operations. The laboratory is equipped with state-of-the-art equipment for microcomputer control systems, microprocessors, microcomputers, and related software.

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 by downloading via RS-232D serial link from a programming station in the CAM Laboratory. Research studies in the methodology of various methods for different cutting tools and tool maintenance programs are planned.

Future additions to the laboratory include a full-service 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 precision metal welding and conventional metal working processes. The equipment is designed to enhance the students' understanding of the processes and to promote a more productive working environment. A full-size welding robot, a welding machine, a number of other welding equipment items, and a number of other welding equipment items, are available for use in the laboratory.

CNC (Computer-Aided Manufacturing) (CAM) Laboratory

This laboratory is used to teach CAD (computer-aided design) and CAM (computer-aided manufacturing) and to set up projects to demonstrate various computer-aided manufacturing techniques. Software and hardware are used to design parts and process data, including generation of CNC program files.

Typical activities conducted in the laboratory include computerized geometric modeling, transfer of geometric files and other design data to CNC machines for manufacturing, preparation of machine programs, and tool selection. Students are introduced to the basic concepts of machine assignments for the part processing, display of the operation sequence, and the use of computer-aided design and manufacturing processes.

CNC machines available in the laboratory are small-scale (8x10x12) and full-scale (8x10x12) for the full-service CNC milling machine and additional test, measurement, and recording equipment to interface with the machine tools.

CNC (Computer-Aided Manufacturing) (CAM) Laboratory

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CNC machines available in the laboratory are small-scale (8x10x12) and full-scale (8x10x12) for the full-service CNC milling machine and additional test, measurement, and recording equipment to interface with the machine tools.

Course Specializations

59 000 Cooperative Education/Field Studies

Engineering

The undergraduate engineering program is designed to provide students with a strong foundation in the basic sciences, mathematics, and engineering principles. The program offers a variety of opportunities for students to gain practical experience in the field. Students are encouraged to participate in field studies and to work on projects that relate to their studies. The program offers a variety of opportunities for students to gain practical experience in the field.

59 300 Industrial Design

The undergraduate program in industrial design is designed to provide students with a strong foundation in the basic sciences, mathematics, and engineering principles. The program offers a variety of opportunities for students to gain practical experience in the field. Students are encouraged to participate in field studies and to work on projects that relate to their studies. The program offers a variety of opportunities for students to gain practical experience in the field.
Diss. Prof. Doris Hauptstetter: Christoph Beiermann, Sasja K. Kim, J. Wei, X. Yao. Undergraduate degree offered: B.S., M.S. Ph.D. in Mechanical Engineering.

Mechanical engineering is dedicated to the development and application of techniques and principles of science and mathematics, and the design and fabrication of mechanical systems and devices. It is often classified into two broad areas: mechanical engineering, which deals with the design and analysis of mechanical systems, and materials engineering, which focuses on the properties and behavior of materials.

Undergraduate Program

The objective of the mechanical engineering program is to provide the student with a sound preparation for a career in the field. In addition to the required courses in the mechanics of solid and fluid continua, students should develop a strong understanding of the principles of thermodynamics, fluid mechanics, and heat transfer. Electives offer opportunities for specialization in areas such as heat transfer, fluid mechanics, and thermodynamics.

Curriculum

To earn a Bachelor of Science in mechanical engineering, students must complete a total of 124 semester hours of coursework. The curriculum is designed to provide a broad base of knowledge in mechanical engineering, and to prepare students for careers in industry or further study.

Freshman Year

First Semester
4.12 Principles of Chemistry 1 3 s.h.
10.22 Statics 4 s.h.
225.53 Engineering Calculus 1 4 s.h.
225.51 Engineering I 3 s.h.
Humans or social science elective 3 s.h.
Total 17 s.h.

Second Semester
4.13 Principles of Chemistry Lab 1 2 s.h.
225.56 Engineering Calculus 2 4 s.h.
225.54 Matrices and Algebra for Engineers 1 2 s.h.
227.51 Introduction to Physics I 4 s.h.
57.5 Engineering II 3 s.h.
Total 15 s.h.

Sophomore Year

First Semester
4.16 Principles of Chemistry Lab 1 2 s.h.
225.51 Engineering Calculus 3 4 s.h.
225.55 Vector Calculus for Engineers 5 s.h.
57.51 Statics 2 s.h.
57.51 Thermodynamics I 3 s.h.
57.51 Materials Science 3 s.h.
Total 15 s.h.

Second Semester
225.51 Differential Equations for Engineers 3 s.h.
57.5 Electrical Circuits 3 s.h.
57.51 Mechanics of Deformable Bodies 3 s.h.
Humans or social science elective 3 s.h.
Total 15 s.h.

Junior Year

First Semester
225.59 Probability and Statistics for Engineering and Physical Sciences 3 s.h.
227.51 Linear Systems Analysis 3 s.h.
225.52 Mechanics of Fluids and Transfer Processes 4 s.h.
57.53 Principles of Design I 3 s.h.
57.53 Principles of Design II 3 s.h.
57.51A Principles of Electronic Instrumentation 4 s.h.
57.51 Professional Seminar: Mechanical Engineering 0 s.h.
Total 15 s.h.

Second Semester
225.52 Modern Physics 3 s.h.
57.51 Thermodynamics II 3 s.h.
57.55 Heat Transfer 3 s.h.
57.52 Mechanical Systems 3 s.h.
57.51 Professional Seminar: Mechanical Engineering 3 s.h.
Humans or social science elective 3 s.h.
Total 15 s.h.

Senior Year

First Semester
57.51 Thermodynamics System Design 4 s.h.
57.51 Professional Seminar: Mechanical Engineering 3 s.h.
57.51 Professional Seminar: Mechanical Engineering 3 s.h.
Humans or social science elective 3 s.h.
Total 15 s.h.

Second Semester
57.5180 Experimental Engineering 4 s.h.
57.51 Mechanical Engineering Project 3 s.h.
Technical electives 3 s.h.
Humans or social science elective 3 s.h.
Total 15 s.h.

Technical Electives

These permit students to develop a broader background and a deeper understanding in selected fields of mechanical engineering. Because most of these courses build on earlier courses in the curriculum, students should consult with an advisor about the availability of courses in their area of interest. Students are encouraged to consult with their academic advisor before selecting technical electives. Guidelines for selecting technical electives are as follows.
A minimum of two electives from mechanical engineering courses must be taken. Engineering courses at the 100-level, as well as mathematics, physics, or chemistry courses at a more advanced level than those required in the curriculum, may be taken as technical electives.

One elective course may be chosen from engineering courses that are required in another engineering curriculum.

One course from the College of Business Administration may be elected, with the permission of an advisor, who must review the course before it is taken as a general elective.

A maximum of 9 semester hours of individual investigation may be used as technical electives. Individual investigations are not routinely classified, but may be included in special situations.

Students are encouraged to take courses in several areas to gain a broad background in mechanical engineering. Some technical elective courses are:

Control Systems Engineering
58.131 Feedback Control Systems 3 s.h.
58.132 Control System Design 3 s.h.
58.133 Control Theory 3 s.h.
58.135 Computer-Based Control Systems 3 s.h.

Mechanical Systems Engineering
58.110 Computer-Aided Engineering 3 s.h.
58.111 Mechanical Engineering 3 s.h.
58.115 Fundamentals of Dynamics 3 s.h.
58.116 Intermediate Dynamics 3 s.h.
58.120 Theories of Failure in Design 3 s.h.
58.130 Composite Materials 3 s.h.

Thermal Systems Engineering
58.140 Thermodynamics 3 s.h.
58.145 Intermediate Heat Transfer 3 s.h.
58.147 Combustion and Propulsion Engineering 3 s.h.

Thermal-Fluid Engineering
58.150 Intermediate Mechanics of Fluids 3 s.h.
58.162 Experimental Methods in Fluid Mechanics and Heat Transfer 3 s.h.
58.163 Elements of Gas Flow 3 s.h.
58.167 Aerodynamics 3 s.h.

General
58.506 Individual Investigation 3 s.h.
58.511 Mathematical Techniques in Engineering 3 s.h.
58.516 Finite Element Techniques in Engineering 3 s.h.

Other Contemporary Topics in Mechanical Engineering 3 s.h.

For more information on the undergraduate program in mechanical engineering, see the Undergraduate Handbook, available in the department office, 2802 Engineering Building.

Graduate Programs

The goal of the graduate programs in the Department of Mechanical Engineering is to build the M.S. and Ph.D. levels to educate students in the disciplines of mechanical engineering in more depth and breadth than is possible at the B.S. level. The program prepares the student to use contemporary methods at advanced levels in professional careers in engineering design, research, troubleshooting, and teaching.

Each student's plan of study is based on his or her background and career objectives as well as on academic standards. Departmental faculty members have teaching and research expertise in energy conversion, fluid and thermal sciences, solid mechanics, mechatronic systems, and related areas.

Students may develop programs emphasizing fluid mechanics, thermodynamics, heat transfer, fatigue and fracture mechanics, and machine design. M.S. students choosing a more general graduate program may combine courses, while those wishing a degree of specialization in energy conversion, materials engineering, automotive control, or chemical processes may combine departmental courses and appropriate electives from other departments of the College of Engineering and the College of Engineering and the College of Engineering and the College of Engineering and the College of Engineering and the College of Engineering, or from other departments of the College of Engineering and the College of Engineering.

Research

Fluid Mechanics

The graduate program in fluid mechanics is intended to provide graduate students with a broad background in fluid mechanics, including both theoretical and experimental aspects of the subject. It is expected to be suitable for those seeking careers in research and development, and for those with an interest in the area of fluid mechanics.

Current research projects include computational modeling of viscous and turbulent flows, vortex dynamics, stratified flows, free-surface flows, and control, including; biofluid dynamics, ship hydrodynamics; viscous flow around ships; propulsion problems; and the effects of fluid mechanics in the aerospace industry.

Thermal Sciences

The graduate program in thermal sciences and systems provides students with a broad background in fluid mechanics, heat transfer, and related aspects of the subject. The student is encouraged to develop programs in these areas.

M.S. students may develop programs emphasizing fluid mechanics, thermodynamics, heat transfer, and related areas. Students may also develop programs in chemical engineering, materials engineering, and mechanical engineering. M.S. students choosing a more general graduate program may combine courses, while those wishing a degree of specialization in energy conversion, materials engineering, automotive control, or chemical processes may combine departmental courses and appropriate electives from other departments of the College of Engineering and the College of Engineering.

The College of Engineering and the College of Engineering and the College of Engineering and the College of Engineering, or from other departments of the College of Engineering and the College of Engineering.

Thermal Fluid Engineering

The thermal fluid engineering program in the Department of Mechanical Engineering is designed to provide graduate students with a broad background in fluid mechanics, including both theoretical and experimental aspects of the subject. It is expected to be suitable for those seeking careers in research and development, and for those with an interest in the area of fluid mechanics.

Current research projects include computational modeling of viscous and turbulent flows, vortex dynamics, stratified flows, free-surface flows, and control, including; biofluid dynamics, ship hydrodynamics; viscous flow around ships; propulsion problems; and the effects of fluid mechanics in the aerospace industry.

Thermal Sciences

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Current research projects include computational modeling of viscous and turbulent flows, vortex dynamics, stratified flows, free-surface flows, and control, including; biofluid dynamics, ship hydrodynamics; viscous flow around ships; propulsion problems; and the effects of fluid mechanics in the aerospace industry.

Mechanical Systems

The graduate program in mechanical systems engineering provides students with a strong background in theoretical, computational, experimental, and applied aspects of the subject. The student is encouraged to develop programs in these areas.

M.S. students may develop programs emphasizing fluid mechanics, thermodynamics, heat transfer, fatigue and fracture mechanics, and machine design. M.S. students choosing a more general graduate program may combine courses, while those wishing a degree of specialization in energy conversion, materials engineering, automotive control, or chemical processes may combine departmental courses and appropriate electives from other departments of the College of Engineering and the College of Engineering.

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Current research projects include computational modeling of viscous and turbulent flows, vortex dynamics, stratified flows, free-surface flows, and control, including; biofluid dynamics, ship hydrodynamics; viscous flow around ships; propulsion problems; and the effects of fluid mechanics in the aerospace industry.

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The College of Engineering and the College of Engineering and the College of Engineering, or from other departments of the College of Engineering and the College of Engineering.
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 comprehensive examination option and no more than 9 semester hours of course work in research and writing may be counted toward 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 fulfill the 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 of 500 verbal and 700 quantitative. A minimum score of 550 on the Test of English as a Foreign Language (TOEFL) is required for students whose native language is not English. Students may, under exceptional circumstances, be admitted without a GRE or TOEFL score. Admission to the graduate program is granted by the Graduate Committee, which consists of at least three faculty members, including at least one with primary appointment in the Department of Mechanical Engineering.

The requirements for the M.S. degree must be completed within a calendar year. However, with the approval of the student's advisor, other or equivalent courses may be taken up to two calendar years to complete the degree.

Doctor of Philosophy

Typically, Ph.D. programs in mechanical engineering require approximately 90 semester hours of course work. The student must pass the comprehensive examination at the beginning of the first semester. The comprehensive examination is administered by the department and is generally formalized at the beginning of the second semester. The student takes the comprehensive examination after passing the qualifying examination and when the course work specified in the plan of study is completed, in any case, the examination may be taken no later than the fall semester of the first registration in the Ph.D. program. To be admitted to the comprehensive examination, the student must be in good academic standing and must be recommended by his or her advisor. The examination is administered by the student's committee. To be completed, the Ph.D. degree candidacy is recognized upon successful completion of the comprehensive examination.

Having satisfactorily completed the exams, the student normally has only to complete and retire the dissertation at the final examination.

Requirements for the Ph.D. degree can be completed in three to four years beyond the M.S. degree.

Admission

Students who have earned a bachelor's or master's degree in an engineering curriculum or in a curriculum in the mathematical or physical sciences are eligible to be considered for admission in the graduate program in mechanical engineering. In order to be considered for 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 a minimum Graduate Record Examination (GRE) score of 500 verbal and 700 quantitative. In this program, the minimum score of 550 on the Test of English as a Foreign Language (TOEFL) is required for students whose native language is not English. Students may, under exceptional circumstances, be admitted to the graduate program without a GRE or TOEFL score. Admission to the graduate program is granted by the Graduate Committee, which consists of at least three faculty members, including at least one with primary appointment in the Department of Mechanical Engineering.

The requirements for the M.S. degree must be completed within a calendar year. However, with the approval of the student's advisor, other or equivalent courses may be taken up to two calendar years to complete the degree.

Financial Aid

Financial support is available to M.S. and Ph.D. students, primarily through teaching and research assistantships from the Department of Mechanical Engineering, the Center for Computer-Aided Design, and the Iowa Institute of Hydraulic Research. These assistantships are available in a semester, academic, or fiscal year. In either case, the student must maintain satisfactory academic progress and must agree to perform the research, teaching, or research and teaching assistantship services as assigned by the department. M.S. students who have completed 30 semester hours of course work and research work beyond the bachelor's degree and have completed the M.S. degree requirements but have not yet received their degrees. Special Facilities and Laboratories

Undergraduate Instruction

Engineering Core

The laboratories for fluid flows and transport processes contain a wind tunnel, a water flume, four water channels, a high-speed wind tunnel, a 4.5 m x 4.5 m x 2.4 m jet tunnel, a 7.2 m x 7.2 m x 2.4 m jet tunnel, a 4.5 m x 4.5 m x 2.4 m jet tunnel, and a 7.2 m x 7.2 m x 2.4 m jet tunnel. The laboratories are located on the north side of the Engineering Building.

Financial Aid

The mechanical engineering board grants undergraduate scholarships to undergraduate students who have demonstrated excellence in mechanical engineering. These scholarships are awarded on the basis of academic achievement and are renewable. Applications are accepted on a competitive basis and are reviewed by the department. The deadline for applications is the last day of the fall semester.
Mechanical Systems

Simulationanjay in the mechanical systems and low-frequency analysis in the Center for Computer-Aided Design and High-Speed Computing Facility of the Laboratory. This combined laboratory is an outstanding computer facility consisting of an IBM 370/168 computer, Enfoc multimass Multivac XAV-1178, a cluster of 14 Apollo work stations, a Silicon Graphics super graphics workstation, Alliant VAX graphics workstation, Intergraph work station, and associated hardware devices, as well as an animation video workstation. Capability is added to these facilities for mechanical systems experiments. Facilities include an analog computer, a dynamic analysis computer for robotic control, and a vibration system.

Courses

Special

SRM Cooperative Education Program Assignment: Mechanical Engineering

Mechanical engineering student participating in Cooperative Education Program. In this course students will obtain the necessary knowledge and skills to carry out professional assignments in the industry. Additional to the Cooperative Education Program, the student will be required to maintain a minimum grade point average of 3.0 in four of the required courses.

Mechanical Engineering

The program in fluid mechanics is conducted in close collaboration with the Johns Hopkins Institute of Mechanical Engineering, which houses one of the most modern research facilities in the world. The equipment available to graduate students includes several wind tunnels and hydraulic flumes, an environmental flow facility, a 300-knot towing tank, two low-temperature flow facilities for investigation of incipient, passive, and active flow apparatus, unstable water flow tunnel, fin-and-blade test section, and laser anemometer systems, and computer-based data-acquisition systems.

In the department, the facilities available are low-speed visualization and imaging systems with CCD camera, a low-speed water tunnel, a water table, and a water flume. The facilities and engineering colleges work closely to provide the necessary resources.

Thermal Sciences

Facilities for research are the thermal sciences and systems control of a special laboratory, with an emphasis on property measurements, low-temperature convention studies, and two high-temperature systems. These include high and low-temperature systems for aircraft applications, and high-temperature systems for nuclear applications. These two high-temperature systems are available for transient test, low-temperature, and transition studies. Flow visualization and imaging systems with CCD camera and image processing systems are available for transient flow, heat transfer, and transition studies.

Several laboratories are served by computer-based data-acquisition systems. The building is one of the most modern data-acquisition systems available for data acquisition and analysis.

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Several laboratories are served by computer-based data-acquisition systems. The building is one of the most modern data-acquisition systems available for data acquisition and analysis.
58.101 Graduate Seminar: Mechanical Engineering
Presentation and discussion of recent research and developments in mechanical engineering for degree-credit awarded. Graduate standing required.

58.105 Contemporary Topics in Mechanical Engineering
Recent advances and current issues in mechanical systems and devices. Graduate standing required. Student activity fee required.

58.109 Research: Mechanical Engineering.
Research project concerning a specified area of mechanical engineering. Topic to be approved by the Mechanical Engineering Graduate Committee. Graduate standing required.

58.111 Individual Investigation: Mechanical Engineering.
Individual study of a specified area of mechanical engineering. Note: For advanced study. Bachelor's degree in mechanical engineering is recommended. Graduate standing required.

58.211 Research: Mechanical Engineering.
Research project in specified area of mechanical engineering. Graduate standing required. Consent of advisor required.

58.229 Thesis: Mechanical Engineering.
Thesis research in specified area of mechanical engineering. Thesis research. Graduate standing and consent of advisor required.

58.239 Research: Mechanical Engineering.
Research project in specified area of mechanical engineering. Graduate standing required. Consent of advisor required.

Meeting company representatives during Career Day on campus.
Laser research in the Department of Physics and Astronomy

Acting dean: Lenda Davis
Dean for advanced studies: Rudolph W. Schulz
Associate deans: James P. Michael, Charles H. Moore
Graduate examiner: Carol Ono
The University of Iowa has been a leading center of advanced study for three-quarters of a century. Presently, more than one-fifth of its enrollment is in the Graduate College. This unusually high ratio reflects the breadth of the University's graduate programs and encourages the strength of a graduate faculty with a long tradition of research into areas of national and international students, and the opportunities afforded graduate students for involvement, recognition, and support.

The Graduate College is responsible for the review and approval of proposals for new graduate programs and for the periodic survey of the status of existing programs. Through its administration of scholarship, fellowship, and research assistantship funds, the college encourages research and strengthening of departments. In cooperation with the Office of the Vice President for Research, it offers assistance to individual faculty members in finding the resources necessary for research projects, and it cooperates with the other colleges and departments of the University to formulate policies concerning selection, supervision, and support of graduate students.

The faculty of the Graduate College is made up of all University faculty members as the staff of assistant professor, associate professor, and professor. A 12-member Graduate Council, elected from and by the graduate faculty and the Graduate Student Senate, is the executive committee of the graduate faculty and is advisory to the dean of the Graduate College.

Degree Programs


Ad Hoc Interdisciplinary Ph.D. Programs

In addition to the degree programs listed above, the graduate faculty has authorized the awarding of ad hoc interdisciplinary Ph.D. degrees. There are no provisions for ad hoc interdisciplinary programs at the master's level. Students seeking approval for ad hoc interdisciplinary Ph.D. programs must first be enrolled in a departmental program in the Graduate College. For details, see section X.2E, "In Rules and Regulations of the Graduate College." in this section of the Catalog.

Aging Studies Program

The program is designed to complement graduate degree programs for students with academic, professional, research, or service career interests in aging. An entry to make one’s transcript certifying completion of an approved curriculum in aging studies. For further information, see "Aging Studies Program" in the College of Liberal Arts section of the Catalog.

Applied Mathematical Sciences

The program in Applied Mathematical Sciences is a broad-based interdisciplinary program leading to the Ph.D. degree. Students combine study of theoretical and applied aspects of a mathematical science (mathematics, statistics, or computer science) with study in another field (behavioral, biological, engineering, medical, physical, or social). See "Applied Mathematical Sciences" under "Division of Mathematical Sciences" in the College of Liberal Arts section of the Catalog for a list of faculty and a further description of the program.

Center for International and Comparative Studies

The Center for International and Comparative Studies (CIS) coordinates and supports interdisciplinary studies at the University of Iowa. Founded as a university committee in 1981, CIS was recognized as an academic center by Iowa's State Board of Regents in April 1984. In 1985 and again in 1988, CIS was awarded grants from the U.S. Department of Education to establish a Title VI National Resource Center on International Studies, one of only nine such centers in the United States.
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, OCS 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 instructional support to existing international programs while encouraging new research and new teaching activities. It emphasizes international studies in three 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 chair of the nine OCS constituent programs (see "Interdisciplinary Programs," below). OCS offices and classrooms are located in the International Center. The center is led administratively to the Office of the Vice President for Academic Affairs.

Interdisciplinary Programs

Nine interdisciplinary programs are represented in OCS. Five promote instruction and research with a program in Peace and Conflict Studies Program (ASC), the Program in Asian Civilizations (PAC), the Global Studies Program (GSP), the Latin American Studies Program (LASP), and the Soviet and East European Studies Program (SEES). These five are also involved with graduate and undergraduate instruction in the College of Liberal Arts (for further details about these programs see the College of Liberal Arts section of the Catalog).

The remaining four programs pursue instructional and research activities along two themes: the Health and Development in Agrarian Societies Program (HADAS), the Project for International Communication Studies (PICS), the Program for International Development (PID), and Women in International Development (WID).

The center also houses or works closely with four affiliated programs: the Arts, Artisans, and Traditional Technologies in Development Project, the Development Support Communications Program, the Committee on Sociocriticism and Justice and 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 facility and staff. Language and Area Studies Fellowships to graduate students, and Research and International Studies Scholarships to undergraduate students. The center supports research projects in Africa, Asia, Latin America, and the United States that involve facility and staff exchanges, technical assistance, development consultancies, and internships. In conjunction with University Libraries, the center also supports the Electronic Information Access Center.

Public Programs and Outreach

More than 100 public lectures, seminars, films, and concerts are sponsored by the center and its constituent programs each year. In the past, the center has sponsored the City College Foreign Relations Council as well as other similar organizations in providing speakers, training workshops, and other outreach resources. The center also publishes a newsletter four times a year.

Genetics

The Ph.D. program in genetics is an interdisciplinary 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 nutritional 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. Dorothy Andrew

The University of Iowa is one of a consortium of 21 colleges and universities associated with the Council on International Educational Exchange (CIEE), that sponsors a Film Studies Program and a Contemporary Criticism and Culture Program. These two unique academic opportunities offered at the Centre Universitaire Americain du Cinéma et de la Culture, Paris.

The Film Studies Program is designed to explore film theory and analysis—not to train filmmakers or technicians. The curriculum provides courses in film theory, formal structures, history, and ideology. Participants study the relationship between film and other art forms, film culture, film and language, and film and psychology. Students discuss themes such as the evolution of the early cinema, the silent films of Griffith, Lang, Eisenstein, Kurosawa, the classic Hollywood film, French cinema during and after the occupation, and European and American avant-garde cinema.

The Contemporary Criticism and Culture Program focuses on recent developments in French political thought and social institutions, linguistics, social sciences, and literary theory. It traces recent theoretical concepts in the fields of cultural sociology, anthropology, history, and philosophy to analyze verbal and visual representations. Participants study literature, painting, photography, film, and television. The interdisciplinarity of this program makes it relevant not only to French majors, but also to students of other disciplines concerned with the problem of criticism and culture. It is of particular value to those who want to explore the applicability of modernist French theory to a variety of disciplines.

A recent addition to the program is a specialization in history characterized by the application of historical research to sites of current relevance, such as literature, culture, geography, anthropology, sociology, and economics. Particularly distinctive is the French historical approach to a concern with the long-term evolution of populations and the social, economic,
and cultural development of groups of ordinary people, seen in their urban or regional contexts.

Students may concentrate in one of those programs entirely or develop an individual program emphasizing elements from both study center components.

Participating students are registered in the University of Paris III—Cassard and are eligible to take selected courses within the University of Paris as well as those directly sponsored 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 the Catalog for further information. Established joint programs include: Business Administration/Information Science, Economics/Urban and Regional Planning; Hospital and Health Administration/Urban and Regional Planning; Social Work/Urban and Regional Planning; Public Health; Preventive 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 Scientist Training Program" in the College of Medicine section of the Catalog.

Molecular Biology

The Ph.D. program in molecular biology is interdisciplinary in nature, involving members of the Departments of Biophysics, 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 structure, function, and development 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 interdepartmental 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 programs 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, multidisciplinary program that integrates planning and environmental engineering, geography, and economics with public policy and regional planning. When the graduate degree is awarded, a thesis is written on the student's thesis satisfying the requirements of the Program in Transportation Studies. For further details, see "Transportation Studies" in the College of Liberal Arts section of the Catalog.

Urban and Regional Planning

The graduate program in urban and regional planning is a professional master's program that prepares students for widely varied positions in government and the private sector. The program has a strong policy orientation that enables its graduates to understand and participate in the development of particular urban or regional problems and to develop innovative solutions. Students may choose to specialize in transportation, environmental quality, land use, housing, and several other areas. A number of joint programs with other graduate programs are also offered, see "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. This organization, in cooperation with the Graduate College, for further information, see "Research Activities" in the Special Resources at Iowa section of the Catalog.

Financial Assistance

Approximately half of the University's graduate students receive some form of University-administered financial assistance. Eligibility requirements and application procedures are set forth in "Section VII, Graduate Appointments" in Rules and Regulations of the Graduate College." The following are the primary sources of assistance.

Teaching and Research Assistantships

Available in most departments; stipends range normally between $8,000 and $10,500 for two-term assistantships; assistants also have eligibility for tuition scholarships. Assistantships typically involve not more than 10 hours of instruction and research.

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 full tuition paid, for as many as two years (the second year being contingent on demonstration or completion of the M.F.A. degree; no tuition paid to first-year students.

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 full tuition paid; no departmental service obligations.

The University of Iowa Fellowship Program

For first-year graduate students entering doctoral programs; typical stipends are $14,500 per year for a two-year period, with full 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 study, research, or writing full time.

Scholarships

Scholarships provide partial 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, 52242.

In addition to these forms, official transcripts from any secondary and/or 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 deadline dates will be established by the dean in 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 (APRIL) Test of the Graduate Record Examination (GRE) or, for applicants to graduate programs in business administration, the Graduate Management Admission Test (GMAT). Applicants for whom admission data are complete, with the exception of scores on the GRE or the GMAT, may, depending on departmental policy, be admitted if they meet all other requirements.

The GRE or the GMAT must be taken before the end of the student's first session of enrollment. The test is given several times each year at test centers established under the direction of Educational Testing Service, Princeton, New Jersey. The judgment of acceptable levels of performance on this test is left to the discretion of admission in each department to which a student is limited to the department.

Departments in fields where GRE Subject (Advanced) Tests are available require these in addition to the General (APRIL) Test. Requests about the General (APRIL) Test may be directed to University Evaluation and Examination Services, 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 Test of English as a Foreign Language (TOEFL), unless they have received a degree from an accredited college or university in the United States, the United Kingdom, Canada (except Quebec), Australia, or New Zealand.

The examination is given at various times of the year and in many centers throughout the world. Inquiries should be addressed to the director, TOEFL, Educational Testing Service, Princeton, New Jersey (854).

Foreign students transferring from unfinished degree program of other universities in the United States who have not taken this examination, or who have received a grade lower than the minimum established by the Graduate College dean, must take the TOEFL examination and receive a passing grade prior to considering admission.

The Graduate College will advise the departments of those students barely passing the TOEFL that 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. Entry Admission
A student who is within six semester hours of having satisfied all the requirements for the bachelor's degree at The University of Iowa or any other accredited college may be given provisional admission.

E. Candidacy
Admission to the Graduate College is not the equivalent of acceptance as a candidate for an advanced degree, which must be earned through work successfully completed at The University of Iowa. (See "Section X. Master's Degrees." "Section XI. Two-Year Degrees" and "Section XII. Doctor's Degrees").

F. Declaration of Major and Degree
Every applicant for admission must indicate on the application form the department or program of major interest and the degree certificate or professional objective for which she intends 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 transcripts are sent.

G. Status upon Admission
All students upon admission fall into one of the following categories:

1. Baccalaureate—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 premedical) preparation.

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 reassure responsibility for advising them.

3. Special—Students with a valid bachelor's degree and at least a 3.0 grade-point average who are not planning to become candidates for a graduate degree.

Certificate. Registration as a special student is allowed for only one semester or summer session. Before registration for any subsequent session, including a special summer session, a special student must file an application and be admitted by a department or program to regular or conditional status. A student registering as a special student can take not 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 nondoctral students, a minimum grade-point average of 2.50 is required for admission to regular status. A minimum of 2.00 is required for admission to conditional status.

The grade-point average is
computed only on graduate work if the student has completed at least 12 graduate hours. If the student has 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 above a point to be designated by 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 2.50 is required on the entire record of collegiate work.

Departments, or committees in charge of interdisciplinary degree programs, may, and often do, set independent admission requirements that are set forth above for the Graduate College as a whole. Information concerning departmental or program requirements may be obtained directly from the executive of the department concerned.

For State Board of Regents format 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 professor, or above) at The University of Iowa may be admitted as special students. (See Section G-2.) Above a person holding faculty rank as specified above may petition the Graduate College for permission to enter a departmental program for work leading to a master's degree, certificate, or professional improvement except in the department of the hire or her appointment or a closely related department. Such petitions must be approved by the departmental dean of the college of the department in which such work is to be pursued, and the Graduate College.

J. Readmission

Students who are admitted to and enroll in the Graduate College, but fail to register for a period of 30 calendar days or more, must 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 reapplication.

Section II. Registration

A. Standard Schedule

Students registered in the Graduate College may register for no more than 16 semester hours of credit in graduate courses. In a schedule of more than regular undergraduate courses, two hours of undergraduate credit may be substituted for one semester hour of graduate credit with registration limited to a total of 16 semester hours. This equivalency applies to the credit hour of academic load only. Graduate credit is not given for courses numbered under 100. The maximum for the eight-week summer session is nine 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. (Fellows are required to carry at least nine semester hours during a semester as a condition of their appointments.) One-quarter-time and one-third-time appointments 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 6th 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 projects, theses, and dissertations are for credit in 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 register for limited or no credit is subject to the consent of the advisor 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 no more than 12 semester hours during a semester or 16 semester hours during the eight-week summer session.

2. Five-eighths-time appointees may register for not more than 16 semester hours during a semester or five semester hours during the eight-week summer session.

3. Two-thirds and three-quarter-time appointees may register for not more than nine semester hours during a semester or five semester hours during the eight-week summer session.

4. Four-fifths-time appointees may register for not more than seven semester hours during a semester or four semester hours during the eight-week summer session.

5. Full-time appointees, including full-time instruction, may register for not more than six semester hours during a semester or five semester hours during the eight-week summer session.

E. Retroactive Registration

No form of retroactive registration is permitted.

F. Registration for Part of a Session

A graduate student may register at any time during the semester or the eight-week summer session for not more than one semester hour of credit for each of the remaining weeks of classes (not including the examination period) in the term. The total registration may not exceed the 15 semester hours permitted for a semester and the eight semester hours permitted for the eight-week summer session. Registration after the last day of the third week of a semester or the third day of the second week of a summer session is permitted only in courses involving special (pros) readings, individual study, thesis, or research, with the signs of approval of the instructor concerned and the Graduate College dean.

G. Extramural Registration

After admission to a departmental program in the Graduate College, registrants for work done off campus may be accepted for residence credit under the following circumstances:

1. Transferring Scholar Program of the Council on Institutional Cooperation (see "Section III.")

2. Research at approved locations under the direction of members of the graduate faculty of The University of Iowa.

3. Field work as part of a regularly scheduled course or research program.

4. Courses taught off campus by members of the graduate faculty (see "Section X.D." no credit is required on campus for the master's or graduate degree).

5. Residence graduate credit from another Iowa Regents university (see "Section X.C.")

6. As many as nine semester hours of graduate credit in the Quad Cities Graduate Center from faculty other than faculty of the Iowa Regents universities, provided they are acceptable to the student's major department for the specified credit 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 work only if the student has been admitted to a departmental program in the Graduate College (see "Section LI") 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 tint must be acceptable for the student's plan of study and must be approved by the student's advisor in the Graduate College. In some instances, graduate correspondence study credit earned prior to a student's matriculation in the Graduate College may be counted toward an advanced degree with approval of the Graduate College dean upon recommendation of the major department.

A graduate student may not enroll for correspondence courses without the approval of the associate 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 those departments in which undergraduate readings, special projects, or independent study have course numbers of 100 or above.

K. Auditing of Courses

Upon the recommendation of the instructor and the consent of the student, the Graduate College may grant permission to graduate students in other departments to audit courses for which they are not eligible. Auditing is permitted only for a student who is making satisfactory progress toward a 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 published by the registrar shall receive a grade of "W" against the entire registration is withdrawn. This registration may be voided by the Graduate College only on the recommendation of the Student Health director or the Student Counseling Service. If a student withdraws registration after the deadline date, the student must obtain permission from the dean of the Graduate College before being permitted to register.

Section III. Traveling Scholar Program

A. Purpose

The program, under the auspices of the Committee on Institutional 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 first must be recommended by his or her own graduate adviser, who will approach an appropriate faculty member at the host institution, graduate dean, or both institutions. The faculty member will forward the application to the dean or the office of graduate studies for the host institution.

2. After examination by the student's adviser and the faculty member at the host institution, graduate dean at both institutions will be fully informed by the adviser and have the power to approve or disapprove.

3. A CIC Traveling Scholar will be registered at the home university, and fees will be collected and kept by that institution.

4. Credit for the work taken will be recorded at the home university.

5. Those desiring additional information should inquire at the office of the Graduate College.

C. Conditions

CIC Traveling Scholars will normally be limited to two semesters or three quarters on another campus. Each university retains its right to refuse or accept any student who wishes to study under his auspices.

Section IV. Academic Standing, Probation, and Dismissal

A. Nondoctoral Students

A student, except one on conditional status, shall be placed on probation if, after completing eight semester hours of graduate work, his or her cumulative grade-point average on an academic work done at The University of Iowa falls below 2.50. If, after completing eight more semester hours of graduate work at this University, his or her grade-point average remains below 2.50, he or she shall be denied permission to register; otherwise, the student shall be returned to good standing.

B. Doctoral Students

A doctoral student on regular status shall be placed on probation if, after completing eight semester hours of graduate work, the student's cumulative grade-point average on graduate work done at The University of Iowa falls below 3.00. If, after completing eight more semester hours of graduate work at this University, the student's cumulative grade-point average remains below the required level, the student shall be dropped from the program and denied permission to register unless he or she applies and is accepted for a nondoctoral degree or certificate program. If after completing the second eight semester hours, the cumulative grade-point average is at least 3.00, the student is returned to good standing.

C. Restriction on Students on Probation

A student on probation shall not be permitted to take comprehensive or final examinations leading to any degree or certificate, nor may the student receive any graduate degree or certificate.

D. Departmental Regulations and Dissemination of Information

In addition to the above University-wide regulations, departments may establish further requirements which them determine the individual student's standing with respect to probation and dismissal. To this end, each individual department or program shall compile a list of all standards and procedures for work in that area. These documents shall be on file in each departmental office and the office of the Graduate College dean. Copies are available for students in the departmental offices, and departments shall make every reasonable effort to inform students. Subsequent changes in standards or procedures shall be communicated by the departmental office and the Graduate College dean. Whenever departmental review standards for a given program, the new regulations will not apply retroactively to the disadvantage of those already in the program. In addition to notifying students that they are subject to the rules of the Graduate College as set forth in the Manual of Rules and Regulations, any standards established by the department shall be stringent than the general graduate college regulation shall be stated. Information shall be provided to students required of courses applicable to the various departmental programs, examinations and other formal evaluations, departmental policies with regard to awarding and renewing assistantships, time limits on programs of study, departmental registration policies, departmental grade-point averages, requirements for changing from one degree program to another in the department—especially from the master's to the Ph.D.—departmental probation and dismissal policies, and any other policies (see "E" following) and other matters as are applicable to the program. The departmental advisory system shall be explained to the incoming students.

E. Academic Progress, Departmental Probation, and Dismissal Procedures

If a student is failing to meet departmental standards, the department shall warn the student of this fact in writing. The department shall inform in writing in the student's absence if the student is failing to meet the standards. The student shall be provided a reasonable amount of time to meet the standards prior to departmental dismissal. Conditions such as conditional admission or probation are imposed. The department shall give at the time of its imposition written explanation of this status and its time limits.
A student who will not be permitted to register for those courses which constitute the required curriculum in the major field of study. The following courses may be required for the completion of the major field of study:

1. English
2. Mathematics
3. Science

Section V. Credits

A. Transfer of Graduate Credit

Credit for work done elsewhere must be approved by the Graduate School before the student is given credit for it. Credit courses will only be recognized at the Graduate level if the student's major and department of study are the same as those of the student's major at the other institution.

B. Residence Transfer Credit

After admission to a departmental program in the Graduate College, credit for graduate courses at institutions other than Iowa Wesleyan University may be counted as residence credit if the course meets the requirements of the degree program at Iowa Wesleyan. Credit courses at other institutions will be evaluated on the basis of the department's determination of the student's major department. The number of semester hours required for any degree at Iowa Wesleyan is based on the number of semester hours required for the degree at the institution where the credit was earned.

C. Redivision in Credit

Credit for courses may not be earned in a course that has already been completed.

D. Graduate Credit for Veterans

Credit may be granted to students pursuing war and military service activities in which the student's major department of study is the same as that of the degree program at Iowa Wesleyan. Credit courses at other institutions will be evaluated on the basis of the department's determination of the student's major department. The number of semester hours required for any degree at Iowa Wesleyan is based on the number of semester hours required for the degree at the institution where the credit was earned.
Council to allow students majoring in one area to register in courses in another area within the same department or program on a satisfactory/unsatisfactory basis. In these instances, satisfactory/unsatisfactory cards will be used as described in the preceding paragraph.

G. Computed Grade-Point Average
This is based only upon graduate work grade A = 3.33, B = 2.00, C = 1.67, D = 1.00, F = 0.00. Although a grade of A+ has a value of 4.00 in computing a student's grade-point average, the cumulative average is truncated as no as not to exceed 4.00.

Section VIII. Graduate Appointments
A. Scholarships
Scholarships are competitive and are awarded on merit.
1. Eligibility for graduate scholarships and fellowships will include: (a) a registration in the Graduate College; (b) cumulative grade-point average of at least 3.00; (c) a GRE score or a CMET score above a point to be designated by the Graduate College dean; and (d) a satisfactory rate of progress in completing the program for the degree. Preference will be given to candidates for the M.S.C. degree.
3. Recommendations for graduate scholarships may be made to the Graduate College by the department executive, director, or dean. A graduate scholarship may be awarded whether or not a student holds an assistantship. The amount of scholarship for the academic year may vary, but no case exceed the comprehensive fee assessed. Scholarships will be credited to the student's University account. Fellowships are awarded by the Graduate College upon recommendation by department students with outstanding academic records. Fellowships may be awarded to 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 as preparation for the graduate research service to professorial members of the academic staff and to provide appropriate 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 III. I.A."). Appointments ordinarily are made for the nine-month academic year, but appointments may be made for other periods of time by special arrangement. Stipends vary with the qualifications of the appointee and the amount of service rendered. Faculty research 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 application 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 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 admission as a graduate student by the Graduate College by the director of admissions.

F. Dismissal of Assistants
A uniform policy defining procedures to be followed in the dismissal of assistants has been approved 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 scholarships, 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 associateships are for independent research. Appointment is made through the Office of the Vice President for Academic Affairs.

Section VIII. Advanced Programs Leading to the Master of Arts Degree in 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 Degree
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 application signed by his or her advisor. 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 paragraphs. Each student must register for the session in which the degree is to be conferred but are away from the University campus during that session may meet the residence requirement by registering for independent study, research, or thesis according to the practice in the various departments. Doctoral candidates who have completed all work except the final examination may register for 00001 Master's Final Registration at a fee equivalent to the postcomprehensive registration if such registration is appropriate. Registration is a correspondence course will not satisfy this requirement.

Students completing all requirements (including the final examination and thesis defense) for a graduate degree who are enrolled in the Independent Study Session may receive their degrees in the following semester without additional registration.

Section X. Master's Degrees
A. Kinds of Degrees
Master's programs requiring a minimum of 30 semester hours 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
master's degrees as approved by the graduate faculty.

B. Plan of Study
The plan of study for a master's degree must include a plan of study approved by the adviser and the Graduate College at the Graduate College within the semester in which the degree is to be granted and by a date to be established by the Graduate College. The plan shall meet the requirements for the degree approved by the graduate faculty. (See also "Section F.D. Graduate Departmental Regulations and Dissemination of Information.")

C. Major and Related Fields
The plan of study should provide for reasonable concentration in the major field of interest and, subject to the approval of the major department, may include related subjects from other departments.

D. Residence Requirement
Of the minimum of 36 semester hours required for the degree, at least 24
semester hours must be completed under the auspices of The University of Iowa, after addition to a departmental program in the Graduate College. Various forms of extramural registration may qualify toward fulfillment of this 24 hour residence requirement (see "Section II.G. Extramural Registration.") In addition to regular on-campus registration, however, at least eight semester hours on campus are required, except for those departmentsal programs wherein the course registration requirements are met.

E. Reduction of Old Credits
Credits for a master's degree dating back more than 10 years or in which the degree is to be conferred are not counted toward the degree requirements. This rule may be waived by the dean in cases affected by military service.

F. Limits on Professional Courses
Work taken by a student in the Colleges of Dentistry, Law, or Medicine cannot be included for a professional degree may be credited to a graduate program leading to a master's degree if it is taken after the student has earned a baccalaureate degree. A student may have completed work equivalent to that required for a baccalaureate degree at The University of Iowa. The work accepted from the professional college must be directly related to the student's major field of study in the Graduate College and be approved as a part of the plan of study by the student's adviser and the major department. Work completed 10 or more years prior to the professional degree in law, medicine, or dentistry will not be counted as part of the residence requirement for non-doctoral degrees in the Graduate College only when the student is registered in an appropriate joint degree program.

G. Two Master's Degrees
The granting by this University of two master's degrees 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
No more than 9 semester hours of credit for thesis research and writing shall be accepted in satisfying the 30 semester-hour minimum requirement. The thesis may be a scholarly study or an artistic presentation.

I. 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 and may or may not be identical to the final examination committee. (See "K. Examination Committee.")

J. 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 comprehensive examination prescribed by a department and approved by the Graduate Council.

K. Final Examination
The requirements for all master's degrees include a final comprehensive examination other than the major, the major department, which 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 final report unsatisfactory. The report of the final examination in law is the Graduate College not later than 48 hours after the examination.

If the department so recommends, a candidate who fails the examination may present himself or herself for reexamination but not sooner than the most regularly scheduled examination period in the following session.

The examination may be repeated only once.

Upon recommendation of a department, the comprehensive examination for a doctoral degree may be substituted for the master's examination.

K. Examining Committee
The examining committee for the master's degree consists of at least three members of the graduate faculty, appointed by the Graduate College. In the case of 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, composition, 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.

This program in the Master of Fine Arts requires at least two years of residence credit as a graduate student. This requires a minimum of 48 semester hours of graduate credit, at least 24 of which must qualify for residence credit at this university. A Master of Arts degree may be earned only if the student is working toward the Master of Fine Arts degree, but the student must receive graduate credit in a satisfactory field, with a minimum combined total of 60 semester hours of graduate credit.

For other requirements see "Section X.B. Plan of Study."" C. Major and Related Fields.
1. "E. Reduction of Old Credits.
3. "G. Two Master's Degrees.
5. "J. Final Examination.

B. Specialist in Education Degree
This degree is granted upon completion of a prescribed two year, post-baccalaureate program of study for students preparing themselves professionally in such fields as teaching, administration and supervision, and special services.

Of the minimum of 40 semester hours required for the degree, at least 24 semester hours must be completed in residence at this University, of which 12 semester hours must be earned while the student is on campus within one 12-month period or during two summer sessions.

Twenty-eight of the 60 semester hours are prescribed in the area of specialization. The others are in cognate fields, supervised.
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 Graduate College by the departmental executive at the time of submission of the plan of study.

Other requirements and regulations applicable to the educational specialist degree are the same as those prescribed for the one-year master’s degree in "Section X.B. Plan of Study," "C. Major and Related Fields; "F. Limit on Professional Course;" "F. Final Examinations;" and "K. Examining Committee."

A master's degree may be earned while in residence for the educational specialist degree provided the student meets all the requirements for the master's degree in 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 competence in 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 or oral, both, covering all work for the degree.

The requirement of 60 semester hours may be interpreted to mean that a student can safely complete the faculty of the school that he or she has accomplished, in the junior or senior undergraduate years, the 140 percent equivalent of part of the graduate curriculum in social work may be permitted, subject to the recommendation 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 sequential, students can 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 the following degrees, the Doctor of Philosophy and the Doctor of Medical Arts. The doctorate is the highest degree awarded by the University. The Doctor of Philosophy degree indicates a significant contribution to 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 prepared for investigation. In the case of deficiency, must require for prerequisite courses.

C. Residence Requirement

The doctorate is granted provisionally on the basis of achievement rather than as the accumulation of semester hours of credit; however, the candidate is expected to have completed at least three years of residence in a graduate college. At least part of this residence must be spent in full-time involvement in one's discipline at this University. Beyond the first 24 semester hours of graduate work, the 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 has attended and at least a one-third-time assistantship certified by the department as commensurate to the student's doctoral program. (For purposes of record and assessment of fees, student registration should reflect accurately the amount and kind of work undertaken in the Graduate College. All doctoral programs, including acceptable transfer credit, will contain a minimum of 72 semester hours of graduate work.)

D. Plan of Study

The program of study at the doctoral level is the responsibility of the student working closely with his or her adviser. A formal plan of study must accompany the departmental report 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 propose a plan 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 may directly concerned, which shall be designated as the sponsoring department. Final approval of such individual program is granted by the Graduate College dean, who may add members to the student’s supervisory committee from other closely related departments. The degree will be awarded in the interdisciplinary field stipulated in the approved program and, parenthetically, the name of the sponsoring department.

F. Reduction of Old Credits

Courses taken ten years or more 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

Courses taken ten years or more 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.

H. Joint Program for Master’s and Doctoral Degrees

Those students who expect to continue their studies toward a doctoral degree may file a joint program for the master’s and doctoral degree. The master’s program may be completed with the comprehensive examination for the doctoral work for the candidates. The examining committee will file separable examinations for the master’s degree and for the comprehensive examination. Upon recommendation of the department and approval by the Graduate College dean, students in the college 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 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 departments' statements of standards and procedures (see "Section X.A."). Departmental executive officers are responsible for reporting completion of
requirements to the registrar for entering on the student's record.

Specimens 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 deferred qualifying examination. It is intended to evaluate the candidate's mastery of the subject at or near the end of his or her formal preparation and prior to the completion of the dissertation. The comprehensive examination and the final examination, which is concerned chiefly with defense of the thesis and related subjects, are the two principal examinations for the doctoral degree.

The comprehensive examination will be evaluated by a convened meeting of the committee and reported as satisfactory, with reservations, unsatisfactory, or unsatisfactory with recommendations. Unsatisfactory with recommendations will make the committee report unsatisfactory.

In the event of a report with two or more votes of "satisfactory with reservations," the candidate's comprehensive examination should be recorded with the report form. The candidate will be allowed to satisfy the stipulations and is to be specifically defined as to the areas in which a further examination in a particular area is required, or in describing any additional courses or other procedures that are favored. The candidate will 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 renewal of "reservations."

In the event of a report of unsatisfactory on a comprehensive examination, the committee may grant the candidate permission to re-examine if it has determined that the student is not so far behind that it is not possible to pass within a reasonable time. 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 Graduate College advisor, the departmental executive, and the Graduate College dean.

All registrations should accurately reflect the amount and type of work undertaken, the use of University facilities, and the amount of consultation with the faculty. The student should register for the courses, research, and thesis necessary to complete the plan of study.

When the registrations required for the plan of study have been completed, the student may receive the continuing registration requirements by registering for 000-000 PD, Postcomprehensive-Reg, 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 advisor determine that the student is neither making significant use of University facilities (except library privileges) nor partaking of consultation with the faculty. It is understood that no registration for a summer session is required when the student makes no use of University resources, unless the student is taking a degree at the end of that session or unless enrollment is required by the department.

L. Dissertation for the Doctoral Degree

One copy of the dissertation, complete and in final form, must be presented at the office of the Graduate College before the final examination, and not later than four weeks before the expiration date of the degree to be conferred.

Two copies of the approved dissertation must be deposited at the Graduate College office within ten days prior to the graduation date. The final copy can be deposited at the end of the semester (summer excluded) following the session in which the final examination is passed; failure to meet this deadline will require resubmission of the dissertation.

Regulations regarding preparation of the dissertation copy shall be promulgated by the dean of the Graduate College. Dissertations will be microfilmed and thus made available on a permanent basis. An abstract of the dissertation, not to exceed 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 Abstract International. One copy of the dissertation is bound and indexed at the University Library.

If the dissertation is in some nonprint form (e.g., painting, statue, performance in music) the librarian will help the student and faculty adviser work out an appropriate method of preparing the work, if such help is needed. Once the accompanying manuscript is accepted, it is treated the same as any other thesis.

Writings dissertations shall be made available to all members of the examining committee not later than two weeks before the date of the examination.

M. Dissertation Fee

A nonrefundable dissertation fee is charged each candidate to cover the cost of processing the dissertation and abstract.

N. Final Examination

The work for the degree culminates in a final oral examination administered on campus. This examination should include a critical inquiry into the purposes, methods, and results of the investigation—not merely 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 may pass the final examination no later than five years after passing the comprehensive examination. Failure to meet this deadline will result in a resubmission 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 doctorate are open to the 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 fail. In case of a report of unsatisfactory in the final examination, the candidate must present himself or herself for resubmission until the next session. The examination may be repeated only once, at the option of the major department.

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 College dean upon recommendation of the major department, except that departments may request the dean's permission to appoint one of the five members of the graduate faculty to accept a qualified student for academic supervision. Members of the graduate faculty or other academic department is required in those cases where a need exists.
included in the comprehensive examination.
For the final examination one member of
the committee must be a member of the
graduate faculty from outside the major
department.
Upon recommendation of the major
department, the Graduate College dean may
appoint additional qualified persons (not
necessarily members of the graduate
faculty) to serve as voting members of the
examining committee. A voting member
may be added at the discretion of the
Graduate College dean.

Section XIII. Exceptions

Petitions to waive these regulations may be
made for appropriate and justifiable
reasons on behalf of any graduate student
through the departmental executive to the
dean and the Graduate Council.

Courses

90500 Ph.D. Comprehensive
Registration 0 a.b.
90501 Master's Final Registration 0 a.b.

903252 Journalism in London at City
University 0 a.
Full load of courses, none off ered in cooperation with the
City University of London. Linkages may be arranged
with the London news media. Open to advanced
undergraduate and M.A. professional students. Offered
spring semesters.

905120 IC Scholar 0 a.

905126 Irish Liverpool Exchange Program 0 a.

905118 Summer Program at Ireland 0 a.
Lectures and field work on geological phenomena
characteristic of Ireland (e.g., plate tectonics, rift and ridge
type volcanoes, volcanics on the shetland, physical, and
human geography of Ireland. Offered summer semesters.

905122 CEQ Parks Program 0 a.

Exhibit preparation at the Museum of Natural History
Program Objectives

The objective of formal legal education is to establish a solid 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 method of legal institutions in an impressive component. The University of Iowa (among others) places equal emphasis on developing fundamental lawyer's skills and an appreciation of the roles of law and lawyers in society. These objectives can be achieved best by an educational program that cultivates 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. Fall gathering, interviewing, counseling, writing, transaction planning, negotiation, and litigation are among the skills emphasized in the second and third years. Iowa students are committed to the development of professional skills with full-time faculty in a small group, individualized instruction (form or small group), mandatory summer sessions, and student participation in the writing and research of legal journals.

Program of Study

Full-Time Policy

The faculty believes these students receive a better legal education when they devote full time to study. Of their time to educational pursuits. For this reason, they are expected to pursue their law studies on a full-time basis. This policy is consistent with the accreditation standards of the American Bar Association and the Association of American Law Schools.

In extraordinary circumstances, it may be possible for students to enroll for fewer than 10 semester hours per semester. Students who believe they may be unable to attend full-time should contact the dean's office before registering for classes.

Options for Full-Time Study

The college offers two starting dates for entering students: May (at the beginning of the summer session) or 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. Students who 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 are enrolled. Students in the summer entering class complete nearly a full semester of work in the first year of the 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.

Students who begin their studies in the accelerated program, however, are not required to enroll in an accelerated track, but may switch to the regular three-year sequence of study.

Both the accelerated and regular programs consist of 90 semester hours of required and elective courses. All entering students are expected to take in each of the first-year courses.

Summer Session

The summer session consists of two periods of five and three weeks during which students are expected to take courses designated as first-year courses.

Summer school is designed to allow students to complete all required courses, achieve a cumulative average of 3.0, and satisfy the college's sees-to-research and writing requirements.

First-Year Small-Section Program

One of the distinctive benefits of legal education at The University of Iowa is the first-year small section system, which provides an integrated training in legal, law student skills into substantive courses through regular, full-time faculty. The program's purposes include giving greater attention to the development of each student's skills in legal analysis, argumentation, research, and writing.

In the fall semester (or summer session for accelerated students), the entering class is divided into sections of approximately 30 students. In the spring (or fall for accelerated students), each section contains approximately 30 students. The overall size of the small-section courses varies from year to year but has included various enrollments in the first-year curriculum.

In the small-sect group, courses are given a number of challenging assignments, each with a different educational objective. Faculty members private exercises

Critiques of student performance and feedbacks are given both in class and in individual conferences. First-year students receive one additional credit hour for participation in small section and two additional credit hours for their second semester small section. A mandatory course is required to the grade distribution in all first-year courses.

Upperclass Programs

In the second and third years, students have the opportunity to gain exposure to a broad array of specialty areas of the law, to concentrate course work in 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 91:337 Appellate Advocacy.

Legal Clinic

Students who have completed one-half of the law toward their J.D. degrees are eligible to participate in the College of Law Legal Clinic. The clinic provides opportunities for students to apply their theoretical knowledge to real cases under the supervision of faculty members and other attorneys. Clinic students participate fully in interviewing, fact investigation, pretrial discovery, negotiations, and courtroom advocacy.

Clinical The program requires interested persons to take courses in areas of specific interest in areas of specific interest, including, but not limited to, business, employment, consumer, and landlord-tenant law. The program provides opportunities for students to apply their theoretical knowledge to real cases under the supervision of faculty members and other attorneys. Clinic students participate fully in interviewing, fact investigation, pretrial discovery, negotiations, and courtroom advocacy.

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Legal Clinic

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Students may earn up to a total of 15 semester hours toward a law degree program, although students taking courses in other schools or colleges of the University may receive no more than 20 semester hours of credit for such courses plan prior.

In addition to those programs carrying academic credit, the College of Law offers a summer session for students who wish to attend classes over summer.
Town's continuing commitment to legal education and the legal profession. The large, circular space reflects the character of the college to operate in a physical environment in which an impressive amount of space is designed to promote the college's academic and professional programs.

Classrooms in the new building provide as much space as possible to accommodate the college's growth. They are air-conditioned, carpeted, and have auxiliary space for student groups and faculty members.

Library

The cornerstone of the building is the Law Library, which houses the collection currently housed in an old building. The library is now open to the public on four floors and is one of the largest legal repositories in the United States.

The collection exceeds 20,000 volumes and covers a full range of Anglo-American, foreign, international, and comparative law. The library is also a member of the Network of International Libraries (NINIL) and the Legal Research Information System (LRIS), which are available in the library for accessing the Interlaken's Legal Research Information System (LRIS) and the Legal Research Information System (LRIS).

Financial Aid

A comprehensive financial aid program at the Iowa School of Law is designed to meet the needs of students who need funds to continue their studies. This program includes a wide variety of options, such as scholarships, grants, loans, and work-study programs. The Office of Financial Aid provides information about eligibility and application procedures for each of these programs.

Admission

Applicants for admission must have earned a baccalaureate degree from an approved college or university prior to commencing work at the Iowa Law School. The school requires that all applicants provide a complete application to the Admissions Office at the College of Law. The application process is available online, and applicants are encouraged to apply early to ensure timely consideration of their application.

The University of Iowa cannot process an application without a Law School Application Matching Form. Therefore, applicants should attach their forms with their application.迟延处理的申请将不予考虑。
register that attention with the court no more than 60 days after beginning law school. Details are available from the dean's office in the College of Law to students who register in the college, or from the clerk of the Iowa Supreme Court.

Courses

First Year

01.010 Introduction to Legal Reasoning 1.0 x 0.0
01.011 Legal Writing and Analysis 2.0 x 0.0
01.012 Civil Procedure 2.5 x 0.5
Substantive procedural questions may be presented to the courts with respect to the determination of personal rights, property, contracts, legal relationships between individuals, and the process itself. At times, problems arise that are of interest to the lawyer, and the lawyer must be familiar with the law relating to the profession and the process.

01.013 Constitutional Law and Public Policy 3.0 x 0.0
Constitutional law: the supreme court and the constitution, with emphasis on appeals of national and state governments, and emphasis on federal law and national and state governments.

01.014 Contracts and Sales Transactions 2.0 x 0.0
Problems, angst, and development of procedures associated with contractual agreements: newly developed stamp dating, banking transactions, performances, and interpretation of contracts; examination for knock on effect.

01.015 Contracts and Sales Transactions 2.0 x 0.0
Continuation of 01.014.

01.016 Criminal Law 4.0 x 0.0
General principles of criminal law and criminal justice: principles of crime, identification, elements, preponderance of evidence, private property, criminal responsibility, and criminal defenses, including self-defense and insanity.

01.017 Property I 3.0 x 0.0
Property I: the law of property and the law of contracts. The law of property and the law of contracts. The law of contracts, with an emphasis on the determination of personal rights, property, and contracts.

01.018 Property II 3.0 x 0.0
Continuation of 01.017. Systematic and analytical treatment of the law of personal property, including sales, leases, and conveyances. Examination of legal principles underlying the determination of personal rights, property, and contracts.

01.019 Property III 3.0 x 0.0
Continuation of 01.018. Examination of the law of real property, including easements, covenants, and other interests in land.

01.020 Property IV 3.0 x 0.0
Continuation of 01.019. Examination of the law of personal property, including sales, leases, and conveyances. Examination of legal principles underlying the determination of personal rights, property, and contracts.

01.021 Property V 3.0 x 0.0
Continuation of 01.020. Examination of the law of real property, including easements, covenants, and other interests in land.

01.022 Property VI 3.0 x 0.0
Continuation of 01.021. Examination of the law of personal property, including sales, leases, and conveyances. Examination of legal principles underlying the determination of personal rights, property, and contracts.

01.023 Property VII 3.0 x 0.0
Continuation of 01.022. Examination of the law of real property, including easements, covenants, and other interests in land.

01.024 Property VIII 3.0 x 0.0
Continuation of 01.023. Examination of the law of personal property, including sales, leases, and conveyances. Examination of legal principles underlying the determination of personal rights, property, and contracts.

01.025 Property IX 3.0 x 0.0
Continuation of 01.024. Examination of the law of real property, including easements, covenants, and other interests in land.

01.026 Property X 3.0 x 0.0
Continuation of 01.025. Examination of the law of personal property, including sales, leases, and conveyances. Examination of legal principles underlying the determination of personal rights, property, and contracts.

01.027 Property XI 3.0 x 0.0
Continuation of 01.026. Examination of the law of real property, including easements, covenants, and other interests in land.

01.028 Property XII 3.0 x 0.0
Continuation of 01.027. Examination of the law of personal property, including sales, leases, and conveyances. Examination of legal principles underlying the determination of personal rights, property, and contracts.

01.029 Property XIII 3.0 x 0.0
Continuation of 01.028. Examination of the law of real property, including easements, covenants, and other interests in land.

01.030 Property XIV 3.0 x 0.0
Continuation of 01.029. Examination of the law of personal property, including sales, leases, and conveyances. Examination of legal principles underlying the determination of personal rights, property, and contracts.

Second and Third Year

01.031 Cooperative Education 4.0 x 0.0
Interdisciplinary: an interdisciplinary course, typically in a combination of legal and business subjects, that provides an opportunity to gain practical experience in the legal field.

01.032 Legal Research and Legal Writing 3.0 x 0.0
Study of the research, writing, and analysis skills necessary for the practice of law, including the process of legal research and the preparation of legal documents.

01.033 Legal Ethics and Professional Responsibility 3.0 x 0.0
Study of the legal and ethical responsibilities of the lawyer, including the development of ethical conduct and the application of ethical principles in legal practice.

01.034 Business Law 3.0 x 0.0
Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.035 Business Law 3.0 x 0.0
Continuation of 01.034. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.036 Business Law 3.0 x 0.0
Continuation of 01.035. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.037 Business Law 3.0 x 0.0
Continuation of 01.036. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

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01.039 Business Law 3.0 x 0.0
Continuation of 01.038. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

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Continuation of 01.039. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

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01.044 Business Law 3.0 x 0.0
Continuation of 01.043. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.045 Business Law 3.0 x 0.0
Continuation of 01.044. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.046 Business Law 3.0 x 0.0
Continuation of 01.045. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.047 Business Law 3.0 x 0.0
Continuation of 01.046. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.048 Business Law 3.0 x 0.0
Continuation of 01.047. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.049 Business Law 3.0 x 0.0
Continuation of 01.048. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.050 Business Law 3.0 x 0.0
Continuation of 01.049. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.051 Business Law 3.0 x 0.0
Continuation of 01.050. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.052 Business Law 3.0 x 0.0
Continuation of 01.051. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.053 Business Law 3.0 x 0.0
Continuation of 01.052. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.

01.054 Business Law 3.0 x 0.0
Continuation of 01.053. Study of the legal aspects of business organization and operation, including the regulation of business entities, such as corporations, partnerships, and limited liability companies.
Anatomy ........................................... 808
Anesthesia ....................................... 410
Division of Associated Medical
Sciences ........................................... 410
Medical Technology .......................... 411
Nuclear Medicine Technology ............. 412
Physical Therapy ............................... 413
Physician Assistant Program ............... 415
Biochemistry .................................... 417
Dermatology ..................................... 418
Dietetic Internship ............................. 419
Family Practice .................................. 419
Genetics .......................................... 420
Hospital and Health
Administration ................................... 420
Human Nutrition ............................... 423
Internal Medicine ............................... 424
Medical Scientist Training
Program ........................................... 426
Microbiology ..................................... 426
Molecular Biology ............................... 428
Neurology ........................................ 429
Neurosurgery .................................... 429
Obstetrics and Gynecology .................. 430
Ophthalmology ................................... 430
Orthopaedic Surgery .......................... 431
Otolaryngology—Head and Neck
Surgery ........................................... 432
Pathology ......................................... 432
Pediatrics ........................................ 434
Pharmacology .................................... 435
Physiology and Biophysics ................... 437
Preventive Medicine and
Environmental Health ......................... 438
Psychiatry ........................................ 440
Radiation Biology .............................. 441
Radiology ......................................... 442
Surgery ............................................ 442
Urology ............................................ 443

Dean: John W. Eckstein
Senior associate dean: Cyril A. Karchmar
Associate dean, academic affairs: J. R. L. Scott
Medical Library director: Richard M. Cutting
Associate dean, health education: Michael W. Coates
Associate dean, medical student affairs and
curriculum: Charles W. Heisey
Associate dean, Student Affairs: John F. Bohn
Assistant dean, administrative and finance:
Wilma L. Lillibridge
Consultant to the dean: Andrew W. Morris,
Paul M. Siegelman
Assistant to the dean: Richard K. Scholz
Degrees offered: B.S., M.A., M.D., M.F.T., M.L.
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 professions of dentistry, medicine, nursing, and pharmacy, but also to the life sciences areas of the College of Liberal Arts and the health-related programs of other colleges. Additionally, it serves health professionals from throughout the Midwest who take part in a year-round program of continuing medical education, in which several thousand practitioners 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 Iowa that offers work toward the M.D. degree, the College of Medicine is concerned with broader public issues of distribution and organization of health care services. It 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, respiratory therapy, and nuclear medicine technology), medical and associated medical science students have several opportunities to gain hands-on experience in physicians offices and community hospitals. For medical graduates, the College offers a broad variety of practical residency programs in six clinical disciplines through the college's 30-faculty physicians who can choose to enter the programs approved for postgraduate training. These programs are designed to finance their educational programs that demonstrate evidence of advanced teaching for the College of Medicine.

Combined M.D.-Master's Degree Programs Students who wish to pursue the M.D. degree in combination with a Master's degree program must gain admission to both the College of Medicine and the Graduate College. A total of 30 credits is required, with an additional eight credits at the graduate department level and the associated dean for medical student affairs of the College of Medicine.

Interdisciplinary Programs and Centers
Interdisciplinary programs and centers have been developed that draw strength from the faculty of the college and the facilities available to them, without regard to their departmental units or 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 determine emphasis through appropriate selection of a study program. Further information can be obtained from the academic dean for medical affairs.

The following centers are subdivisions of the College of Medicine:

**Medicine**

The College offers programs leading to graduate degrees through the Doctor of Philosophy in anatomy, biochemistry, microbiology, hospital and health administration, human nutrition, 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 is jointly offered by the College of Medicine and the Graduate College. The Medical Scientist Training Program provides opportunities for careers in medical science and academic medicine with emphasis on research and teaching. With support from the National Institutes of Health, the program includes the requirements for doctoral training in scientific basic medicine with the full clinical requirements of the medical curricula. The program entails six to seven years of study. Further details are given in the program description.

**Clinical Research Center**

The Clinical Research Center provides the setting for patient-oriented research in disease processes. Studies of normal growth and basic health also are conducted. The center is a discrete unit that may be bed, patients, and nursing staff involved in the care of patients, with the center also involved in classes that could not be accommodated in the clinical units of the hospital. The center is the central integral and interdisciplinary research center to advance the knowledge in the diagnosis of disease.

**Cardiovascular Research Center**

The Cardiovascular Research Center coordinates research activities related to cardiovascular diseases and encompasses the following laboratory and clinical programs: Clinic Cardiac Research Program on the Evaluation of the Circumference in Pathological States, the Specimen Center of Research in Arteriosclerosis, Specimen Center of Research in Arteriosclerosis, Specimen Center of Read more
Research is ischemic Heart Disease, specified Center of Research in Occupational and Immunologic Lung Disease, Program Project Grant on Central Blood Vessels. Juvenile Hypertension Program, NIH-Lilly Clinical Trial, several training programs, and a comprehensive program of interdisciplinary research supported by a number of individual project grants. Grants from private foundations, non-profit organizations, and municipalities to two bodies of cardiovascular research laboratories and administrative offices on top of the Medical Research Center.

Diabetes and Endocrinology Research Center

The Diabetes and Endocrinology Research Center coordinates research and training programs related to diabetes and endocrinology. It is the second largest research center at the University of Iowa and includes seven scientific divisions and a network of over 200 faculty members.

Cancer Center

The Cancer Center was established in 1978 to coordinate the efforts of the University of Iowa faculty and staff in cancer research, education, and demonstration programs related to all aspects of cancer.

Alzheimer's Disease Research Center

The Alzheimer's Disease Research Center (ADRC) is a national center for the study of Alzheimer's disease and related neurodegenerative conditions. It is located on the University of Iowa campus and is affiliated with the University of Iowa College of Medicine.

Research Facilities

TheADRC is located in Building 1 of the Medical Center, and includes laboratories, clinical research units, and administrative offices. The ADRC is one of the largest Alzheimer's disease research centers in the United States.

Educational and Patient Care Facilities

First- and second-year classes are taught in the main Medical Center, while third- and fourth-year classes are taught at the University of Iowa College of Medicine. All classes are conducted in state-of-the-art facilities.

Student SUCCESS (Supportive Counselor System) provides support and guidance to students during their time at the University of Iowa. The SUCCESS program is a comprehensive support system for students, and includes academic, personal, and professional counseling.

Doctor of Medicine

The University of Iowa College of Medicine accepts 150 students each year to its four-year course of study leading to the Doctor of Medicine (M.D.) degree.

The curriculum in medicine at the University of Iowa is based on a strong tradition of excellence. It is evaluated and reviewed by the faculty to ensure the continued medical needs of the new physician and society.
Basic Medical Sciences (First Three Semesters)

The first three semesters present a core of sciences basic to the study of medicine.

First Semester
- 59:165 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 to think about problem-solving approaches.
- 50:103 Gross Human Anatomy for Medical Students includes clinically-relevant areas of neuroanatomy and surface anatomy with clinical correlates. A complete description of the human body is undertaken, and the relationship to the living system is stressed.
- 60:104 Medical Embryology offers lectures on human embryology, with emphasis on the clinical aspect of development. Registration is limited to medical students; graduate students are referred to 69:211. The course is offered fall semesters.
- 60:105 General Histology for Medical Students provides a course in study of the core information concerning cellular and tissue structure and function needed for the work to be accomplished in physiology and pathology.
- 115:100 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 effectively with patients and colleagues.
- 63:110 Restoratives provide guidelines for the application of statistical principles to the biological and medical sciences. Emphasis is given to the interpretation of studies published in medical journals.

Second Semester
- 72:317 Medical Physiology offers students an understanding of responses that an organism gives to external stimuli and provides the basis for understanding the integration and regulation of organ systems. Much of the material in these two courses is presented from a clinical 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 clinical setting. Some demonstrations are used.
- 50:112 Medical Microbiology includes immunology and presents a core of information on the classification and nomenclature of infectious agents, as well as certain aspects of Lysis response to three agents. Laboratory work plays an important role in the course.
- 50:234 Medical Neurosciences is an integrated course dealing with basic principles of neuroanatomy and neurochemistry, with emphasis on the human central nervous system. The laboratory portion provides the anatomical study of spinal cord and brain.
- 60:201 General Pathology for Medical Students is correlated with microbiology in the semester to increase efficiency of the learning process. Emphasis is placed on pathophysiology and abnormal function in cellular tissue and disease degeneration, infection, and growth disorders. Clinical problem solving and discussion periods have replaced laboratories in this course.

Third Semester
- 89:202 Systemic Pathology for Medical Students applies the principles given in the previous semester to specific diseases in an organ system approach. Student-centered learning is fostered by discussion groups and practice in case analysis.
- 89:100 Preventive Medicine provides fundamental concepts to help prepare students in some of the social, 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.
- 115:106 Biochemical Engineering offers a thorough understanding of chemical processes, the special emphasis on systems and operations involving the medical sciences and the role of the physician. Topics include biochemistry, a variety of specialized areas related to medical practice and the role of the physician. Clinical examples are Perspectives in aging, Human Nutrition, and Spanish for Health Professionals.

Introduction to Clinical Medicine (Fourth Semester)

A major interdisciplinary core course, 50:111 Introduction to Clinical Medicine, is the fourth semester. It builds on the first three semesters to introduce students to the practice of medicine. Included in this course is a patient-oriented approach to medical education. The first year of medical school is divided into two parts: medical school and clinical clerkships. In the first year, students are introduced to the basic sciences through a series of lectures on basic science. The second year, students start to integrate the basic sciences with clinical medicine through clinical clerkships. Throughout the 16 weeks of the course, students spend time in the hospital, where they observe and practice the clinical skills that they will need in practice. This includes medical, surgical, and psychiatric procedures. Students are also introduced to the basics of medical research, including statistical methods and research design. The course is designed to help students develop the skills necessary for success in clinical medicine.

Clinical Clerkships (Third Year)

The third year includes the required clinical clerkships and presents students with opportunities to work with physicians in almost all disciplines as they care for their patients. Students spend nine weeks in various specialties, including general medicine, surgery, pediatrics, psychiatry, and obstetrics/gynecology, and two weeks each in anesthesiology, dermatology, radiology, cardiac surgery and internal medicine.

Period of Selective Study (Fourth Year)

The final year of medical school, the fourth year, is designed to provide students with an opportunity to choose specialties that interest them most. Students are assigned to clerkships in various specialties, including surgery, medicine, pediatrics, and psychiatry. They are also given the opportunity to choose clerkships in areas that are not typically assigned, such as orthopedics, cardiology, and radiology. This year is also an opportunity for students to develop their skills in clinical medicine and to prepare for their careers.

Financial Aid

The College of Medicine provides financial assistance to students through a variety of means. This includes loans, grants, and scholarships, as well as assistance from outside sources. The College of Medicine also offers a variety of resources to help students plan their finances, including budgeting tools and financial planning workshops. The College of Medicine also has a comprehensive and effective student loan program, which includes both federal and private loans. The College of Medicine also has a number of programs that provide financial assistance to students who are in need. These programs include the College of Medicine Scholarship Program, which provides financial assistance to students based on academic achievement, and the College of Medicine Loan Forgiveness Program, which provides financial assistance to students who are in the medical field and are working in underserved areas.
A limited number of grants are awarded in certain situations, small, short-term emergency loans may be obtained through the college.

Information on advising and financial aid can be obtained through the Office of Student Services, College of Medicine.

Educational Opportunities Program

The Educational Opportunities Program, under the direction of Professor John Smith, provides financial and academic 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). A 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 application is being made. Prospective students are urged to apply as early as possible. The closing date is December 1.

A final application will be forwarded to applicants whose AMCAS applications pass a review conducted by the College of Medicine. A $30 fee must accompany the final application form from applicants who have not completed work in residence at The University of Iowa. This fee is not refundable except to residents of Iowa who are denied admission.

Admitted applicants must file with the University Office of Admissions an official transcript from each college attended.

Requirements

Applicants for admission to the College of Medicine must have completed 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 90 semester hours of credit, or the equivalent, including:

- Physics, an introductory course;
- Mathematics: college algebra and trigonometry, or advanced college mathematics for applicants who completed college algebra and trigonometry in high school;
- Chemistry: at a minimum, a complete introductory course in organic chemistry, ordinarily following a complete introductory course in general or modern chemical principles, and
- Biological sciences: a complete introductory course in the principles of animal biology, or zoology and botany (not botany alone), and an advanced biology course.

All the foregoing must be taken with appropriate laboratory work.

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 basic curriculum requires demonstrated proficiency in a variety of cognitive, problem-solving, manipulative, communicative, and interpersonal skills.

Thereafter, candidates admitted to the College of Medicine must be able to:

- Observe 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 somatic senses necessary to perform a physical examination;
- Perform palpation, auscultation, and percussion;
- Relate reasonably to patients and establish meaningful and professional relationships with them;
- Communicate the results of the examination to patients and to 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 precise, quick, and appropriate action in emergency situations;
- Accept criticism and respond by appropriate modification of behavior; and
- 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 Admissions Committee of their current college to discuss the possibility of their admission.

Fullfillment 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 3.20 for all college work undertaken. Where courses are available on a graded or pass/fail basis, it is expected that applicants will have taken the required science courses for a grade.

Preference is given to applicants with high scholastic standing who are residents of Iowa. Consideration is also given to outstanding nonresidents.

Applicants are required to take the Medical College Admissions Test administered by the American Association of Medical Colleges not later than the fall of the year preceding that for which they are seeking admission. Students may arrange to take the examination through the University’s Evaluation and Examination Service.

Personal 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 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 a $500 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 will be required to take the pre-examination and periodic health screening programs of the Student Health Service in conjunction 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 University of Iowa College of Medicine has adequate skills, knowledge, judgment, ethical standards, and personal integrity to assume the responsibilities of a medical doctor. To perform its duties, the committee depends on the cooperation, advice, and judgment of faculty, students, and administration.

The promotions committee consists of six members: the dean and the associate dean for medical student affairs (without a 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. In addition, a student member is appointed 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 that an appropriate tutorial program is designed for the student. Each student must demonstrate proficiency in each required course.

Evaluation of student progress in courses is based on examinations or other tests as determined by each department or course and on clinical skills and competence as deemed appropriate by the department or course. The College of Medicine requires that all students demonstrate proficiency in a variety of cognitive, problem-solving, manual, communicative, and interpersonal skills and 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 using the letters E, P, F, and I on the selective student record. Only grades P, F, and I are used. The letter P indicates satisfactory achievement at the passing level. The letter E signifies "expected," indicating achievement at an exceptionally high level. The letter F 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 grading period, following the completion in each academic semester and in 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 performance is unsatisfactory. The committee reviews the records of all students whose grades are below acceptable standards on academic work or failing to demonstrate readiness for any of the eleven skills or abilities detailed above, or not meeting the medical ethics standards. The committee considers other business or 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's ability to complete a course of study, to pass the course of study, or to continue satisfactorily. These recommendations are forwarded for action to the medical council and executive committee, meeting in joint session to represent the faculty. Possible recommendations include immediate dismissal of 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 declassified schedule.

Students having unremediated grades of failure are placed on academic probation. A grade of "thegraded" is not remediated in the time and manner specified in the promotions committee recommendation. Becomes a grade of failure. Students who are on probation are considered for dismissal if further academic difficulties persist.

The promotions committee presents all recommendations for awarding the degree, Doctor of Medicine, to a joint meeting of the medical council and executive committee, which act on the recommendations for the faculty.

Medical students are not permitted to drop courses after the deadline established by the dean of the College of Medicine unless 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 "U" unless the entire registration is canceled.

Relationship to Course Directors Committees

The course directors committees provide guidance and counselling for students and act as a resource for and provide advice to the promotions committee.

Appeals

Students who want to appeal promotion decisions may request an appeal hearing by 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.

Leave of Absence

The College of Medicine believes that certain students may benefit from being granted a leave of absence from the college for specified periods of time. A leave of absence should be requested from the associate dean for medical student affairs. Leaves are granted at the discretion of the dean.

All leaves must be arranged in advance of the student's absence. Students 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 dean, in a grade of F.

Withdrawal

Students are withdraw from the College of Medicine upon approval of a written application presented to the associate dean for medical student affairs.

Reinstatement

Application for reinstatement by students who have withdrawn voluntarily or who have been medically withdrawn where 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 to reprimand or further registration to any student it believes he or she he has not lived up to the expected academic fitness and requirements for entering the medical profession, as described in detail in the Handbook for New Students. Ordinarily, reinstatement is 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 the best way to resolve the problem. The medical school has a formal procedure, outlined in "Procedural Policies and Procedures," and an informal procedure, outlined below. In the College of Medicine, although with problems or complaints should first attempt to settle informally with the faculty member involved. Failing a satisfactory outcome, students should then turn to the course or clerkship director or departmental chair for help. Failing still is not obtained, they may discuss the complaint informally with the associate dean for medical student affairs. The informal discussion does not necessarily lead to involvement of the office of the dean in an official capacity. 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 are part of the formal procedure. The informal procedure is intended for any situations students may encounter, including grading disputes, alleged academic dishonesty, alleged discrimination during clinical rotation (e.g., failing patient data), and perceived lack of cooperation or harassment. Complaints of sexual harassment are handled confidentially and in accordance with University Policy and Procedures.
When students are in the process of resolving a complaint with a faculty member or department, others should try to avoid jumping to conclusions based on rumors and bits of information. In the interest of the student's confidentiality, full details of incidents are almost never released to the medical student body.

Students are encouraged to make full use of counseling services available from the dean's office or through Student Health Service. These cover the full range of academic, personal, financial, or emotional difficulties and usually are helpful informally without giving into one's record, unless it involves an official action (e.g., taking a year off or scheduling an exam) or academic matter.

Division of Associated Medical Sciences

The division offers a B.S. degree in biological sciences, the M.P.T. and M.A. degrees offered by the Physical Therapy Program, the Ph.D. offered in cooperation with the Department of Exercise Science in the Division of Physical Education, and the M.S. Physician Assistant Track in Preventive Medicine and Environmental Health.

General Policies

Advising

When students declare their intended major to be one of the programs in the Division of Associated Medical Sciences, they are assigned to that program for academic advising.

Admission

Students are admitted to the College of Medicine on the basis of one's record in one of its programs. Admission policies and procedures vary from programs to program. The Physician Assistant and Nuclear Medicine Technology programs have an early admission process.

Students should consult the individual program descriptions and program offices for details of the admission processes. Students may be admitted as degree or nondegree candidates (special students). Nondegree candidates are subject to College of Medicine regulations for academic probation and dismissal.

To be considered for admission, applicants must have earned a cumulative grade-point average of 2.00 or better in all college work attempted and have completed college-level coursework in biology, chemistry, and mathematics appropriate to the programs: medical technology, 2.00; nuclear medicine technology, 2.20; and physician assistant, 2.50. Admission committees give special attention to grades and the sciences, particularly those prerequisite science courses required by the individual programs. The cumulative or science grade-point average for the last 60 semester hours may be used to satisfy the minimum grade-point average requirement, at the discretion of the program admission committee.

Student Health

Students admitted to division programs must show proof that they have had a recent physical examination including routine laboratory procedures and immunizations for their own and their patients' protection before they enter the program. These records are maintained through Student Health Service. Admission should be consulted for further information.

Financial Aid

Students in the Division of Associated Medical Sciences undergraduate programs are eligible to apply for undergraduate financial aid. Scholarships, grants, loans, and part-time job placement are administered by the University's Office of Student Financial Aid and are awarded on the basis of demonstrated need. Full-time positions in related areas are 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, 2.00 in work attempted as a student at the University of Iowa, and 2.00 in all graded work attempted after admission to the College of Medicine. Students enrolled in 8 programs that earn the parasitologists grading system must pass all courses required to complete the program.

The residence requirement may be met by earning the final 30 consecutive semester hours in residence, or at least 50 semester hours in residence, or an overall total of 90 semester hours in residence.

No department includes course work at other colleges or universities, course work in other undergraduate colleges at The University of Iowa, and all work by correspondence, including Iowa State University Correspondence Study courses.

General Education Requirements vary from program to program. Students must check the requirements of the specific program or degree objective. Specific Requirements for the major are listed in each program description.

Double Majors

Students may earn more than one major in the College of Medicine by meeting the requirements for each major.

Two Baccalaureate Degrees

Students who want to earn two baccalaureate degrees, each from a different college, must do so under a combined degree program and must have their combined course of study approved by the committee on combined degree studies. The committee should be consulted for further information.

Second Baccalaureate Degree

Students who already possess a baccalaureate degree and who want to earn an additional baccalaureate degree must complete at least 30 consecutive semester hours in the College of Medicine. Students who hold a B.A. or B.S. degree will be considered to have satisfied all General Education Requirements for graduation, except any language requirement. Holders of other degrees must meet college and program degree requirements. Students with B.A. or B.S. degrees must satisfy the requirements of the 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 programs. Students in the combined program usually are able to meet the baccalaureate degree requirements of both colleges in about five academic years. The exact length of time necessary to complete the program is determined by the area of study selected in each college. Students who enter the combined degree program must be assigned to two faculty advisors, one in the major department of the College of Medicine and the other in the major department of the College of Liberal Arts.

Candidates in the combined degree program must satisfy all requirements for both degrees. They must complete an overall total of 154 semester hours of credit, including at least 30 semester hours of courses offered by the College of 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 their major department or in another college of the University by meeting that department's requirements for the minor. 15 hours, a minimum of 15 semester hours must be taken in the minor.

Application for Degree

Students who want to be considered for graduation must file an application for degree with the Office of the Registrar before the deadline for the session in which the degree is to be conferred. Students who have a minor listed on their transcript must indicate this on the degree application form so that completion of the requirements for the minor can be verified.

Duplication

Duplication occurs when students take the same course more than once or when they take a course that duplicates the content of a satisfactorily completed course. Regression occurs when students take a core or elementary-division course, satisfactorily complete a more advanced or higher level course in the same subject. Duplication and regression are assessed by the registrar at the time of graduation analysis. Hours earned by Application or Regression do not count toward the number of hours needed for graduation.

Graduation Honors

Approximately ten percent of the division's graduating students may be recognized for their academic achievement upon recommendation by the program and with the Dean's approval. Minors and other specialties have been established by 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 after the second 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 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 last one-third of the course. Students who have registered for courses offered for variable or arranged credit may change the number of semester hours with the signature of the instructor, the adviser, and the head of the division at any time prior to the end of the first two-thirds of the course. Other changes in registration (such as to audit for credit or vice versa) may be made only during the first two-thirds of the course. It is the student's responsibility to see that the change of registration form is approved by the necessary individuals and delivered to the Registration Center. Changes in registration become effective on the date the completed form is submitted to the Registration Center.

Withdrawal of Registration

Students may withdraw from any course without academic penalty at any time prior to the end of the first two-thirds of the course, but no credit is given for the course. Later withdrawal results in automatic assignment of an F. Students who withdraw are not reimbursed after the deadline for that session.

Grading Procedures

Marking procedures vary from program to program. Students should consult individual program policy statements for information.

Auditing Courses

Students may register as auditors with approval of the appropriate program director and course instructor. In addition to obtaining these signatures, students must register prior to the course. If the course is audited, the mark of R (registered) is assigned if the student's attendance and performance are satisfactory. If they are unsatisfactory, the mark of W (withdrawn) is assigned. Courses completed with a mark of R do not appear on any college record and carry no credit toward graduation. Auditing may not be used as a second-semester-only option.

Second-Grade-Only Option

Repeating courses for the second-grade-only option is allowed in extraordinary circumstances. To repeat a course for the second-grade-only option, students must obtain the signatures of the course instructor, the program director, and the dean on a special form obtained from the program office. The property right forms must be presented to the registrar's office before the end of the first two-thirds of the course. Both grades will remain on the permanent record, but only the second one is used to calculate grade-point average and hours earned.

Incomplete

A grade of I (Incomplete) may be reported if the reasons for failure to complete the course satisfactorily are acceptable to the program director and the course instructor. There must also be evidence that the course work will be finished within a reasonable length of time, usually by the end of the next academic session. Incompletes not removed by the deadline for submission of final grades for the next session result in the assignment of a grade of F. Changing the grade when an Incomplete has been converted to an F requires the signature of the dean on a change of grade form.

Credit by Examination

The procedure for the acceptance of and the granting of credit by examination varies from program to program. The program director would be consulted for further information.

Reports to Students

Instructions contact any student whose work falls below the minimum acceptable level when the program is recognized. Grades are reported on the student's transcript. Following University protocol. 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 the 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 meet with the program director upon evidence that the problem has been corrected. Such action is usually taken at the end of a semester or session. Entering students may be admitted to probation if they fail to meet the minimum stated standards for advancement.

Continued unsatisfactory scholarship or unprofessional behavior may result in dismissal. Students dismissed from a program must reapply for admission through the regular established program admissions process. Following recommendation of the academic review committee of the division, at least four months prior to the next registration period.

Students placed on probation or dismissed from a program are notified in writing of
Academic Misconduct
plagiarism and Cheating
All cases of plagiarism and cheating in the College of Medicine are reported to the dean with a statement of relevant facts. The program director and the instructor concerned may submit recommendations for appropriate disciplinary action.

The individual instructor may reduce the student's grade, including assignment of the grade of F in the course. A report of the actions sent to the program director and the dean.

The dean, if a faculty committee appointed by the dean, may impose the following or other penalties as the offense post warrant: disciplinary probation, assessment of additional hours of the degree, suspension from the program for a period of time, or recommendation of expulsion from the university.

Appeal Procedure
Students who want to appeal a decision should submit an appeal in writing to the dean within 15 days of receipt of the decision in writing.

Unclassified Students
Persons who do not wish to be admitted to the College of Medicine but want to register for certain courses will be admitted only if the course is an essential component of a program of studies and upon the student's compliance with all the regular requirements for admission to such a course, or if the student is recommended by the department head of the subject in which the student wishes to be admitted.

Medical School Courses

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Preclinical Study for the Health Care Professions

The department contributes to the preclinical education of health care professionals by providing major courses in gross anatomy, histology, and neuroscience. The department participates in the Medical Science Training Program, the Cellular and Molecular Biology Training Program, and the newly established Neuroscience Program.
ANESTHESIA

Head: John P. Thiele
Professor: John J. Cargile, Mohammad Cheirios, John A. Meyburg, John Stocklen, Martin Sichili, Michael M. Taub
Associate professor: Joseph N. Sipos, Daniel Ostrow, P. M. Oehl, Robert J. Reamer, Robert Kos, Melvyn Pasternack, David Rainey, Paul H. B. Warren
Associate professor: James C. Carter
Assistant professors: Roderick G. Andersen, Brian Baker, Robert Luski, Steven Lamb, Daniel L. Paul, Marc Moller, Raymond Hashim, Mary Kusma, T. Kevin O'Donnell, Alan Yen, Richard W. Baxtewell, Eugene E. Wolfinbarger
Vice-chair: Peter J. R. Cooper
Vice-chair: Annette R. Hallett, Mary Kusma

The department introduces the second-year medical student to anesthesia as a specialty: helps to develop in the third-year student the disease concepts and technical skills related to resuscitation, airway management, and the care of the critically ill patient; and offers the fourth-year student an intensive study in any and all phases of the department's clinical experience, seminars and teaching conferences, and ongoing research activities to help the postgraduate student or resident develop the knowledge and skills required of a specialist in anesthesia.

Courses

111 Clinical Anesthesiology 2 s.h.
This course is designed for second-year medical students and covers basic concepts and anatomy, physiology, and pharmacology. The course covers the use of anesthetic agents, their mechanisms of action, and their uses in various clinical situations. It also covers the evaluation of anesthetic methods and their effects on the patient's physiology.

111 Clinical Anesthesiology Seminar 2 s.h.
This seminar is designed to provide second-year medical students with a deeper understanding of the topics covered in the Clinical Anesthesiology course. It also provides a forum for students to present their research and clinical cases.

ANESTHESIA

DIVISION OF ASSOCIATED MEDICAL SCIENCES

Heidi Rex Montgomery

The Division of Associated Medical Sciences provides coordination of professional programs for training medical technologists (with tracks in cytogenetics, perfusion, and biotechnology) for nuclear medicine technologists, physical 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. Physics, computer science, and psychology are required by some programs and are highly recommended for others. Students should plan their program carefully so that conflicts are specifically required courses do not occur. It is imperative that students consult with the appropriate program advisor to assure the proper sequencing of courses.

The following is a typical curriculum for undergraduate students with options being exercised after consultation with program advisors. Programs are abbreviated as follows: MT—Medical Technology (MT-CC—cytogenetics track, MT-P—perfusion track, MT-BT—biotechnology track); NMT—Nuclear Medicine Technology; PT—Physical Therapy.

Freshman Year

First Semester

1111 Foundations 4 s.h.
1112 Physical civilization and culture 3 s.h.
Physical education skills 2 s.h.
L21 Introductory course in clinical observation 1 s.h.
Z215 Mathematics for the Biological Sciences 4 s.h.
Total 16 s.h.

Second Semester

1312 Physical Perspectives 3 s.h.
Physical education skills 1 s.h.
14 Principles of Chemistry II 3 s.h.
37 Principles of Animal Biology (MT, all tracks) 5 s.h.
46 Principles of Chemistry Lab I 2 s.h.
Total 18 s.h.
37:115 Cell Physiology
601 Principles of Human Anatomy (NMT)
72-150 Intermediate Physiology (MT; CG)  
3 s.h.
37:128 Fundamental Genetics (PT; CG) 
3 s.h.
225:101 Biostatistics (NMT; PT) or
225:102 Introduction to Statistical Methods (NMT; PT) 
3 s.h.
Total 16-15 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: Marian Schwalbauer
Assistant director: Barbara Myhalek
Medical director: James A. Gorten
Associate professor: Janet A. Gorten
Lecturers: Ruthanne Rydhal, Marlen Schwalbauer

Assistant: Larry Ramirez, James O’Connor
Assistant in teaching: Kathleen Kelly, Lucy Straley

Alternate instructor: John Abes, Denee Osier, Jay Schwalbauer

Adjunct associate: Thomas Parmalee

Adjunct assistant in teaching: Ray Vibes, Mike Breasa, Deirdre Covin, Jerry Huben, Patricia Wall, Al Lueck, Michael Luxson, Ross Meiin, Beverly Portill, Darley Peterson, Lisa Pollock, Kathy Royman, Glenda Schrammek, Olinda Stahlman, Barbara Stewart, John Vaughs

Offered: B.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 hospital, private, and government laboratories; clinics; physiological offices; and industrial, pharmaceutical, biological, and medical research laboratories. Medical technology/clinical laboratory scientists must be highly skilled health team members who use a battery of sophisticated procedures and instruments in their work and who possess specialized knowledge and skills acquired through completion of a formal program of academic and clinical study.

The Medical Technology Program is sponsored cooperatively by the College of Medicine, the College of Liberal Arts, 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 remaining curriculum may be as follows.

Junior Year

First Semester
Foreign language 4 s.h.
37:128 Fundamental Genetics (MT; CG) 3 s.h.
Electives 8 s.h.
Total 15 s.h.

Second Semester
05:102 Design and Analysis of Experiments in the Medical Sciences (MT-RT) 3 s.h.
Foreign language 4 s.h.
72:150 Intermediate Physiology (all tracks) 4 s.h.
61:119 Instrumentation in Clinical Laboratory Science (all tracks) 3 s.h.
61:136 Independent Study in Immunology 1 s.h.
Electives 6 s.h.
Total 17 s.h.

Highly recommended elective courses include parasitology, quantitative analysis, and statistics.

Senior Year

The clinical program consists of a minimum of 12 months of didactic 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:

61:119 Instrumentation in Clinical Laboratory Science 3 s.h.
61:120 Clinical Microbiology for Medical Technologists 3 s.h.
61:121 Immunology for Medical Technologists 1 s.h.
61:122 Clinical Chemistry for Medical Technologists 1 s.h.
61:123 Immunohematology for Medical Technologists 3 s.h.
91:124 Clinical Hematology for Medical Technologists 5 s.h.
61:125 Microbiology for Medical Technologists 6 s.h.
61:126 Clinical Chemistry for Medical Technologists 5 s.h.
61:127 Clinical Immunohematology for Medical Technologists 2 s.h.
61:128 Clinical Microbiology for Medical Technologists 5 s.h.
61:129 Clinical Hematology for Medical Technologists 3 s.h.
91:131 Clinical Laboratory Science Seminar 2 s.h.
61:136 Paracommunication for Medical Technologists 1 s.h.

Alternate tracks include the following courses.

Bacteriology
61:135 Independent Study in Clinical Laboratory Science 1 s.h.
61:178 Selected Biomedical Research Techniques 3 s.h.

Cytogenetics
61:158 Medical Cytogenetics 3 s.h.
61:159 Medical Cytogenetics Laboratory 2 s.h.
61:152 Medical Cytogenetics Seminar 1 s.h.
61:155 Clinical Medical Cytogenetics 3 s.h.

Highly recommended pre-entry courses include 37:112 and 37:118.

Perfusion
61:140 Respiratory and Renal Physiology 3 s.h.
61:161 Introduction to Medical Electronics and Biophysical Monitoring 3 s.h.
61:145 Cardiacanatomical Anatomy, Physiology, and Pathology 5 s.h.
61:153 Perfusion Technology I 8 s.h.
61:154 Perfusion Technology II 8 s.h.
61:160 Clinical Perfusion
Techniques and Methods 3 s.h.
61:166 Pharmacology for Perfusionists 2 s.h.
61:167 Perfusion Seminar 2 s.h.
61:158 Perfusion Research 4 s.h.
Highly recommended pre-entry courses include anatomy, statistics, and practice.

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 32 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 an abbreviated pregraduate 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.

Fourteen semester hours of biology, including general zoology, microbiology, and physiology.

Admission is on a competitive basis.

Minimum cumulative grade-point averages at 2.60 overall and 2.60 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-year curriculum are responsible for their textbooks, University tuition, and student fees. Laboratory costs and equipment such as microscopes are provided by the program.

Nuclear Medicine Technology

Director: Frederick J. Holove

Medical director: Peter T. Kerber

Teaching director: John H. Stiller


Associate professor: Richard Hitzes, Karen Stroo, James E. Silver

Assistant professors: Mark T. Bayden

Assistant instructor: Daniel Koenig, G. Leonard Valent

Clinical associate professor: Joyce A. Pinto (College of Pharmacy)

Visiting associate: Karen B. Rand

Adjunct instructors: Vashti H. Hebbard

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 increased the 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 detection and computers to trace the movement and localization of radioactive tracers in the human body.

Other basic job responsibilities may include radiation safety, quality control, radiopharmaceutical preparation and administration, and collection, and preparation of biological specimens to measure levels of hormones, drugs, or other body compounds.

In all these functions, the nuclear medicine technologist works hand-in-hand with nuclear medicine physicians, health physicists, radiopharmacists, and technologists 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 Council on Allied Health Education and Accreditation of the Commission on Medical Education of the American Medical Association. Fulfillment of the requirements established by the AHA Accreditation Board involves three years of preclinical work in the College of Liberal Arts and the College of Medicine, and a minimum of 32 months of professional clinical experience, available at the University of Iowa Hospitals and Clinics and the Veterans Affairs Medical Center.

Upon satisfactory completion of the fourth-year program, students receive the Bachelor of Science degree from the College of Medicine and a certificate of training. Graduates are then eligible for national certification as nuclear medicine technologists.

The required courses in the freshman and sophomore years emphasize the physical and biological sciences, which provide a basic background for further development in the junior year. Applicants are strongly advised to pursue a course of study that is applicable to a baccalaureate degree, with a minor in biology, chemistry, biochemistry, or microbiology. In this way, students who are not admitted to the NMT program can complete a degree in their chosen area.

Junior Year

The following are recommended courses:

60-1 Principles of Human Anatomy and Physiology 3 h.

72-120 Human Physiology 4 h.

22-7 Introduction to Computed Tomography with FORTRAN 3 h.

15-1 Survey of Medical Imaging 1 h.

15-20 Elementary Statistics in Medicine 3 h.

22-110 Nuclear Medicine 3 h.

11-161 Introduction to Biostatistics 3 h.

71-120 Drugs: Their Nature, Action, and Use 2 h.

Advanced courses in chemistry, biology, or physics used on a theoretical course, subject to the approval of the director.

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, radiophysics, radiometry, radiopharmacology laboratory procedures, radiation protection, patient care, medical terminology, anatomic and physiologic bases of nuclear medicine techniques, biomes and instrumentation, administration and management,

matheamtics and statistics of nuclear medicine; and computer applications in nuclear medicine. Clinical rotations focus on nuclear imaging, clinical radiopharmacy, computer applications, and quantification of radionuclide activity in vivo and in vitro, including kinetic studies. Radiation safety is established in radiommatometry, diagnostic X-ray, computed tomography, magnetic resonance imaging, echocardiography, cardiac catheterization, and ultrasound.

The clinical year consists of the following courses:

74-1 Principles of Nuclear Medicine 3 h.

74-2 Introductory Clinical Nuclear Medicine 3 h.

74-3 Principles of Nuclear Medicine II 3 h.

74-4 Intermediate Clinical Nuclear Medicine 3 h.

74-105 Advanced Clinical Nuclear Medicine 3 h.

For course descriptions, see "Radiology" in this section of the Catalog.

Admission

Requirements for early admission to the Nuclear Medicine Technology Program include the following:

A minimum of 60 semester hours in all course work with a cumulative grade-point average of 2.50.

Fulfillment of the College of Liberal Arts General Education Requirements in English, physical science, biology, health sciences, foreign civilizations or Cultures, and social sciences (sociology and psychology are recommended).

A minimum of 20 semester hours in three science courses, including a complete introductory course in laboratory in chemistry, physics, and zoology.

A minimum of 3 semester hours in mathematics, including at least one course in computer science.

Fulfillment of these basic admission requirements does not ensure acceptance into the Nuclear Medicine Technology Program. Promotion from the seventh to the final clinical year is conditional upon satisfactory completion of a minimum of 96 semester hours of work in the recommended areas.

A new class begins in late August each year. Application materials must be received by March 1. Persons interested in the program should apply by May 1. At present, the class size is limited to ten students. Prospective students are encouraged to consult with the program office to plan an appropriate preprofessional program.
The two-year Master of Physical Therapy Program consists of the following courses.

First Semester
40:110 Human Anatomy 4.0 s.h.
40:203 Introduction to Human Pathology 3.0 s.h.
101:141 Principles of Physical Therapy 4.0 s.h.
101:210 Kinesiology and Pathomechanics 4.0 s.h.

Second Semester
40:113 Medical Neuroscience 4.0 s.h.
101:131 Therapeutic Physical Agents I 4.0 s.h.
101:185 Musculoskeletal Therapeutics 2.0 s.h.
101:191 Clinical Education I 1.5 s.h.
101:202 Orthopedics and Manual Physical Therapy 4.0 s.h.

Third Semester
101:122 Psychosocial Aspects of Patient Care 1.0 s.h.
101:176 Principles of Neurology 1.0 s.h.
101:192 Clinical Education II 1.5 s.h.
101:201 Applied Clinical Medicine 2.0 s.h.
101:206 Cardiopulmonary Therapeutics 4.0 s.h.
101:249 Research Practicum I 1.0 s.h.
101:293 Research Practicum II 3.0 s.h.
101:294 Research Practicum II 3.0 s.h.
101:194 Clinical Internship (May-August) 6.0 s.h.

Fifth Semester
101:194 Clinical Internship (August-October) 3.0 s.h.

Admission
A new class is admitted to the Master of Physical Therapy Program each fall. To qualify for admission to the MPT program, applicants must have completed or plan to complete before enrollment a baccalaureate degree from a regionally accredited institution in the United States. The following course prerequisites must be included in the baccalaureate degree program:
- Biological sciences—a complete introductory course in principles of general biology or zoology and advanced course work in biology or zoology equivalent to 12 semester hours;
- Physics—a complete introductory course equivalent to 8 semester hours;
- Chemistry—a complete introductory course equivalent to 8 semester hours;
- Physiology—a systematic human physiology course equivalent to 3 semester hours;
- Math course—equivalent to 6 semester hours;
- Psychology—equivalent to 6 semester hours;
- Science courses—equivalent to 3 semester hours.

Statistics—also a college-level statistics course equivalent to 3 semester hours.

All science courses must include the appropriate laboratory instruction.

Persons who do not meet the above requirements should have their applications reviewed by the Admissions Committee to the Master of Physical Therapy Program. Applications can be accepted beginning September 1 of the following year.

Applications are accepted any time and should be submitted as early as possible. The closing date is October 1.

Expenses
In addition to general University expenses, students in the Master of Physical Therapy Program are responsible for the purchase of personal liability insurance, professional liability insurance, and course supplies.

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 the three specialty areas. Clinical practice experiences are offered to complement these specialties. This program requires a minimum of 30 semester hours of graduate coursework work. Completion of this program requires a prerequisite Clinical experience in a corresponding field.
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), musculoskeletal function (muscle strength and endurance, gait, posture, and dexterity evaluation), and neuromuscular activity (electromyography, spinal reflexes, CNS control mechanisms). Use of extramural laboratories also may be arranged.

Collaborative studies are encouraged with other departments, such as neurology, internal medicine, pediatrics, orthopedic surgery, physiology, 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 level in the professional level of physical therapy training and show promise of teaching at the advanced master's level.
- Be able to engage in original scholarship and research directed toward the discovery of new knowledge and the development of theoretical principles that will advance the understanding of physical therapy clinical practices.
- Have knowledge of the physical therapy theoretical and research literature related to a specific area.
- Be skilled in the application of basic concepts related to neural, muscular, and neuromuscular physical therapy.

The following are required courses:

101:212 Biomedical Instrumentation 3 s.h.
101:301 Thesis: Physical Therapy 4 s.h.*
101:350 Research Methods in Scientific Literature 2 s.h.
103:620 Design and Analysis of Experiments in the Biomedical Sciences 3 s.h.

One of the following four specialty courses:

101:213 Biomechanical Principles of Therapeutics arr.
101:260 Health Promotion and Cardiopulmonary Therapeutics arr.
101:270 Occupational Biomechanics arr.

The following are recommended courses:

701:200 Introduction to Instructional Design and Technology 3 s.h.
69:230 Introduction to Human Pathology 3 s.h.
101:325 Independent Study arr.
101:350 Electromyography in Kinesiology and Biomechanics 3 s.h.
101:327 Research in Therapeutics arr.
271:505 Advanced Anatomy and Kinesiology 2 s.h.
271:141 Exercise Physiology 3 s.h.
711:120 Exercise: Therapeutic Action and Use 2 s.h.
710:362 Facilitating Learning in Health Science Education 3 s.h.
101:380, 282, or 284 Practicum (teaching, research and/or clinical) 3 s.h.**

*May be taken pass-fail.
**Maximum of six semester hours.

Admission

To be considered for admission, applicants must be graduates of an approved professional program in physical therapy and must have earned a grade-point average of 2.75 or higher on a 4.00 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 collegiate 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 special emphasis on Therapeutics. The program is described in detail under "Exercise Science and Physical Education" in the "College of Arts and Sciences" section of this Catalogue.

Students successfully completing the Ph.D. programs 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 theoretical 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, musculoskeletal, and neuromuscular physical therapy.

Admission

Students are admitted to the study program leading to the Ph.D. degree on the basis of their grade-point average on work completed for the master's degree or scores on the GRE General Test. To 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 on file at The University of Iowa.

Applicants must complete the Graduate College application. The Office of Admissions reserves the right to require that the Graduate College standards be met. The application, including test scores and copies of transcripts, is sent to the department 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

101:212 Physical Therapy Management and Administration 3 s.h.
101:222 Psychosocial Aspects of Patient Care 3 s.h.
101:250 Physiological Aspects of Exercise 3 s.h.
101:265 Principles of Physiology and Biophysics 3 s.h.
101:270 Medical Physics 3 s.h.
101:275 Research and Analysis in Physical Therapy 3 s.h.
101:310 Measurement of Mobility and Function 3 s.h.
101:320 Quantitative Analysis of Movement 3 s.h.
101:330 Surgical and Radiological Intervention 3 s.h.
101:350 Occupational Therapy 3 s.h.
101:350 Physical Therapy Assistant 3 s.h.
101:350 Medical Technology 3 s.h.
101:350 Neurological Therapy 3 s.h.
101:350 Physical Rehabilitation 3 s.h.
major disciplines of clinical medicine, 
students also are introduced to the science and art of obtaining a medical history and 
performing a thorough physical 
examination. This course is taken in 
seminars with no medical students. 
The third clinical phase consists of a 36- to 
36-week core primary-care curriculum, 
including six weeks each of family medicine, 
general internal medicine, 
and otolaryngology/head and neck surgery. 
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 science and 
specialty 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 other facilities throughout the state. Students gain additional opportunities through 
placement with selected preceptors 
evaluated in clinical work in office-based 
practices. The didactic and clinical phases of the program emphasize 
quality care delivery with the use of 
physician assistants as integral members of the health care team. The program is 
integrated with the training of the 
College of Medicine, permitting 
interdisciplinary activities among 
several medical and health-care professional 
students.

Professional Curriculum 

First Year 

Phase I 

71.125 Pharmacology for Health 
Sciences 

Physician Assistant Students 

6 s.h. 

60.105 Law and Medicine for 
Physician Assistant Students 

1 s.h. 

60.111 Gross Anatomical Anatomy for 
Physician Assistant Students 

6 s.h. 

61.122 Health Sciences 

Microbiology 

4 s.h. 

61.210 Introduction to Human 
Pathology 

4 s.h. 

69.140 Clinical Pathology for 
Physician Assistant Students 

2 s.h. 

72.144 Human Physiology 

for Physician Assistant Students 

4 s.h. 

99.146 Biochemistry for 
Physician Assistant Students 

3 s.h. 

117.172 Seminar for Physician 
Assistant Students 

1 s.h. 

117.190 Introduction to the Medical 
and Physical Assistant Professions 

1 s.h. 

117.195 Preventive Medicine for 
Physician Assistant Students 

1 s.h. 

Phase II 

51.112 Introduction to Clinical 
Medicine for Physician Assistant 
Students 

20 s.h. 

Second Year 

Phase III 

The following are required clinical rotations. 

70.055 Pediatrics for Physician 
Assistant Students 

6 s.h. 

75.055 General Surgery for 
Physician Assistant Students 

6 s.h. 

78.055 Internal Medicine for 
Physician Assistant Students 

6 s.h. 

115.055 Faculty Practice I for 
Physician Assistant Students 

6 s.h. 

60.109 Osteopathy 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. 

70.092 Pediatrics Elective for 
Physician Assistant Students 

arr. 

75.090 Emergency Room Elective 

for Physician Assistant Students 

4 s.h. 

76.102 Orthopedics Elective for 
Physician Assistant Students 

2 s.h. 

115.090 Family Practice Elective 

for Physician Assistant Students 

arr. 

115.055 Faculty Practice II for 
Physician Assistant Students 

6 s.h. 

78.100 Internal Medicine Elective 

for Physician Assistant Students 

2 s.h. 

62.050 Dermatology Elective for 
Physician Assistant Students 

2 s.h. 

61.100 Neurology Elective for 
Physician Assistant Students 

2 s.h. 

67.100 Ophthalmology Elective 

for Physician Assistant Students 

2 s.h. 

72.420 Radiology Elective for 
Physician Assistant Students 

2 s.h. 

75.110 Surgery Elective for 
Physician Assistant Students 

2 s.h. 

75.111 Surgery Elective 

(Transplantation/Reconstructive) 

for Physician Assistant Students 

2 s.h. 

75.112 Surgery Elective (Burn Unit) 

for Physician Assistant Students 

2 s.h. 

70.105 Rehabilitation Elective for 
Physician Assistant Students 

2 s.h. 

78.110 Internal Medicine Elective 

(Cardiology) for Physician Assistant 
Students 

2 s.h. 

78.130 Internal Medicine Elective 

(SICU) for Physician Assistant 
Students 

2 s.h. 

78.150 Internal Medicine Elective 

(Oncology) for Physician 
Assistant Students 

2 s.h. 

78.160 Internal Medicine Elective 

(Gastroenterology) for Physician 
Assistant Students 

2 s.h. 

78.153 Internal Medicine Elective 

(Hepatology) for Physician Assistant 
Students 

arr. 

76.162 Internal Medicine Elective 

(Rheumatology Disease) for Physician 
Assistant Students 

arr. 

78.605 Internal Medicine Elective 

(Pulmonary) for Physician Assistant 
Students 

arr. 

79.120 Gastroenterology Elective for 
Physician Assistant Students 

2 s.h. 

61.109 Osteopathy and Gynecology 

Elective for Physician Assistant 
Students 

arr. 

73.110 Ophthalmology Elective for 
Physician Assistant Students 

arr.

Admission 

To be eligible for admission to the 
physician assistant professional program, 
an applicant 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 advanced course in zoology 
or animal biology. 

It is strongly recommended, although 
not required, that applicants' backgrounds 
include analytical geometry, beginning 
calculus I and II, and physics. 

Applicants must have achieved at least a 
2.50 grade-point average on the last 60 
semester hours of college course work 
taken. The admissions committee gives 
special attention to applicants' performance in 
science courses. In the past, successful applicants 
have had a cumulative and science grade-point 
average of 3.0 or better. Applicants should 
have 125 semester hours of college credit, of 
which 55 semester hours were in the sciences, and 
approaching 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, in its 
discussions with the applicant, considers 
qualifications that are not formally 
required. Applicants with previous health 
care experience involving direct patient 
contact receive preferential consideration. 
The committee requests interviews with the 
most qualified applicants. 

Students are admitted on a first-come 
course of study that is applicable to a bachelor's 
degree, most commonly in the areas of 
biology, chemistry, or biochemistry. In this 
case, students who are not admitted to the 
physician assistant program can pursue the 
biology, chemistry, or biochemistry degree. 

Each new class begins the last week in May. 
Applications are accepted beginning 
each year in advance, and close January 15. 
Each applicant must complete the Physician:
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 sub-specialty 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 credits in community medicine, epidemiology, environmental health, biostatistics, and preventive medicine, and 56 semester hours of courses constituting the standard core curricula 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.

Following 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 I.S. General Test is also required. The Office of Admissions evaluates each applicant's qualifications to ensure that 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

1171 Physician Assistant Clinical Second Year

1172 Seminar for Physician Assistant Students

1173 Introduction to the Medical History and Physical Examination for Physician Assistant Students

1174 Biochemistry for Physician Assistant Students

BIOCHEMISTRY

Head: Alan G. Goodridge

Professors: Arthur A. Forney, Thomas W. Caveny, John E. Eeden, Alan G. Goodridge, Bob Massengale, Steve W. Hopp, Peter Raskind, Arthur A. Specr, Laura C. Stegall, Eam Stoffergen, Charles A. Swanson, Joseph T. M. and Student

Assistant professors: Clarence P. Reis, George Johnston, Joseph J. Reis, Generation Student

Associate professors: Alice R. Bubu, Gene F. traffic

1175 Biochemistry for Physician Assistant Students

Bachelor's in biochemistry, clinical-pathological medicine, environmental health, environmental medicine, and public health emphasis on application of skills to disease control and clinical prevention. Open only to students in the Physician Assistant Program.

1176 Biochemistry for Physician Assistant Students

Bachelor's in biochemistry, clinical-pathological medicine, environmental health, environmental medicine, and public health emphasis on application of skills to disease control and clinical prevention. Open only to students in the Physician Assistant Program.

Research Interests

The department's current research interests include the study of protein structure and function, polysaccharide structure and function, and the regulation of gene expression and recombination, mechanisms of protein biosynthesis and processing, membrane structure, determination of 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, Pharmacology, Physiology and Biophysics. Almost all of 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 interaction between research groups. These include the Protein Structure Facility, Electron Microscopy Facility, and Fermentation
are seen at the nearby Veterans Affairs Medical Center. 

Vocational opportunities are available for fourth-year medical students, including further patient care, diagnostic, and research experiences, and special studies.

Courses

501 Clinical Dermatology
Basic dermatology for the third-year medical student.

502 Dermatology Electives
Electives.

504 Research in Dermatology
Research projects, individual study.

505 Dermatology Electives for Physician Assistants
Electives.

5099 Special Studies on Campus
Electives.

DIETETIC INTERNSHIP

Director: Rose Ann Nogtyr
Internship director: Suzanne Davis Krouse
Assistant internship director: Marilyn Dupaty

The University of Iowa Hospitals and Clinics offers a Dietetic Internship Program that graduates qualified to take the American Dietetic Association (ADA) registration examination. The program is fully accredited by the ADA. Clinical experiences and food service system managers of The United Center for Iowa Hospitals and Clinics Dietary Department provide the clinical teaching for the program. Courses in the program are administered by the University of Iowa College of Medicine. The following courses are required:

521-201 Dietetics Seminar 2 a.h.
521-202-204 Clinical Dietetics 4-8 a.h.
521-206-209 Projects in Dietetics 2 a.h.
521-210 Hospital Dietary Administration 4-8 a.h.
691-501 Principles of Human Pathology 1 s.h.
691-502 Nutrition 1 s.h.
521-505 Bacteriology and Food Service Administration 2 s.h.

Students generally complete the program, with 22 semester hours of graduate credit. The University of Iowa Hospitals and Clinics awards a certificate of graduates of the program. Credit earned in the program may be applied toward an advanced degree. Approximately half of the graduates of the program go on to complete advanced degree programs, most typically the master’s degree in preventive medicine, biostatistics, or administration.

American Dietetic Association and University of Iowa Graduate College requirements for admission to the program include the bachelor’s degree with a strong background in food and nutrition, food service management, and basic sciences.

Students must enter the program in the fall semester. The postgraduate deadline for application is February 18.

The University of Iowa Hospitals and Clinics pays an honorarium stipend that covers additional living expenses.

For descriptions of programs courses, see “Nondepartmental Courses” in the College of Medicine introductory section of the Catalog.

FAMILY PRACTICE

Head: Charles E. Drillock
Professor: Charles E. Drillock, Joan M. Smith, (Internal Medicine) George W. Wilkins
Assistant professor: Ted B. Walters
Assistant professor: Elizabeth A. Brown, Craig L. Ogale, David M. Rosenfeld
Assistant professor: David Keenan, Ralph Kondee, Lawrence Kostick, George C. Salleis
Clinical professor: Robert T. Howard
Clinical associate professor: Gerald D. Love
Clinical associate professor: Gerald D. Love
Clinical associate professor: James F. Stiles, Robert L. Swenson, Donald J. Thoener, George J. UI

Meetings: Monday, 8 a.m., Rm 207, 3rd floor, David C. Kraftki, Donald L. Zerbe, R.D., E. Wolfer, Jr.

The Family Practice Program 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 B.D.E. elective senior rotations give students opportunities to make contact with patients in various primary care settings and to work in affiliated hospitals or connected facilities, and in the department’s model office on the University campus.

In preceptorship with selected family physicians throughout the state. There is also ample opportunity for independent study during the third year, and an international health care elective offers exposure to primary health care 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 prepares physicians to provide continuing and comprehensive care to the total family unit, using a concept of care that integrates 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 individual needs. It includes a broad spectrum of electives in internal medicine, pediatrics, obstetrics and gynecology, psychiatry, medical and surgical specialties, and public health.

During the first year, a large portion of the program is spent 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 spend increased time at the Family Practice Center and at the University of Iowa Hospitals and Clinics.

Facilities

The department 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 the resident or he is on leave or he is in the training program. The program principles of practice management, including providing administrative, decision making, patient record and bookkeeping procedures, and chart auditing methodologies required to manage a private practice.

115105 Human Structure in Medicine 1 s.h.
Weekly meeting of small groups of students for didactic instruction in gross and histologic structures. Cross listed course numbers: 115105

115015 Principles of Family Medicine 3 s.h.
Students will develop a comprehensive, critical thinking approach to problems they will encounter in practice. The course is designed to provide students with an understanding of the principles that underlie the practice of medicine, and the ability to synthesize information and make judgments on a variety of disease processes affecting practice of primary care medicine. Includes discussion of recent and historical research affecting practice of primary care medicine. Includes discussion of current practice. Three hours of clinical experience are offered, written, complete an individual project on a subject relevant to family medicine.

115035 Services of Human Dismemberment a.

115037 Practical Clinical Virology 3 s.h.
Clinical diagnosis, laboratory and dental workers to fulfill specific needs of patients in hospital and outpatient setting. Cross listed: 115037

152000 Preventive Medicine 3 s.h.
Preventive medicine for residents in the family practice program. Cross listed: 152000

154001 Family Practice 4 s.h.
Clinical experience to become familiar with family medicine, pediatrics, and gynecology.

154041 Family Practice/Clinical Psychology 4 s.h.
Clinical experience to become familiar with family medicine, pediatrics, and gynecology. Cross listed: 154041
The 30-semester-hour curriculum includes the following required courses:

- 80:100 Executive Seminar Series 6 s.h.
- 80:101 Introduction to Health Care Organization 3 s.h.
- 80:201 Health Care Management 3 s.h.
- 80:355 Issues in Health Management and Policy 3 s.h.
- 80:212 Intermediate Micro-Economic Theory 3 s.h.
- 80:213 Health Economics 2 s.h.
- 80:216 Financial Management of Health Institutions 3 s.h.
- 80:219 Managerial Decision Support Systems 3 s.h.
- 80:255 Legal Aspects of Health and Medical Care 3 s.h.
- 80:192 Financial Accounting—M.B.A. 3 s.h.
- 80:194 Managerial Finance—M.B.A. 3 s.h.
- 80:196 Marketing Management—M.B.A. 3 s.h.
- 80:197 Quantitative Methods—M.B.A. 3 s.h.
- 80:271 Statistical Methods—M.B.A. 3 s.h.
- Electives* 16 s.h.

*At least 9 of these 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 729 contact hours are required by the State of Iowa for licensing as a nursing home administrator. Residence hours may be completed throughout the entire program of study. The residency requirement may be satisfied during the intervening summer periods and at the conclusion of the 30-credit-hour program.**

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. A 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 a five-year program in hospital and health administration. The option, which was launched with a grant from the Kellogg Foundation, enables qualified students to complete their bachelor's degree and master's degree 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 semester 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 normally 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 resulting in 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 offered include 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**

Most students choose to complement their academic training with an administrative fellowship or residency. Such experiences afford a valuable means of discovering, developing, and demonstrating practical management techniques and skills. The programs take 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 90 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 a problem 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 Care Services Management and Policy**
  - 80:252 The Politics of Health Policy
  - 80:253 Planning for Health Policy
  - 80:253 Management Health Systems Management
  - 80:255 Seminar in Contemporary Health Issues

* **Research Methodology and Statistics**
  - 80:251 Health Services Research I
  - 80:252 Health Services Research II
  - 80:253 Independent Research Project

* **Advanced Statistical Techniques**
  - 80:256 The Politics of Health Policy
  - 80:253 Planning for Health Policy
  - 80:253 Management Health Systems Management
  - 80:255 Seminar in Contemporary Health Issues

* **Research Methodology and Statistics**
  - 80:251 Health Services Research I
  - 80:252 Health Services Research II
  - 80:253 Independent Research Project

* **Sociology**
  - 80:251 Health Services Research I
  - 80:252 Health Services Research II
  - 80:253 Independent Research Project

* **Minor**
  - Students must complete at least 12 semester hours in a discipline such as sociology, political science, social policy, management science, or economics.
Alumni Association

An active alumni association supports the program in a number of ways, including curriculum consultation, continuing education, research, and health development. The association also functions as a network for persons entering the profession. Alumni serve as visiting faculty consultants, as well as preceptors for residences and fellowships.

Each fall the program sponsors the Alumni 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 symposia 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 from 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 550 are preferred. Courses in finance, statistics, and computer science are strongly recommended. All applicants are required to submit writing samples, transcripts, 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 management projects. Research assistants work 10 to 20 hours per week and must apply for reappointment each semester. Appointment as a research assistant provides a stipend and enables nonresident students to minimize tuition rates.

In addition to these student financial aid programs, there exist 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 (CHSR), the research division of the Graduate Program in Hospital and Health Administration since 1951, is the University's wide local focus for a broad-based program of health services research.

With the coordination and support of the CHSR, faculty and staff work on college and departments throughout the University to investigate the organization, delivery, efficiency, and financing of health care services. CHSR members pursue a broad spectrum of perspectives and disciplines, including management science, health care organization; economics, geography, organizational behavior, psychology, operations research, sociology, preventive medicine and environmental health, health policy and community lifestyle, nursing, and clinical medicine.

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 conferences, insurance industry, 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 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

30-100 Executive Seminar Series 6-10 hours

Introduction and management of health care services that serve academic health centers, governmental agencies, health maintenance organizations, managed care companies, and health care consulting firms. Focus is on current trends and issues affecting the health care field.

30-101 Introduction to Health Care Organization and Management 3 hours

Basic organizational arrangements of health services in the United States; awareness of political, social, psychological, and economic forces that shape health services' environment of delivery, services, controls and types of financial resources available, methods of financing government-regulated private sector. S: fall (115). J: spring (117). Summer (118).

30-201 Health Care Management 3 hours

Introduction to principles of leadership, goal setting, decision making, and financial management as they apply to health care organizations. Includes lectures, assignments, class projects, in-class participation, and an oral examination.

80-002 Hospital Organization and Management 3 hours

Interactions between management and stakeholders in health care organizations.
MEDICAL SCIENTIST TRAINING PROGRAM

Director: Robert E. Prelow (Physiology and Biophysics)
Associate Director: William Johnson
Associate Director for clinical studies: Joseph A. Schwartz (Virology)

The Iowa Medical Scientist Training Program is a combined M.D./Ph.D. degree program that prepares careers in research in academic medicine, with emphasis on preclinical and clinical research. To accomplish this, the program provides a unique opportunity for integrated 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 last two years of the program, trainees are associated primarily with the College of Medicine for the basic sciences and introductory clinical portions of their curriculum. The basic science core of the last three quarters consists of formal courses in biochemistry, histology, anatomy, embryology, histotechnology, physiology, microbiology, neurosciences, general and systemic pathology, pharmacology, and preventive medicine. These courses provide the language and organizing concepts of the preclinical sciences that are the foundation for subsequent training in both research and clinical medicine.

During the summer between the first and second years, trainees engage in research under the supervision of a member of the program faculty. Entering trainees also may choose to do research during the summer before their first year.

In the second semester of the second year, trainees begin to receive formal medical science sequence that provides instruction and practice in medical history taking, physical diagnosis, and laboratory diagnosis, as well as exposure to 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 the multiple responsibilities of the medical care system.

Trainees maintain contact with clinical medicine during the graduate phase of the program through participation in weekly clinical conferences and various clinical activities.

Trainees then live through—as and if necessary—take on the grand challenges of graduate careers as independent investigators. Graduate training is supervised by departmental faculty and is pursued with rigor and standards applied to all doctoral scientists at The University of Iowa.

Three-year trainees take advanced courses while defining their selection of a thesis problem and advisor. With completion of the necessary qualifying examinations, trainees focus on original research, the essential requirement for the doctoral degree. While it is not possible at this stage to predict the amount of time this segment of the program will require, most trainees complete the Ph.D. research and thesis defense in three to five years.

Immediately after completing graduate study, trainees report to the College of Medicine to begin the final year of clinical clerkships. They return to the clinical environment with a wealth of information and experience in laboratory science that can be applied to problems of human disease, and as the first year progresses, they review and develop the clinical skills they began in the second year of the program. After completing this clerkship year, trainees receive the M.D. and Ph.D. degrees.

Financial Aid

Trainees admitted to the first year of the program receive stipends and tuition awards provided by a Medical Science Training Program grant from the National Institutes of Health (NIH) to The University of Iowa. Support from this grant and/or institutional sources' contributions during the subsequent three to five years has provided the trainee's achievement and progress remains satisfactory. Support for trainees admitted to advanced standing in the program is arranged on an individual basis.

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 demonstrated by productive research experience as undergraduates. Applicants are accepted from students who request admission to the first year of the program. Consideration is also given to applications 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 (AMCAS). Program applicants should submit AMCAS to forward their credentials to the College of Medicine (S124) as soon as possible after June 15. At the same time, applicants should request a separate Medical Scientist Training Program Application from the program office, 5372 Rossrow Science Building, The University of Iowa, Iowa City, Iowa 52242. Applications to the Medical Scientist Training Programs are reviewed by the program selection committee after the AMCAS applications are received.

The selection process for this program is December 1. Applications should be submitted early as possible to locate state review by both the College of Medicine and the program selection committee. Final consideration is given to all applicants regardless of their state of residence.

Courses

59311 NSIP Summer Research
59312 NSIP Clinical Conference

Microbiology

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.
Seven areas are included in the program: bacteriology, parasitic helminthology, mycology, virology, immunology, microbial physiology and biotechnology, and clinical microbiology. Several of these specialized areas involve interdisciplinary training within and outside the Graduate School, so students receive broad experiences during their course of study.

Students working for the Ph.D. degree may obtain an M.S. degree following their graduate work or proceed directly toward the Ph.D. All students admitted as candidates for advanced degrees are expected to register in departmental teaching.

Incoming students choose a research supervisor who serves as chair of their advisory committee. This committee assists students in planning a program of study and, from time to time, reviews students' progress in research.

The department cooperates with other departments in the various colleges on campus, allowing ample opportunity for students to avail themselves of diverse course offerings, seminars, and research programs. For example, courses and seminars in clinical laboratory microbiology, immunology, genetics, molecular and cellular biology, and electron microscopy are taught in an interdisciplinary basis.

Master of Science

Candidates for the M.S. degree are required to successfully complete at least 30 credit hours of graduate coursework in microbiology. At least 24 of these credit hours must be in advanced courses. In addition to the Graduate College regulations, a student must complete 21 credit hours in the departmental M.S. program.

Courses

Microbiology majors may not use 61210 to fulfill the semester hour requirement for Diet degree.

61200 Comparative Animal Taxonomy 3.0 h.

61230 Medical Microbiology 3.0 h.

61210 Medical Microbiology 3.0 h.

61310 Medical Microbiology 3.0 h.

61312 Medical Microbiology 3.0 h.

61315 Medical Microbiology 3.0 h.

61320 Medical Microbiology 3.0 h.

61340 Medical Microbiology 3.0 h.

61350 Medical Microbiology 3.0 h.

61360 Medical Microbiology 3.0 h.

61370 Medical Microbiology 3.0 h.

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Doctor of Philosophy

The minimum course requirements for the Ph.D. are one course in each of the seven subspecialties (of the seven subspecialties available in microbiology) or 75 semester hours of course work in two different areas. Students may substitute a course taken previously (at The University of Iowa or elsewhere) for the course requirements, upon obtaining approval from the Ph.D. committee. Students must also pass a comprehensive examination and write a thesis based on their own research. The thesis must be defended successfully in an oral examination.

Facilities

The department houses the Bowen Science Building with the Departments of Anatomy, Biochemistry, Pharmacology, and Physiology and Biophysics. Laboratory space and modern equipment are available for teaching and research.

Admission

Prospective graduate students should become familiar with the general advisement requirements of the Graduate College. Departmental requirements include a review and formal vote by the faculty before students are admitted. Before beginning graduate work, students must have completed courses in biology, chemistry (general and organic), mathematics including calculus, and physics. Applicants admitted without the above course work must take it during the first year of graduate school. Students should have a grade-point average of 2.70 or better to be admitted to the graduate program in microbiology.

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The Molecular Biology Ph.D. Program provides comprehensive 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 series of core courses in biochemistry, cell biology, molecular biology, and developmental 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 techniques, the student is provided with a variety of options for specialization in particular areas of interest.

Four courses are required of all students:
19.241 Biophysical Chemistry I
19.242 Biochemistry
19.291 Molecular Biology I
19.292 Molecular Biology II

It is strongly recommended that students choose these courses at the beginning of their first year, thereby ensuring that they are completed by the end of the first year.

In addition to these core courses, students are required to complete at least 8 seminar hours in lower or more advanced 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 the University of Iowa fellowships and graduate research assistantships.

Facilities
Training is conducted primarily in laboratories and teaching facilities in the Departments of Biochemistry, Biology, Microbiology, and Physiology and Biophysics—which offer graduate degrees, and the Department of Internal Medicine, Pathology, and Pediatrics, whose focus is clinical, faculty laboratories, and central research facilities available to students who provide access to the latest state-of-the-art research equipment, including an octomicrochopine synthesizer and an automated DNA sequence analysis apparatus.

Admission
Individuals seeking admission materials and information about applications and postdoctoral training in molecular biology should contact Molecular Biology Ph.D. Program, 5572 Sayles Science Building, The University of Iowa, Iowa City, Iowa 52242.
Financial Aid
Graduate students in the Neuroscience Ph.D. Program are eligible for stipends and tuition support, including training grants from the National Institutes of Health and the National Institute of Mental Health, and University fellowships and graduate research assistantships.

Facilities
Training is conducted primarily in the laboratories and teaching facilities of the graduate departments of Anatomy, Biology, Biochemistry, Pharmacology, Physiology, and Psychology, and the clinical departments of Neurology and Psychiatry. Students are faculty laboratories and central research facilities for microstructure analysis, histochemistry and immunocytochemistry, electrophysiology, fluorescence-activated cell sorting, cellular and subcellular biopsy, cell, tissue, and organ culture, current and classical conditioning, molecular biology, and behavioral genetics.

Admission
Information about predictored and unsolicited training opportunities in the neuroscience is available from the Neuroscience Program Office, 5012 Rossns Building, The University of Iowa, Iowa City, IA 52242.

Courses
127-101 Introduction to Neuroscience 2 S.H.
127-102 Introduction to Neurobiology 2 S.H.
127-103 Introduction to Neurochemistry 2 S.H.
127-104 Introduction to Neuroimmunology 2 S.H.
127-105 Introduction to Neuroendocrinology 2 S.H.
127-106 Introduction to Neurotransmission 2 S.H.
127-107 Introduction to Neuroimaging 2 S.H.
127-108 Introduction to Neurosurgery 2 S.H.
127-109 Introduction to Neurosensory 2 S.H.
127-110 Introduction to Neurology 2 S.H.
127-111 Introduction to Neuropsychology 2 S.H.
127-112 Introduction to Neuropsychopharmacology 2 S.H.
127-113 Introduction to Neuropsychosomatics 2 S.H.
127-114 Introduction to Neuroeconomics 2 S.H.
127-115 Introduction to Neuroeducation 2 S.H.
127-116 Introduction to Neuroethics 2 S.H.
127-117 Introduction to Neuroinformatics 2 S.H.
127-118 Introduction to Neuroimmunology 2 S.H.
127-119 Introduction to Neuroimmunomodulation 2 S.H.
127-120 Introduction to Neuroimmunotherapy 2 S.H.
127-121 Introduction to Neuroimmunotolerance 2 S.H.
127-122 Introduction to Neuroimmunopathology 2 S.H.
127-123 Introduction to Neuroimmunogenetics 2 S.H.
127-124 Introduction to Neuroimmunohematology 2 S.H.
127-125 Introduction to Neuroimmunobiotechnology 2 S.H.
127-126 Introduction to Neuroimmunotechnology 2 S.H.
127-127 Introduction to Neuroimmunotherapy 2 S.H.
127-128 Introduction to Neuroimmunomodulation 2 S.H.
127-129 Introduction to Neuroimmunotherapy 2 S.H.
127-130 Introduction to Neuroimmunotolerance 2 S.H.
127-131 Introduction to Neuroimmunopathology 2 S.H.
127-132 Introduction to Neuroimmunogenetics 2 S.H.
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127-153 Introduction to Neuroimmunogenetics 2 S.H.
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127-182 Introduction to Neuroimmunohematology 2 S.H.
127-183 Introduction to Neuroimmunobiotechnology 2 S.H.
127-184 Introduction to Neuroimmunotechnology 2 S.H.
127-185 Introduction to Neuroimmunotherapy 2 S.H.
127-186 Introduction to Neuroimmunotolerance 2 S.H.
127-187 Introduction to Neuroimmunopathology 2 S.H.
127-188 Introduction to Neuroimmunogenetics 2 S.H.
127-189 Introduction to Neuroimmunohematology 2 S.H.
127-190 Introduction to Neuroimmunobiotechnology 2 S.H.
127-191 Introduction to Neuroimmunotechnology 2 S.H.
127-192 Introduction to Neuroimmunotherapy 2 S.H.
127-193 Introduction to Neuroimmunotolerance 2 S.H.
127-194 Introduction to Neuroimmunopathology 2 S.H.
127-195 Introduction to Neuroimmunogenetics 2 S.H.
127-196 Introduction to Neuroimmunohematology 2 S.H.
127-197 Introduction to Neuroimmunobiotechnology 2 S.H.
127-198 Introduction to Neuroimmunotechnology 2 S.H.
127-199 Introduction to Neuroimmunotherapy 2 S.H.
127-200 Introduction to Neuroimmunotolerance 2 S.H.
127-201 Introduction to Neuroimmunopathology 2 S.H.
127-202 Introduction to Neuroimmunogenetics 2 S.H.
127-203 Introduction to Neuroimmunohematology 2 S.H.
ORTHOPAEDIC SURGERY

Head: Reginald L. Cooper

Program Directors: Peter A. Stetson, Richard A. Brand, Thomas B. Sweeney, Joseph A. David, Charles F. Chen, Reginald L. Cooper, George Y. D. Khoury, Ayad M. Warsame

Program Coordinator: Michael A. Brezis, Ignacio V. Pavlov


Clinical Assistant Professors: Jonathan R. L. Rosenthal, J. Lawrence M. Mar, James L. Wobst, David J. Davis, Robert J. Berenson, Edward Y. Chou

Program Description: The Department of Orthopaedic Surgery offers a four-year integrated clinical program in which second- and third-year residents participate simultaneously in inpatient and outpatient care, surgery, and science related to the musculoskeletal system. 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 Resident Matching Program. 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, emergency care, anesthesia, and other services. By the following year, residents gain experience in trauma, children’s orthopaedics, adult orthopaedics, musculoskeletal disorders, rehabilitation, sports medicine, orthotics, rheumatology, and basic science as it relates to orthopaedics. They take specialized courses in anatomy, bone histology, biochemistry, physiology, and pathology.

A weekly seminar covers biomechanics, kinetics, 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 or in a basic science department.

Laboratories

The orthopaedic laboratories deal with problems in disease major subject areas:

-Biochemistry—The biochemistry of musculoskeletal diseases, drug metabolism, and normal and altered cellular and subcellular processes.
-Neuromuscular—In conjunction with the College of Engineering, problems of the upper extremity biomechanics of the spine, hip, and joint total replacements.

Facilities

The department has a hospital in the Rust J. Copen Family Pavilion of the University of Iowa Hospitals and Clinics. It has the Iowa Orthopaedic Hospital, and the University of Iowa Hospitals and Clinics Centers for Health Science and Research. It is a member of the Medical College of Wisconsin, and the University of Iowa Hospitals and Clinics. It has a student body of 18,500 students per day. Approximately, 30 major operations are performed in the year under auspices of the department.

The department provides consulting service to University Hospitals Regional, Child Health Specialty Clinics, and two state schools for the mentally retarded.

Courses

61100 Orthopaedic Surgery Fundamentals of Orthopaedics, Anatomy, Physiology, and Biomechanics (4 hours)
61110 Clinical Orthopaedics (4 hours)
61120 Orthopaedic Radiology (4 hours)
61130 Orthopaedic Pathology (4 hours)
61140 Orthopaedic Surgery (4 hours)
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61970 Orthopaedic Surgery (4 hours)
61980 Orthopaedic Surgery (4 hours)
61990 Orthopaedic Surgery (4 hours)
OTOLARYNGOLOGY—HEAD AND NECK SURGERY

Head: Travis F. McCallie


Associate professor emeritus: John K. Smith, MD

Assistant professor: John L. Friend, Steve R. Gray

Research associate: Kerri E. Kelley, Francis K. Heiskell, Charles R. Levison, Nancy S. Tyce-Murray

Clinical associate professors: Thomas J. Benza, Carl J. Bette, Gary E. Hebsman

Clinical assistant professor: Peter L. Ali

The department provides one of the oldest and largest otolaryngology-head and neck surgery training programs in the world. It currently has a full-time faculty of 13, including several members from plastic surgery, audiology, speech pathology and audiology, and dentistry (odontologists and prosthodontics).

The department's main objective is to provide a high-level instructional program in otolaryngology-head and neck surgery for medical students and residents. To maintain a working program, the department's faculty and staff carry a large patient load in head and neck oncology, head and neck plastic reconstructive surgery, facial trauma, cranial base congenital defects (such as cleft lip and palate) and cleft palate surgery, pediatric and neurologic hearing problems, voice problems, perforated eardrum, surgery for deafness (including cochlear implants), and all patients usually present various otologic problems.

There are eight divisions in the department that make this program comprehensive: otology and neurotology, plastic and reconstructive surgery of the head and neck, rhinology, pediatric otolaryngology, cranial base congenital defects, speech pathology and audiology, and research.

Another major objective of the department is to foster research programs designed to yield new knowledge in the field and provide material for student and resident research training.

There are several large-scale research programs within the department in vestibular neurophysiology, CIFF palate and other craniofacial defects, head and neck oncology, cochlear implants, mastoid physiology, facial nerve function, craniofacial reconstructive surgery, anatomy of the aorta, bone, neurophysiology, and aspiration in ear disease, electrophysiology of the inner ear, and psychoacoustics.

Many of these research programs receive support and private financial support.

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 training. The basic science lectures and literary studies are conducted during the first two years and one-half months of residence.

After passing oral and written examinations, students enter the clinical phase of the course, which includes supervised clinical and operative work, clinical conferences, and seminars pertinent to the practice of otolaryngology and its related fields.

Courses

6111 Clinical Otolaryngology

6110 General Internship (Clinical)

6110 Head and Neck Oncology

6110 Basic Pathology of Plastic and Reconstructive Surgery

6110 Pediatric Otolaryngology

6110 Basic Otolaryngologic Science

6110 Rhinologic Anatomy and Physiology; Surgical Anatomy of Head and Neck; Vestibular Physiology; Facial Nerve Physiology; Audiology; Otology; Radiology; Speech Pathology and Audiology; Neurology; Gastrointestinal Neoplasms; Endocrinology; Dermatology; Gynecology; Otolaryngologic Pathology; Otolaryngologic Surgery

6132 Advanced Anatomy for Head and Neck Surgery

6141 Rotund Treatment of Nasal and Sinus Disease

6151 Vestibular Physiology and Pathology

6151 Rhinologic Mucosal Disease

6151 Nasal Obstruction

6151 Structural Disorders of Otolaryngologic Interest

6151 Salivary Gland Disease

6151 Disorders of Hypothalamo-Pituitary Axis

6151 Special Studies in Otolaryngology

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 physiology, biochemistry, biology, and medical technology, and from students with medical and dental degrees.

The M.S. program is flexible, but the department emphasizes clinical education. In some cases, students may be allowed to enroll in the graduate program in social work, psychology, and education.

M.S. students participate in teaching, patient care, and research through the instructional programs of the department, the voice 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 combined verbal and quantitative scores of at least 1200, and a personal interview. A brochure describing departmental course requirements and giving examples of the major academic tracks is available on request.

M.D.
Residency Program
The department is approved for 21 residency positions in pathology covering a training span of up to five years. The programs are designed to meet the patient care obligations of The University of Iowa Hospitals and Clinics and the Iowa City Veterans Affairs Medical Center. There is a systematic rotation through the various laboratory services, including surgical pathology, autopsies, cytopathology, forensic, clinical, chemical, clinical microbiology, hematology, immunopharmacology, 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 biochemists and chemists. This program is approved by the American Board of Clinical Chemistry.

In addition, the department provides five 12-month externships and a variable number of clerkships for preclinical students in any of the areas of anatomical and clinical pathology.

Postdoctoral Training
The Department of Pathology offers postdoctoral programs in hemopathology, neuropathology, and surgical pathology for physicians who have completed at least two years of residency training in pathology. The programs are designed to provide the education of one year of diagnostic work and one year of laboratory research in basic hemopathology.

The department also provides postdoctoral training in immunology, molecular biology, biotechnology of hematology, cancer biology, and clinical immunology, 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 the 831,000-square-foot center of the Clinical Research Center, Medical Laboratories, and at the Veterans Affairs Medical Center. The department is well-equipped to carry out the sophisticated technologies of molecular cell and molecular pathology. Also available are the College of Medicine Core Laboratories for performing postgraduate studies, histotechnology, flow cytometry, and laboratory animal care.

Courses
60000 Cooperative Education Internship 9.0 h.
99000 Workshops in Pathology 1.0 h.
60100 Introduction to Clinical Laboratory Medicine 1.0 h.
60900 Antimicrobial Resistance in Clinical Laboratory Medicine 2.0 h.
60100 Introduction to Clinical Laboratory Medicine 1.0 h.
61900 Special Clinical Laboratory Medicine 2.0 h.
62200 Clinical Microbiology for Physicians 2.0 h.
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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 pioceded the offering of medical students with little or no science background. The international health program is: 72:220 Drugs, Their Nature, Action, and Use. The department emphasizes the mechanisms of drug action and augments students' background for minimal detoxification of the various 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.

Requirements 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. Details of the program are to be provided by the Department of Pharmacology. Any of the course requirements may be waived at the discretion of the instructor. The departmental faculty agree that the trainees have met them satisfactorily at a prior time.

**PharmD Program**

PharmD program is required for 2 years of training. The program is mandatory unless specifically waived by the Department of Pharmacology. Any of the course requirements may be waived at the discretion of the instructor. The departmental faculty agree that the trainees have met them satisfactorily at a prior time.

**Courses**

Course Title | Credits | Description
--- | --- | ---
Th1100 Chemistry I | 3.0h | Preparation and selection of approach to drug design and synthesis of drug-like molecules.
Th1112 Pharmacology I | 3.0h | Principles of pharmacology, including pharmacodynamics and pharmacokinetics. Emphasis on drug design and synthesis of drug-like molecules.
Th1121 Pharmacology II | 3.0h | Advanced pharmacology, including pharmacodynamics and pharmacokinetics. Emphasis on drug design and synthesis of drug-like molecules.
Th1130 Pharmacology III | 3.0h | Principles of pharmacology, including pharmacodynamics and pharmacokinetics. Emphasis on drug design and synthesis of drug-like molecules.
Th1140 Pharmacology IV | 3.0h | Advanced pharmacology, including pharmacodynamics and pharmacokinetics. Emphasis on drug design and synthesis of drug-like molecules.

**Doctor of Philosophy**

Course requirements for the Ph.D. in pharmacology are as follows:

- Th1100 Chemistry I
- Th1112 Pharmacology I
- Th1121 Pharmacology II
- Th1130 Pharmacology III
- Th1140 Pharmacology IV

**Financial Aid**

Financial aid is available for all predoctoral and postdoctoral students in pharmacology.

**Notes**

Course Title | Credits | Description
--- | --- | ---
Th1100 Chemistry I | 3.0h | Preparation and selection of approach to drug design and synthesis of drug-like molecules.
Th1112 Pharmacology I | 3.0h | Principles of pharmacology, including pharmacodynamics and pharmacokinetics. Emphasis on drug design and synthesis of drug-like molecules.
Th1121 Pharmacology II | 3.0h | Advanced pharmacology, including pharmacodynamics and pharmacokinetics. Emphasis on drug design and synthesis of drug-like molecules.
Th1130 Pharmacology III | 3.0h | Principles of pharmacology, including pharmacodynamics and pharmacokinetics. Emphasis on drug design and synthesis of drug-like molecules.
Th1140 Pharmacology IV | 3.0h | Advanced pharmacology, including pharmacodynamics and pharmacokinetics. Emphasis on drug design and synthesis of drug-like molecules.
PHYSICAL THERAPY

See "Division of Associated Medical Sciences."

PHYSICIAN ASSISTANT PROGRAM

See "Division of Associated Medical Sciences."

PHYSIOLOGY AND BIOPHYSICS

Hans Robert E. Falls, Ph.D.

Professorships: Financial M. Altman (Internal Medicine), Harold P. Campbell, Robert S. Fallows, Carl V. Gaudin (Genetics Science), Richard A. Major, Michael J. Ratch (Divine Sciences).

Charles E. Waster

Professor emeritus: Edgar P. Folk, Jr.

Associate professor: Jeffrey Botvin, Beryl A. Jones.

Associate professors emeriti: Charles J. Bray, Gordon S. Wein.


Graduate degrees offered: M.S., Ph.D. in Physiology and Biophysics.

The Department of Physiology and Biophysics offers graduate study leading to the Doctor of Philosophy degree; provides instruction in physiology and biophysics for medical, dental, pharmacy, nursing, and other health professional students; participates in the Medical Student Training Program; and maintains the 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 cardiovascular pharmacology and physiology.

Graduate Program

The graduate program in physiology and biophysics is designed to provide broad general knowledge of fundamental 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 biophysics. The program focuses on the development of modern research skills and their application in the context of original dissertation research.

Students are advised by the director of graduate studies, who provides guidance in the planning of a program of formal course work and an introduction to research techniques of the departmental faculty. The core curriculum includes two semesters of cell biology, two semesters of either molecular biology or neurophysiology, and one semester of medical physiology. The department also offers advanced, specialized courses in mammalian physiology, endocrine physiology, environmental and exercise physiology, and pharmacology. Students elect to take courses in other departments appropriate to their individual research objectives.

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 degree candidates have supervised 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 stipends support from the Department of Physiology and Biophysics. Support is renewed annually based on satisfactory academic progress.

Facilities

The Department of Physiology and Biophysics occupies two floors devoted to research and teaching in the Bowser Science Building and has additional laboratory facilities in the Eleventh Medical Research Building and at the nearby Cardiovascular Research Center. In addition to specialized equipment for research laboratories, the department has extensive microcomputer facilities with direct access to University minicomputers and mainframes and a large computer imaging facility. The department also provides fluorescence microscopy, electron microscopy, and equipment for cell culture and molecular biology. Graduate students are provided with 20 study space within the departmental library, which supplies the resources available at the Harris Library for the Health Sciences.

Admission

Applicants for graduate admission must complete undergraduate studies in an accredited institution prior to matriculation and must meet all overall science grade-point average of at least 3.0, coupled with a combined verbal and quantitative score higher than 1200 on the Graduate Record Examination (GRE). General Test. The appropriate prerequisite for graduate study in cellular and molecular physiology and biophysics is an undergraduate major in one of the following biological, chemical, physical, mathematical, or engineering sciences with appropriate college work in cell biology, genetics, physics, and chemistry and calculus.

Courses

1209 Introduction to Pharmacology - 1.5 credits

Prerequisites: none. Open to students pursuing a preclinical career. The course covers the principles, methods, and requirements of basic and applied pharmacology, with emphasis on the role of drugs in disease treatment.

1217 Tissue in Cellular and Molecular Biology - 1.5 credits

Research topics in cellular and molecular biology. Syllabus includes current research and recent advances in the structure and function of cells, tissues, and organisms, with an emphasis on the interaction of cellular and molecular processes. May be repeated, subject to approval of instructor and department. Offered in the fall semester of the academic year. (Prerequisite: Permission of instructor.)

1300 Clinical Pharmacology and Therapeutics Lecture Series - 2 credits

Reviews pharmacological approaches to disease of human beings. (Prerequisite: Consent of instructor.) Offered in the fall semester. (Prerequisite: Consent of instructor.)
Graduate Programs

The M.S. program in radiation biology emphasizes technical aspects and serves well as a minor field for students whose one major 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 completing the introductory course, students may specialize to a particular aspect of the field. The details of the program are built around previous training, interests, abilities, and career objectives. Some students elect to emphasize training in physical aspects, such as radiological physics or health physics, whereas others major in biological aspects. In either case a broad base, rather than complete specialization, is the goal.

In addition to formal lectures, radiation biology programs involve small-group conferences and discussions. Laboratory exercises are emphasized, and students have the opportunity to become familiar with many types of instruments and techniques. It is recommended that candidates for the Ph.D. have had some 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 semester of experience as teaching assistants in some 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 chairman and individual faculty members.

Undergraduate Study

Two courses, 71-302 Introduction to Biophysics and Radiation Biology, 71-399 Environmental and Radiological Health Physics, are open to undergraduate students in liberal arts or professional colleges. 71-310 is especially appropriate for students who want an overview of radiation's biological effects and its uses in our society. These courses also are of interest to students who plan to enter medicine, nuclear medicine technology, environmental health, or similar programs.

Radiation Biology

Director: James W. Osborne

Professor: Frank H. Hapgood, Chao, Richard L. DeSantis, James B. Chibnall, David H. Hannon, and James W. Osborne

Professor emeritus: Igor N. Shlyapnikov

Graduate admission: M.S., Ph.D. in Radiation Biology

The radiation biology program provides in-depth training and research experience in the study of the biological, chemical, and physical aspects of radiation and the theory and applications of radiobiology and radiology. It also stresses the importance of these areas to scientific research, clinical medicine, and the general public.

Facilities

The Radiation Research Laboratory has a variety of radiation sources, including a 12.7-MeV Curie Co-60 irradiator. Students and staff also have access to other radiation sources, such as the Cs-137 gamma source and the linear accelerators in the Department of Radiology, and the X-ray Machine of the Radiological Research Division of the Argonne National Laboratory. The Radiation Research Laboratory has a variety of radiation detection and counting instruments, including gamma and x-ray scintillation counters and a small animal whole-body counter.

The laboratory also has ultraviolet spectrophotometers, vehicle types of equipment for chromato-g Griffith and electron microscopy, an automatic cell counter and particle sorter, tissue culture facilities, and facilities for preparing histological sections of tissues—fixed or frozen—or autographs.

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

71-015 Introduction to Radiobiology and Radiology 4.0

Characteristics and biological effects of ionizing radiations, radiobiology of mammalian cells, medical applications of radiological, radiobiological and radiological physics. Consent of instructor required.

71-099 Environmental and Radiological Health Physics 4.0

Basic principles of atomic theory, properties of different known and potential radioactive elements, and biological and ecological properties of radioactive materials. Consent of instructor required.

71-340 Special Topics Advanced 1.0

Undergraduate programs:

Research and laboratory experience arranged with instructor for undergraduate principally interested in research radiobiology. Offered fall semesters. Consent of instructor required.

71-345 Special Topics Advanced 1.0

Undergraduate program:

Research and laboratory experience arranged with instructor for undergraduate principally interested in research radiobiology. Offered spring semesters. Consent of instructor required.

71-369 Seminar in Radiobiology Research 0.5

Research reports by students and faculty and by practitioners in the field. Consent of instructor required. Offered spring semesters.

71-370 Seminar in Radiobiology Research 0.5

Research reports by students and faculty and by practitioners in the field. Consent of instructor required. Offered spring semesters.
Urology

UROLOGY

Head: Richard D. Williams
Professor: Bernard Falcon, Charles E. Hardman
Assistant Professor: David D. Mackenzie, Richard J. Williams
Associate professor: William W. Champion
Assistant professor: James D. Smith

In addition to the areas of urinary tract stone and infection, diagnostic urology, and results of urinary tract obstruction, urology also includes urological pathology, urologic oncology, urologic endocrinology, and pediatric urology.

The Department of Urology of The University of Iowa College of Medicine offers courses in all these fields at undergraduate and graduate levels and in continuing education for the delivery of urologic care.

In the first year of the M.D. program, the department participates with several of the basic science departments in teaching urology-related to the basic sciences. The department participates with the Department of Microbiology in teaching and research in immunology as it relates to transplantation and cancer.

The Department of Urology participates actively in 50-113 Introduction to Clinical Medicine, which involves the entire second semester of second-year medicine. The department offers illustrative lectures and demonstrations concerning the diagnosis and treatment of diseases involving the genitourinary tract in the female and child.

In the third and fourth years of the curriculum in medicine, the department offers courses in diagnostic urology, urological oncology, and the entire field of urology. In the required third-year clerkship, the department offers the basic principles of urology, and in the fourth year it offers advanced elective courses of intensive study in these areas.

The department offers continuing education throughout the year for urologic and family practitioners. These activities are conducted for the senior staff whose interests include pediatric urology, reproductive physiology, urologic oncology, urinary tract stone, and prostatic diseases.

The department has earned international recognition for its studies of prostatic disease.

The urological laboratories conduct research and offer instruction in experimental urology and cellular immunology.

Courses

Course Title: Clinical Urology

Instructor: Richard D. Williams

The course covers normal and abnormal renal function, the anatomy and physiology of the urinary tract, theory of urinary tract disease, functional and theoretical aspects of renal disease, and the clinical aspects of renal disease. The course is designed for medical students and for those who have completed the introductory urology course.

Course Title: Clinical Urology

Instructor: Richard D. Williams

The course covers normal and abnormal renal function, the anatomy and physiology of the urinary tract, theory of urinary tract disease, functional and theoretical aspects of renal disease, and the clinical aspects of renal disease. The course is designed for medical students and for those who have completed the introductory urology course.

Course Title: Clinical Urology

Instructor: Richard D. Williams

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Practicing resuscitation on a mannequin in the nursing technology lab

Deans: Geraldine Felton
Deans emeriti: Myrtle Applewhite
Assistant deans, undergraduate studies and community affairs: Ginger McCollum
Assistant deans, clinical practice: Sally Nathan
Director, continuing nursing education: Kathleen Kelly
Director, nursing research development and utilization: Toni Tripp-Reiner
Director, student services: Carol Czupar
Professor emeritus: Kathleen Burckholder, Geraldine Felton, Joann McCloskey, Toni Tripp-Reiner, Barbara Thomas

Professor emeritus: Myrtle Applewhite, Eva Erickson, Rosemary McLaughlin, Hope Solmanson
Assistant professor: Trudy Gattis, Martha Craft
M. Patricia Diament, James Delle, Rae Fretts, Myra Frasier, Rose Marie Fiedler, Laura Hart, Margaret Marshall, Sharon McCall, Sandra Powell, Joan Brann, Elizabeth Swanson

Associate professor emeritus: Gladys Ivey, Carolee Kuehn, Phyllis Frenz, Martine Gould, Nancy Jordan, Mary Lynford, Anna E. Overland, Eliza H. Rasmussen

Assistant professors: Mary Slagel, Gloria Sukutani, Martha Capper, Carolyn Crowell, Constance Delany, Jackie Dennis, Michelle Elovson, Diane Garcia, Doris Glick, Mary Hirs, Berta Hirs, Marion Johnson, Kathleen Kelly, Lavon Neave, Sworg Lloyd, Patricia Miller, Paula Welby, Joyce Robersen, Lavonne Ruther, Beverly Saboe, Agnes Scott, Mary Stewart-Dornon, Kay Water

Assistant professors emeritas: Joelle Ams, Marie Holt, Mary Rock

Lecturers: Terry Jones, Mary M. Rojas, Joyce Jones, Sandra Beeghler, Sandra Bengquist, Teresa Busse, Joie Beach, Patricia Clason, Peter Smith, Cowen, Karen Culp, Linda Eshman, Karen Griffith, Vicki Haring, Jean Rose, Gertrude Jones, Lisa Stump Kelley, June Krugger, Norbert Markowitz, Jane McDonald, Sherry Miller, Judy Powers, Carla Rostell, Margaret Rostell, Julia Smith, Jeanne Tigg, Lizith Walmsley, Pamela Willard, Janet Williams, Susan Wilson, Mary Wilho, June Yang, Earle Zimble

Undergraduate degrees offered: B.S.N.
Graduate degrees offered: M.N., Ph.D. in Nursing
The College of Nursing is an integral part of The University of Iowa Health Center, dedicated to the health of the community through education, research, and patient care resources that have earned national 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 college 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 in 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 teaching. 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 undergraduate nursing program offers the advantages of full participation in general education and recreational activities of a highly diverse college environment. The program, like many others, a college or university background enables people not only to be prepared for a career, but to be able to understand a life 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 participate in a broad range of health promotion and teaching activities and to cooperate closely in any sector of the health care system. The nursing major provides a basis for nurses' roles in wellness and prevention, promotion of health, and in long-term care for chronic illnesses. 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 conduit of health care by organizing and facilitating the delivery of comprehensive care. The nurse provides appropriate 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-hour semester course of study consists of 75 semester hours of liberal arts General Education Requirement courses and supportive premajor courses, and 53 semester hours of course work in the nursing major. Students can expect to complete the program in four to five 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, deviations from health, and nursing intervention and are presented at progressive levels of complexity from the sophomore through the senior year. The curriculum reflects the current trend in health care delivery toward emphasis on nursing as a service provided both inside and outside hospitals. Students have clinical experiences that are selected from more than 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 courses approved by the University of Iowa; and

Cooperating state institutions and independent colleges that participate in the transfer plan include Iowa State University and the University of Northern Iowa; Upper Iowa University; Ritter College, Montmagny, Iowa; Luther, Clarke, Simpson, and Wartburg colleges; and participating community colleges 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; inclusion standards for transfers are the same as for all other College of Nursing applicants. Prospective transfer students who wish more information about the plan should contact the cooperating institution of their choice.

Cooperative Education Summer Clinical Internship

High-achieving undergraduates have the opportunity to participate in a skills through placement in a summer employment setting. Internships are available in hospitals, community health settings, and occupational health services in Iowa and surrounding states. This program affords 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 should contact the College of Nursing coordinator of the Cooperative Education Program, Nursing Internship Program, or the Office of Career Planning and Placement 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 course work 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 Aging Studies Program coordinator. See "Aging Studies Program" in the College of Liberal Arts section of the Catalog.

Honors Program

The University of Iowa College of Nursing Baccalaureate Honors Program provides seniors and independent study experience opportunities to honors students, and students must have completed the first two-year sequence of specific courses with at least a cumulative grade-point average of at least 3.25 and an overall grade-point average of 3.56. 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 substantiate students' essential nursing knowledge and application in various situations, and to provide students' specific strengths and weaknesses, providing a sense of direction for further study and a means for setting
Nursing

priorities; and help students choose effective and efficient plans for further study and review before they take the National Council on Licensure Examination for Registered Nurses.

The examination score is not computed in the course grade. Students may be offered a detailed reprint of the results of their examination and are given recommendations for self-directed study.

Registered Nurses

The R.N.-B.S.N. progression program offers registered nurses the opportunity to build on their nursing knowledge and experience base. The nursing major sequence is designed specifically for registered nurses, with a focus on nursing process and health assessment; community health care clinical settings; leadership, management, and research opportunities; nursing professionalism; and computer expertise. Each R.N.-B.S.N. student is assigned to a College of Nursing faculty member for continued academic advising and career 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 prerequisites are met, students may complete the R.N.-B.S.N. nursing major sequence in four years or three semesters in a sequence that includes three clinical and two nonclinical nursing courses. Students may enroll in and be designated on-site for Registered nurses planning to enter 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

College of Nursing students have their own Association of Nursing Students (ANS) and are also eligible for membership in the state and national associations of nursing students. ANS provides opportunities for professional growth and development in nursing. Student representatives are members of the Collegiate Activities Council at The University of Iowa and serve on the board 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 these requirements 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, two 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 38 semester hours completed in an accredited college.

Successful completion of all of the following courses: English, Mathematics, Biology, Sociology, Psychology, and a minimum grade point average of 2.20 on a 4.00 scale.

Preclinical Background

Students must complete the following requirements, in addition to the biological sciences core 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: biological chemistry, organic chemistry, general biology, animal biology, microbiology, human anatomy, human physiology, nutrition, psychology, sociology, anthropology, human development and behavior.

Standards

To be considered for admission to the College of Nursing, the applicant must have satisfactorily completed all college course work taken.

American College Tests

All applicants for admission to The University of Iowa must complete the American College Tests. For information on the selection to the American College Tests Program, Box 451, Iowa City, Iowa 52242.

Selection Factors

Submission of minimum admission requirements does not guarantee admission to the College of Nursing. Applicants 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 at least six months 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 coursework 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 nurse practitioner option 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:

96:200-201 Conceptual and Theoretical Foundations for Nursing 3 s.h.
96:204 Leadership in Nursing: Theory and Application 4 s.h.
96:205 Professional Seminar: Issues in Nursing 2 s.h.
96:210-211 Methods of Research in Nursing 5 s.h.
96:220-221 Nursing Administration: Process, Roles, and Strategies 6 s.h.
96:224 Nursing Administration Seminar 2 s.h.
96:224 Computer Applications for Advanced Administration Roles in Nursing 2 s.h.
Elective in business or hospital and health administration (96:152 may be optional). Thesis or Master's Project 2-4 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 minimum 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 (6 semester hours), and a professional issues seminar (2 semester hours).

Nursing Specialization
The specializations require 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, gerontological nursing, or community/family health nursing. Students may develop their area of specialization through their choices of course work and fieldwork experiences. For example, students who select adult health nursing as their area of specialization may choose experiences with patients in a longterm 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 advisors.

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 these roles 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 6-7 semester hours; students may choose their supporting coursework in an area related to their nursing specialization or role preparation interests.

Thesis/Master's Project
All master's degree 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 this 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 want 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
96:200 Conceptual and Theoretical Foundations for Nursing 3 s.h.
96:204 Leadership in Nursing: Theory and Application 5 s.h.
Supporting course 5 s.h.
Total 12 s.h.

Spring Semester
96:201 Conceptual and Theoretical Foundations for Nursing 3 s.h.
96:223 Nursing of Children: Health Promotion 4 s.h.
or 96:225 Nursing of Adults: Health Promotion 4 s.h.
or 96:231 Gerontological Nursing I 4 s.h.
or 96:254 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 Children: Responses to Illness 3 s.h.
or 96:227 Nursing of Adults: Responses to Illness 4 s.h.
or 96:230 Gerontological Nursing II 4 s.h.
or 96:255 Community/Family Health Nursing: Clinical Responses to Illness 4 s.h.
96:248 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 the graduate program in nursing through direct application to the University of Idaho 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), where applicable; 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 an applicant:

Possess a bachelor's degree with a major in nursing from a program accredited by the National League for Nursing; Fulfill the legal requirements for the practice of nursing in Idaho; Have an undergraduate grade-point average of at least 2.75 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; Have current written recommendations from three persons familiar with the applicant's competence in the practice of nursing and potential for leadership and scholarship; and Have successfully completed a graduate level (or equivalent) statistics course prior to admission.

Applications for admission to the master's degree program are reviewed on a continuing basis. For review, the applicant's file must be complete, with all relevant materials submitted. Deadline for summer and fall admission is May 1. The spring semester admission deadline is December 1. Initial course enrollment may begin any term.

Graduates of the Graduate College pertaining to academic standing, probation, and dismissal are applicable to graduate students in nursing. Transfer credits are applicable to the master's degree program are limited and must be approved by the dean for the graduate program in nursing and by the student's advisor.

Doctor of Philosophy

The Ph.D. in Nursing program prepares students to conduct research in nursing, expands the knowledge base relevant to nursing, and contributes to new body of knowledge in the discipline of nursing. Study requires expertise in clinical nursing and competencies in research that relate 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 profession, 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:

96:200 Advanced Clinical Practice I 3 s.h.
96:299 Thesis 2 s.h.
Total 12 s.h.

Spring Semester

96:201 Professional Seminar Issues in Nursing 3 s.h.
96:247 Nursing Education: Process, Rules, and Strategies 3 s.h.
96:261 Nursing Administration: Process, Rules, and Strategies II 3 s.h.
96:262 Advanced Clinical Practice II 3 s.h.
Supporting course 3 s.h.
96:200 M.S. Project 2 s.h.
96:299 Thesis 2 s.h.
Total 11 s.h.

Admission Requirements

Students applying to the Ph.D. program must fulfill the following requirements:

Completion of an N.C.L. accredited basic nursing program.
Completion of a master's degree program.
Current R.N. license to practice nursing.
CPR: General Test, preferably within the last 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 course work at the University to fulfill the objective of professional or personal improvement. Such individuals may request admission to the professional improvement category. This admission status allows students to take some graduate courses at the University without commitment to a degree objective.

Admission as a nursing professional improvement student requires a formal application, including transcript(s) of three current terms of rigorous academic work in an accredited institution, and letter(s) of recommendation from at least two professional references. Students may be admitted to the University without commitment to a degree objective.

96:450 Research Seminar in Nursing Administration I 3 s.h.
96:651 Research Seminar in Nursing Administration II: Health Care Systems Concepts 3 s.h.
96:450 Research Seminar in Nursing Administration III 3 s.h.
96:450 Research Seminar in Nursing Administration IV 3 s.h.
96:651 Research Seminar in Nursing Service Administration 3 s.h.
Other Ph.D. requirements include the following:
Cognitive minor courses 9 s.h.
Cognitive research sequence: research methods and statistics 3 s.h.
96:650-651 Research Practicum I and II 6 s.h.
Written comprehensive examination: Dissertation 12 s.h.
Research seminar 3 s.h.
Oral defense 3 s.h.

96:450 Research Seminar in Nursing Administration I 3 s.h.
96:651 Research Seminar in Nursing Administration II: Health Care Systems Concepts 3 s.h.
96:450 Research Seminar in Nursing Administration III 3 s.h.
96:450 Research Seminar in Nursing Administration IV 3 s.h.
96:651 Research Seminar in Nursing Service Administration 3 s.h.
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# Courses

## Primarily for Undergraduates

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<thead>
<tr>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>6900 Cooperative Clinical Internship</td>
<td>0.5</td>
<td>Freshman or sophomore</td>
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<tr>
<td>6908 Health Promotion and Behavior</td>
<td>3.0</td>
<td>Basic knowledge in anatomy, physiology, and health sciences required</td>
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<td>6909 Professional Nursing As An Overview</td>
<td>0.5</td>
<td>Freshman or sophomore</td>
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<tr>
<td>6910 Pathology</td>
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<td>Basic knowledge in anatomy, physiology, and health sciences required</td>
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<td>6911 Foundations of Nursing Practice</td>
<td>4.0</td>
<td>None</td>
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<tr>
<td>6915 Family Practice</td>
<td>1.5</td>
<td>Freshman or sophomore</td>
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<td>6916 Nursing Practice for Adults in Illnesses</td>
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<td>6917 Psychological and Psychosocial Concepts and Interventions for Individuals and their Families</td>
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<td>6918 Nursing Practice for Children</td>
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<td>6919 Nursing Practice for the Elderly and Dying</td>
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<td>6921 Concepts of Primary Health Care</td>
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<td>6922 Leadership in Nursing Theory and Promotion</td>
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# Continuing Education

## Through its Office of Continuing Nursing Education

The college offers nonacademic, short-term programs for enrolled nurses. Programs are scheduled on campus and at community sites throughout the year. Self-study programs and customized learning continuing education modules also are available. Continuing education units (CEUs) are awarded for each program on the basis of one unit per 10 clock hours of instruction. Continuing Nursing Education in an Iowa Board of Nursing-approved provider number 1 week is accredited by the American Nurses' Association Board of Accreditation and the National Association of Pediatric Nurse-Associates and Practitioners.

## Facilities

The Nursing Building is centrally located on the University's main campus, close proximity to the Colleges of Medicine, Pharmacy, and Dentistry and The University of Iowa Hospitals and Clinics. The distance from Science Building and the Henry Library for students is less than 5 minutes.

The building consists of five floors with varied and specialized facilities. Administrative offices are located on the 5th floor, office faculty offices are located on every floor except the second, which is used entirely for classrooms, laboratories, and the Learning Resource Services, which includes a technology laboratory. Additional classrooms and laboratories are located throughout the building. Conference rooms, student lounge, and meeting rooms are conveniently located. Research and computer activities in the building provide direct access to the Wieg Computing Center and to college-owned microcomputers.
Nursing 451

90.152 Human Sexuality 3 s.h.
A wide range of topics relevant to nursing from the
biological and the social and behavioral systems, as well
as contemporary issues that affect the practice of nursing.
May be repeated twice. Open only to students in nursing
undergraduate honors program.

90.154 Human Structure and Function—A
Cellular Approach 3 s.h.
Prepares students to identify human tissues, cell types,
and structural organizations that form specific tissue systems,
and to utilize these concepts to understand the relationship of
specific symptoms and illnesses to tissue malfunction. The
study of cellular biology is limited to microscopic
viewing. Normal laboratory sections include human
skeleton, skin, and other tissues and their functions as well
as the human brain and nervous system. Open to limited
enrollment in the fall. Premedical 90.152 or consent of instructor.

90.156 Human Structure and Function—A
Systemic Approach 4 s.h.
Prepares students to describe the structure, function, and
organization of human and cellular systems, and to
communicate in human language. Students will identify
relationships between tissues and functions, and express
ideas and opinions in organizing material for presentation.
Normal laboratory sections in gross Anatomy, Medical
Laboratory 90.152 or consent of instructor.

90.165 Applied Genetics for Health Care
Professionals 3 s.h.
Genetics in health and disease, human genetic principles,
familial and population genetics, and their application in basic
health care policy. Pre- or corequisites: 90.154 or equivalent
nurse status or consent of instructor.

90.170 Health and Cultural Diversity
Overview of the dynamics of health and illness in
cross-cultural perspectives. Overview spring semesters of
even years. Prerequisites: 90.153 or 90.152 or consent of instructor. Same as 90.131.

90.174 Transcultural Mental Health
Survey of cross-cultural perspectives on mental health and
treatment. Emphasis on cultural behavioral patterns for
different developmental stages in native cultures, as well as
developmentally based therapy patterns. Offered
fall, even years. Prerequisite: 90.154 or consent of instructor. Same as 90.137.

90.183 Financial Management for the Nurse
Manager 3 s.h.
Scales of financial management, projecting and monitoring
budgets, and preparing financial reports. Introductory
courses in statistics and financial mathematics required.

90.185 Community Health Nursing as a Field
of Practice 3 s.h.
The field of practice in community health. A survey of
public health sciences and nursing, concepts of advocacy,
advocacy, prevention, and health education. Historical
background and current issues pertinent to community
health. Open to students 90.154 or consent of instructor.

90.186 Management and Supervision in
Community Health Nursing
Management concepts of organization, power, change,
conflict, authority, and accountability. Emphasis on
interactions with community and institutional settings.
Pre-requisite: 90.185.

90.187 Nursing Practice in the Workplace 3 s.h.
Scales of occupational health nursing. Focus on concepts of
epidemiology, health promotion, prevention of health
impairment, in the workplace, legal, ethical, and moral issues
related to the occupational environment.

90.189 Seminar in Oncology Nursing 3 s.h.
Care of the client living with a cancer diagnostic, nursing
processes, expanded content of psychosociology, and care
of the cancer client. Focus on the acute and chronic phases of
therapy. Oncology implications. Open to students 90.154 or consent of instructor.
Nursing Society standards of care. Open only to registered
nurses currently providing or experienced in the care of
oncology clients or to seniors with consent of instructor.

90.195 Technology and Clinical Application
for Nursing 3 s.h.
Current utilization of technology in nursing science and
professional preparation. Comparison of professional
preparation in community health practice, utilization of
resources evaluated in context of nursing diagnosis. Premedical 90.152 or
registered nurse status or consent of instructor.

90.218 Group Activity in Human Sexuality 6-8 s.h.
Overview of group process, with emphasis on the role of
the group leader, method of group leadership presentation
for theoretical group experience and practice applications.
Same as 90.194, 90.204.
College of Pharmacy

Dean: Robert A. Wiley
Deputy Dean: Dale J. Worely
Assistant dean for undergraduate affairs: Daniel P. Cowen
Acting director of pharmaceutical services: Douglas R. Flanagan
Chemical-affiliate pharmacist: Joseph G. Cannon
Head, pharmaceutical education: Lloyd E. Melhouse, Jr.
Head, pharmaceutical services: Samuel D. Brown
Head, clinical affairs: Paul P. Alexander


Professor emeritus: Dale J. Worely

Associate professor: Donald P. Musculus
Mary J. Bug, Ting-Feng Chen, Michael W. Dubois, Douglas R. Flanagan, Lloyd E. Melhouse, Jr., Chytrza R. Nagel, Benjamin Nordberg, Peter Yang-Pedersen, Dale E. Witmer

Associate professor: Shahe L. Kerr

Clinical assistant professor: Bruce Alexander, James A. Pietta

Adjunct associate professor: Robert W. Dick, Mark C. Lines

Clinical assistant professor: Ken Baker, Harold J. Breck, Dee Ann Cantrell, Maurice D. Donovan, Douglas R. Cernatsch, Richard C. Ding, Gary Mihelcic, Mary E. Tork, Jean M.B. Woodard


Clinical associate professor: Bernard J. Condon, Gretzky A. Ellert, Mark Finkelman, Randall P. McDonough

Adjunct instructors: David H. Benford, Carl Hensley, Warren Knowl, Kent L. Marston, Gary Oubre, John W. Saur

Degrees offered: B.S.PH., Pharm.D., M.S., PH.D. in Pharmacy
The pharmaceutical sciences are concerned with preparing and dispensing medicinal products and monitoring their activity. Pharmacists, through education and training can identify, analyze, select, utilize, and standardize these medicines; determine proper dosage regimens, and serve the community as a prime source of information on health care.

Pharmacists are basically specialists in the science of drugs. They must understand drug composition, chemical and physical properties, manufacture and uses, and activity in human research as well as in ill patients, and must be familiar with tests for strength, purity, and efficiency of drug products. Pharmacists compiled and dispense prescriptions written by health practitioners, who rely on pharmacists for information about the availability, activity, toxicity, and contraindications of various drugs. Pharmacists also communicate knowledge of drugs to patients and to other health professionals.

Nearly everyone is familiar with the community pharmacist and the pharmacy in which she or he practices. The size and type of practice may vary—community pharmacies may be large or small, operated by individuals or by corporations. The pharmacists who staff these pharmacies make 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 setting, the pharmacist is an active member of the health care professionals. Several states recognize this role in 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.

Many pharmacists assume administrative positions in industry, including manufacturing, research and development, control, marketing, and advertising. Many are employed by large pharmaceutical and medical 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 pharmacist administrators offers an opportunity for employment in many fields not commonly associated with pharmacy.

In the United States, more people receive total health care than ever before. 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 preprofessional training and education in a number of areas, including pharmacy technology, pharmaceutical, medical, chemical, and natural products, pharmaceutical, and socioeconomic and clinical hospital pharmacy aspects. A concern that pharmacology is a common part of pharmacy education.

The Colleges of Liberal Arts, Business Administration, 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 one year of preprofessional study taken in the College of Liberal Arts at the University of Iowa or at any accredited college 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 professional study includes, in addition to the basic preprofessional requirements, at least 4 semester hours of organic chemistry, 5.4 semester hours of biology, 3.4 semester hours of quantitative analysis, and at least 15 semester hours of general education elective. Only a limited number of students are admitted with advanced standing.

The University of Iowa College of Pharmacy is accredited by the Council on Pharmaceutical Education, Graduate of the college are qualified to take the licensure examination by the Iowa Board of Pharmacy Examiners. Graduation from the baccalaureate program in pharmacy requires satisfactory completion of the following requirements: 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/fail options, credit by examination, minimum schedule, second-semester option, waiver or interchange of courses, or preclusion of registration, drop date, 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 1988 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 spent 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 in the program. The students and the college share the cost of the program.

Honors Program

The honors program gives students an opportunity to enter 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 enroll in Honors Seminar, a series of weekly discussions on topics from the humanities, the sciences, law, and the social sciences.

These students may elect to prepare a major paper or carry out a research project of limited scope during their P3 year. Satisfactory completion of the project certifies them as having completed 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 is not a guarantee of admission to the college. The college admission committee selects the best qualified applicants. Questions concerning satisfaction of degree requirements should be directed to the chair of the undergraduate curriculum committee.

Preprofessional Course Work

Rationale: 2 semester hours, or 6 semester hours of transfer credit in English composition and rhetoric, and 2 semester hours.

General chemistry: 8 semester hours.

Mathematics: 3 or 4 semester hours of a satisfactory differential and integral calculus course.

Physics: 5 semester hours of general education courses in the curriculum, and 2 semester hours of introductory calculus, or 2 semester hours of introductory calculus and 2 semester hours of general education courses in the curriculum.

The college admission committee deems these courses to be the minimum general education prerequisites for admission to the college. Questions concerning general education requirements should be directed to the chair of the undergraduate curriculum committee.

Transfer Students

Students who transfer into the college after two years in a community or liberal arts
The Professional Curriculum

First Year

First Semester
46.121 Pharmacy Muh 3 s.h.
46.131 Organic Chemistry I 3 s.h.
37.2 Principles of Animal Biology 5 s.h.
46.101 Elementary Quantitative Analysis 4 s.h.

Total 15 s.h.

Second Semester
46.141 Pharmacy Orientation 2 s.h.
4.122 Organic Chemistry II 3 s.h.
4.411 Organic Chemistry Laboratory 3 s.h.
46.011 Principles of Human Anatomy 3 s.h.
**General education electives** 4 s.h.

Total 15-17 s.h.

*Also offered first semester for students on a 2-3 program only.

**In addition to the required courses in the curriculum, students must complete 18 semester hours of general education courses. These elective courses should be in the behavioral, social, and humanistic areas of knowledge.

Second Year

First Semester
46.201 Pharmacology I 4 s.h.
94.102 Biochemistry for Pharmacy Students 4 s.h.
46.112 Health Sciences Microbiology 4 s.h.
46.006 Principles of Human Anatomy 3 s.h.
**General education electives** 9 s.h.

Total 15-18 s.h.

*May be taken in second semester of first year.

Second Semester
46.204 Pharmacology II 4 s.h.
46.221 Pharmacological Socioeconomics: Health Care System 4 s.h.
46.156 Medical and Natural Products Chemistry I 5 s.h.
72.101 Intermediate Physiology 4 s.h.

Total 7 s.h.

Third Year

First Semester
46.121 Medical and Natural Products Chemistry II 5 s.h.
60.200 Introduction to Human Pathology 4 s.h.

46.101 Pharmacology for Health Sciences Pharmacy 5 s.h.
46.355 Pharmaceutical Services: Practice Management 3 s.h.

Total 17 s.h.

Second Semester
46.132 Medical and Natural Products Chemistry II 5 s.h.
71.103 Pharmacology and Toxicology 3 s.h.
46.387 Pharmacotherapeutics I 3 s.h.
46.119 Therapeutics I 3 s.h.
**General education electives** 0-3 s.h.

Total 14-17 s.h.

Fourth Year

First Semester
46.411 Jurisprudence 2 s.h.
46.437 Pharmacology IV 4 s.h.
46.451 Drug Information 5 s.h.
46.111 Therapeutics II 4 s.h.
**General education electives** 0-4 s.h.

Total 13-17 s.h.

Second Semester
46.501 Hospital Pharmacy Electives 4 s.h.
46.60 Community Pharmacy Electives 4 s.h.
*Clinical pharmacy clerkship* 4 s.h.
*Clinical pharmacy clerkship* 4 s.h.

Total 16 s.h.

**Two clinical clerkships are selected from a large number of clerkship offerings.

Professional Electives
46.68 Community Pharmacy Electives 3 s.h.
46.106 Non-Prescription Drugs 2 s.h.
46.103 Pharmacy Practice Class 3 s.h.
46.102 Pharmacy Hospitality Seminar 1 s.h.
46.103 Physical Pharmacy 3 s.h.
46.101 Pharmacokinetics and Biopharmaceutics 3 s.h.
46.105 Industrial Pharmacy Survey 2-3 s.h.
46.109 Computer Applications in Pharmacy 2 s.h.
46.114 Advanced Clinical Pharmacy 4 s.h.
46.135 Perspectives in MCM Research 1 s.h.
46.147 Introduction to Research Methods 1 s.h.
46.154 Communications Skills for Pharmacists 3 s.h.

Graduate Programs

The college has graduate programs in each of its four academic divisions. Master of Science and Doctor of Philosophy programs are available, with biomedical and natural products chemistry, and pharmaceutical socioeconomics. A Master of Science degree is offered 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 business and professional institutions and organizations.

*The application deadlines, grade-point average for admission, Graduate Record Examination (GRE) Aptitude Test scores, and necessary letters of recommendation are the same as those for the Graduate College. Academic requirements for maintaining graduate registration are*
determined by individual divisions of the College of Pharmacy.

Doctor of Pharmacy (Pharm.D.)

The Pharm.D. program is a two-year, postbaccalaureate professional degree program that combines didactic coursework and clinical clerkship. The program is accredited by the American Council on Pharmaceutical Education. The major goal of the program is to provide the health care system with pharmacists who are specifically prepared to undertake an extended role in monitoring, evaluating, and optimizing drug therapy in hospitalized and nonhospitalized patients. The program includes many areas of The University of Iowa Hospitals and Clinics; The College of Dentistry; The Veterinary Medical Center; the family practice centers at Iowa City, Cedar Rapids, and Des Moines; Mercy Hospitals in Cedar Rapids, Iowa City, and Des Moines; Mercy, St. Luke's, and St. Mary's Hospitals in Des Moines; Community Medical Center in Waverly; the Burlington Medical Center in Burlington; St. Joseph's Mercy Hospital in Marshalltown; the Marion Health Care System; and St. Luke's Hospital in Sioux City, the State Mental Health Center; and Mercy Hospital in Des Moines, Iowa. Many other community hospitals, including St. Mary's and Mercy Hospitals in Davenport, Mercy Health Care in Dubuque, Ottumwa Regional Health Center in Ottumwa, the Indian Health Service Hospitals in New Mexico; St. Mary's Hospital in St. Joseph, Illinois; and numerous selected community pharmacies.

Courses

Undergraduate Pharmaceutics

45.13 Pharmacy Math

45.14 Pharmacology

45.15 Pharmacology I

45.16 Pharmacology II

45.17 Pharmacology III

45.18 Principles of Pharmacology

45.19 Principles of Drug Administration, Dispensing, and Counseling

45.20 Principles of Drug Administration, Dispensing, and Counseling

Graduate Pharmaceutics

45.117 Pharmaceutical Problems

45.137 Pharmaceutical Dosage Forms

45.138 Pharmacokinetics

45.139 Pharmacokinetics and Biopharmaceutics

45.140 Pharmacokinetics and Biopharmaceutics

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Pharmacy 455
Graduate Clinical-Hospital Pharmacy

46:14 Advanced Clinical Pharmacy
Application of principles of pharmacology and therapeutics to the care of specific hospital patients. Involves participation in ward rounds and conferences with the medical staff and assessment of patients on various types of drug therapy, emphasis on drug selection, adverse effects and dosage modifications of therapeutic drug use. Prerequisites: 46:18 or 46:19. Consent of instructor required. Permission: 46:18.

46:15 Clinical Pharmacy: Drug Literature Review and Criticism
Literature review of current pharmacy practice, including various aspects of therapeutic drug therapy, requiring an understanding of disease states, principles of pharmacology and therapeutic drug use. Permission: 46:19.

46:21 Nuclear Pharmacy
2 c.h.

Doctor of Pharmacy (Pharm.D.)
Pharm.D. standing and consent of instructor are required for all courses except 46:17.

46:17 Clinical Psychotherapeutics

46:17 Advanced Therapeutics I
9 c.h. Critical analysis of selected major therapy issues and their drug therapy.

46:17 Advanced Therapeutics II
6 c.h. Critical analysis of selected major therapy issues and their drug therapy.

46:17 Advanced Therapeutics III
6 c.h. Critical analysis of selected major therapy issues and their drug therapy.

46:17 Clinical Investigation

46:19 Advanced Therapeutics IV
6 c.h. Critical analysis of selected major therapy issues and their drug therapy.

46:19 Advanced Therapeutics V
6 c.h. Critical analysis of selected major therapy issues and their drug therapy.

46:20 Hayflick Clerkship
Advanced application of therapeutic skills necessary for the pharmacists and nurses of the pharmacy department. Consent of instructor required.
Continuing Education

Dean Emeritus J. Vogler
The Division of Continuing Education was established by special legislation of the Illinois General Assembly and is "created to provide a larger service to the Commonwealth and to the people of Illinois by carrying out to every part of the State the knowledge, the through, the skills, and the spirit of academic and professional endeavor; and to bring the University generally into direct contact with the citizens."

The Division's organization and services include the following:

Audiovisual Center
Director: William O'Byrne
The Audiovisual Center lends 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: graphs, charts, maps, files, systems, posters, illustrations, models, charts, and overhead transparencies.
- Photographic Service: black-and-white and color photography, negatives, two-inch slides, filmstrips, still photography, many types of specialized photographs, 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.
- Multimedia UNIQUE: design and production of single and multiple-screen slides, and "posters," to be used on projectors, manual and programmed control, open-end 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 audiovisuals only. For requests larger than $50, charges are made for oversize, trial labor.

Media Services
The University Media Library provides a master collection of 16 mm instructional films and videos with charge for on-campus instruction and curriculum-related activities, and for off-campus rental, basoidal 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 mounting of appropriate projectors for films, slides, filmstrips, and slides: sound equipment and overhead projectors, portable projection screens, audiotape recorders, record players, videocassette recorders/player, portable public-address systems, and display devices (exhibit, sound, slides, boards). Repair service is available for audiovisual equipment.

Center for Conferences and Institutes
Acting Director: George J. Lopes
The Center for Conferences and Institutes serves as the principal agency of the University for developing, coordinating, and conducting on-campus 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, promotions, 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 marketing of appropriate resources, coupled with professional planning and execution of courses and other short-term programs, helps to ensure the achievement of the educational objectives specified for each program.

The director of conferences oversees and staffs events such as conferences, institutes, short courses, and other noncredit continuing-education programs held in the Illinois Memorial Union on campus for groups other than on-campus students. The University Extension Manual directs faculty and staff who plan University conferences and group functions held on campus or in the City of Carbondale to schedule these activities through the Conference Center office. The center uses conference facilities, dining services, and viewing accommodations at the Illinois Memorial Union when available and appropriate.

The conference center also conducts national and international programs for faculty and departments.

Center for Credit Programs
Director: John V. Finamore
The Center for Credit Programs is responsible for the delivery of University of Illinois credit courses to noncredit student residents of Illinois 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 Guided 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 three months in which to complete work. A catalog of course listings, procedures, and enrollment forms is available at the Guided Correspondence Study, 110 International Center.

Off-Campus Classes
The Center for Credit Programs offers University courses off-campus. Classes are scheduled where they may be best served: off-campus studios, at the request of public school officials, and 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 the University's Extension Televising Program. A small fee is required for each course, and a deposit must be sufficient to meet the cost of offering the course. A catalog of the Saturday and Evening Class Program is available at the Center for Credit Programs, 110 International Center.

Saturday and Evening Classes
The Saturday and Evening Class Program offers University courses at sites convenient for nontraditional students. All classes meet or The University of Illinois courses and evening courses must be sufficient to meet the cost of offering the course. The fall, the Saturday and Evening Class Program is available at the Center for Credit Programs, 110 International Center.

Bachelor of Liberal Studies degree
The Bachelor of Liberal Studies degree is offered by each of the three Illinois campuses (The University of Illinois, Iowa, Iowa, Illinois), and Illinois)
Labor Center

Director: Roberta A. Van Hee

The Labor Center targets instruction to the specific needs of the labor movement in Iowa. Staff members combine on-campus and off-campus programs to reach as many people as possible.

Institute of Public Affairs

Acting Director: Tim J. Steele

The mission of the institute is to help strengthen cities, counties, and county governments in Iowa by serving as a primary resource and continuing education link to the universities. Institute services are available to state and local government agencies and to citizens involved in civic affairs.

The institute’s full-time research and training staff apply university resources to solve 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 aimed at 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 as statewide government committees that deal with major concerns of state and local governments.

Radio Broadcasting Services

Acting director: Aida Munk

WSUI and KSUI-FM expand the resources and activities of the University to the people of eastern Iowa with 18 hours of daily broadcasting. The broadcast schedule consists of educational, cultural, and informational programming not generally available elsewhere. As an affiliate of National Public Radio (NPR), WSUI contributes program materials to a national network of more than 300 non-commercial radio stations. The main studios and offices are located in 3350 Engineering Building, and a free copy of the WSUI-SUI Program Guide is available from that address.

Video Center

Director: Daniel G. Lind

The University Video Center provides high-quality video services and facilities, including those necessary to maintain and promote research. It also coordinates video equipment purchase and inventory and produces efficient University support of campus video. Toward this end, the center has the personnel and facility resources to assist units in the purchase of equipment and supplies, and in production and postproduction activities. Additionally, the center provides video system design and maintains guidelines for equipment standardization.
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: Norman A. Pope, West Des Moines
Richard R. Whitman, Davenport
Betty Jean Fergeson, Waterloo
John F. Noll, West Des Moines
Mary M. Ewing, Davenport
Elizabeth S. Fitch, Cedar Rapids
Kenneth R. Tyler, Atlantic
Viki Watenbarg, Muscatine
Mary C. Williams, Davenport
Executive secretary: R. Wayne Richey

Central Administration
President: Hyatt H. Foulds III
Vice president for academic affairs: Peter L. Nelson
Vice president for research: James E. Morrison
Vice president for finance and university services: Susan M. Phillips
Vice president and director, Opportunity of Iowa: Philip G. Hubbard

Academic Affairs
Vice president and dean of faculties: Peter L. Nelson

College of Business Administration
Dean: George Daly
Office of the Dean: 109 Old Capitol
Research Services: Phone 319-335-1721
Center for Business and Economic Research: Phone 319-335-1721
Center for Corporate Management: Phone 319-335-1721

College of Dentistry
Dean: John M. McLean
Office of the Dean: 111 Old Capitol
Research Services: Phone 319-335-1721

College of Education
Interim Dean: Lowell D. Schoon
Office of the Dean: 111 Old Capitol
Research Services: Phone 319-335-1721

College of Engineering
Dean: Robert C. Haring
Office of the Dean: 111 Old Capitol
Research Services: Phone 319-335-1721

Graduate College
Acting dean: Rudolph W. Schan

College of Liberal Arts
Dean: Gerhard Loewenberg

College of Medicine
Dean: John W. Eckstein

College of Nursing
Dean: Gemmae Nelson

College of Pharmacy
Dean: Robert A. Wiley

Division of Continuing Education
Dean: Joseph J. Voss

Audiovisual Center director: William Ogilvy

Institute for Public Affairs: Director: Tom J. Smidt
Labor Center director: Roberta T. Reif

Public Relations and Communication: Director: John Monick

Libraries
University Libraries: Sheila Czeck

Budget and Planning
Acting associate vice president: Laura Davis

Iowa Lakeside Laboratories
Director: Robert W. Craner

Summer Session
Director: Cornelia Quinn

Student Academic Affairs
Acting associate vice president: T. Ann Cleary
Admissions
Director: Michael Barnes
Registrar
Jerold C. Dalman

University Examination and Testing Center
Director: James E. Moore

Undergraduate Academic Advising Center
Director: Janet Kaufman

Student Administrative Services
Associate vice president: Philip E. Jones
Residence Services
Director: George L. Drol
Iowa Memorial Union
Director: Jean Kendall
University Counseling Service
Director: Gerald L. Stone
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: Donna Clavelier
Women's Resource and Action Center
Director: Papas Moir

International and Cultural Affairs
Associate vice president: Fredrick Woodard
Office of International Education and Services
Director: Stephen M. Arum
Iowa Center for the Arts
Chapel: Raymond Woodard
Hancher Auditorium
Director: Wallace Copeland

Museum of Art
Director: Mary Kozak

Research
Associate vice president: James Monroe
Division of Sponsored Programs
Director: Margaret E. Hoppe
Institute for Child Behavior and Development
Director: Derek Willard

Research
Director: Robert L. Lusk
Office of Information Technology
Director: Fred H. Harris

Weeg Computing Center
Director: W. Lee Shope

University Occupational Health Service
Director: Lauren M. Pavelec

Health Protection Office
Director: William E. Twaler

State Archaeologist
William Green

Technology Innovation Center
Director: W. Bruce Wheaton

University House
Director: Jay Sennel

University of Iowa Press
Director: Paul Zimmer

Animal Care Unit
Director: Paul S. Cooper

Finance and University Services
Vice president: Susan M. Phillips

Business Office
Business manager: Michael J. Fitzgerald
Treasurer: Douglas K. Torre
Controller and secretary: Douglas M. Young

University Personnel Services
Director: Marilyn Lynch

Planning and Administrative Services
Director: Richard E. Gibson

Intercollegiate Athletics for Men
Director: Charles W. Elliot

Intercollegiate Athletics for Women
Director: Christine Gove

Recreational Services
Director: Harry R. Ottsender

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 Vailakis

State Hygienic Laboratory
Director: William J. Hauser

University Hospital School
Director: Alfred C. H. C. McLeary

Student Health Service
Director: Mary L. Kowalik

Regional Child Health Specialty Clinics
Director: Richard P. Nelson

General University
Affirmative Action Office
Acting director: Susan L. May

Alumni Association
Executive director: D. Richard Emerson

University of Iowa Foundation
President: Ronald J. Wyneck

University Relations
Acting director and assistant to the president: Ann M. Rhodes
Admission Rules Common to the Three State Universities

681—1.1(262) Admission of undergraduate students directly from high school

Students desiring admission must meet the requirements in this section and also any special requirements for the curriculum, school, or college of their choice.

Applicants must submit a formal application for admission, together with a SAT Application, and have their secondary school provide a transcript of their academic record, including credits and grades, rank in class, and certification of graduation.

Applicants must also submit scores from the American College Test (ACT) or the Scholastic Aptitude Test (SAT), or their equivalent, as determined by each university. The Test of English as a Foreign Language (TOEFL), is required of students whose first language is not English. Applicants may be required to submit additional information or data to support their applications.

1.1(C) Graduates of accredited 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 or fourth graduating class may, after a review of their academic and test records, and at the discretion of the admissions officers:

a. be admitted conditionally,

b. be required to enroll for a trial period during a preceding summer session,

c. be removed from the student advising program.

1.1(D) 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 or conditional admission or summer trial enrollment may not necessarily be offered to these students.

1.1(E) Applicants who are graduates of nonaccredited high schools will be considered for admission in a manner similar to applicants from approved high schools, but additional emphasis will be given to scores obtained on standardized examinations.

1.1(F) 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 persons whose academic achievements and personal and intellectual maturity clearly suggest readiness for collegiate level study. Each university will specify requirements and conditions for early admission.

681—1.2(262) Admission of undergraduate students by transfer from other colleges

Students desiring admission must meet the requirements in this section and also any special requirements for the curriculum, school, or college of their choice.

Applicants must submit a formal application for admission, together with a $10 application fee, and request that each college they have attended send an official transcript of record to the admissions office. High school academic records and standardized test results may also be requested. The Test of English as a Foreign Language (TOEFL) is required of foreign students whose first language is not English.

1.2(F) Transfer applicants with a minimum of 24 semester hours of graded credit from regionally accredited colleges or universities, who have achieved at least a grade point required by each university or specific programs, will be admitted. Higher academic standards may be required of students who are not residents of Iowa.

Applicants who have not maintained the grade point required by each university for specific programs or who are under academic suspension from the last college attended may, after a review of their academic and test records, and at the discretion of the admissions officers:

a. be admitted unconditionally,

b. be admitted conditionally,

c. be required to enroll for a trial period during a preceding summer session, or
d. be denied admission.

1.2(G) Admission of students with fewer than 24 semester hours of college credit will be based on high school academic and standardized test records in addition to review of the college record.

1.2(H) Transfer applicants under emergency 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(I) Transfer applicants from colleges and universities not regionally accredited will be considered for admission on an individual basis taking into account all available academic information.

681—1.3(262) Transfer credit practices

The regent universities endorse the Joint Statement on Transfer and Award of Academic Credit approved in 1976 by the American Council on Education (ACE), the American Association of Collegiate Registrars and Admissions Officers (AACRAO), and the Council on Postsecondary Accreditation (COPA). The current issue of Transfer Credit Practices of Selected Educational Institutions published by the American Association of Collegiate Registrars and Admissions Officers (AACRAO), and publications of the Council on Postsecondary Accreditation (COPA) are examined to determine transfer credit. The acceptance and use of transfer credit is subject to limitations in accordance with the policies of the colleges operating at each university.

1.3(F) Students from regionally accredited colleges and universities

Credit earned at a regionally accredited college or university is acceptable for transfer except that credit in courses determined by the university to be of remedial, vocational, or technical nature, or credit in courses or programs in which the institution granting the credit is not directly involved, may not be accepted, or may be accepted to a limited extent.

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.
Credit earned at colleges and universities which have candidate status may be begun or transferred for credit. Credit will be accepted for coursework and program credits only if the institution and the program meet the following criteria:

- Undergraduate: The institution must be accredited by an agency recognized by the appropriate professional association.
- Graduate: The institution must be accredited by a national or regional agency recognized by the appropriate professional association.
- Professional: The institution must be accredited by a professional association recognized by the appropriate professional association.

1.3.1 Students from colleges and universities not regionally accredited

When students are admitted from colleges and universities not regionally accredited, the institution must verify the following:

- Official transcripts and other relevant documents are provided.
- The institution has a recognized academic program that meets the requirements of the state in which the student is located.
- The institution has a recognized academic program that meets the requirements of the state in which the student is located.
- The institution has a recognized academic program that meets the requirements of the state in which the student is located.

1.3.2 Students from foreign colleges and universities

Transfers from foreign institutions may be granted after a thorough evaluation of the institution's academic standards and program requirements. The institution must be accredited by a recognized accreditation agency.

1.4.1 General

- A person enrolling at one of the three institutions shall be classified as a resident or nonresident for admission, tuition, and fee purposes.
- The institution shall provide information on the classification of students.
- The classification shall be based on information provided by the student and other relevant documents.

1.4.2 Guidelines

The following guidelines are used in determining the resident classification of a student for admission, tuition, and fee purposes:

- Financially dependent students whose parents move from Iowa to another state while the student is enrolled remain residents.
- Financially dependent students whose parents move from Iowa to another state while the student is enrolled remain residents.
- Financially dependent students whose parents move from Iowa to another state while the student is enrolled remain residents.

1.4.3 Registration

- Students must register for classes at the beginning of each semester.
- The deadline for registration is established by the institution.
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- The deadline for registration is established by the institution.
- Students must register for classes at the beginning of each semester.
- The deadline for registration is established by the institution.
in all cases until the beginning of the next term. In no case will the student be excused.

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.

b. A person who has been certified as a refugee or granted asylum by the appropriate agency of the United States government who resides as a student at a university governed by the Iowa State Board of Regents may be considered a reasonable student for admission, tuition, and fee purposes where the person:

(1) Comes directly to the state of Iowa from a refugee camp or of discharge, or
(2) Comes to the state of Iowa within a reasonable time and has not established domicile in another state.

Any refugee or individual granted asylum not meeting these standards will be presumed to be a nonresident for admission, tuition, and fee purposes, and subject to the usual method of proof of establishment of Iowa residency.

c. An alien who has demonstrative intent establishes Iowa residency in the same manner as a United States citizen.

1A.3. Facts

a. The following circumstances, although not necessarily conclusive, have presumptive value in support of a claim for resident classification:

(1) Resides in Iowa for 12 consecutive months, excluding time spent in specific activities other than those of a full-time student, immediately prior to the beginning of the term for which resident classification is sought.

(2) Reliance upon Iowa requests for benefits.

(3) Domicile in Iowa of persons legally responsible for student support.

(4) Former domicile in the state and maintenance of significant connections therewith while absent.

(5) Qualification for state or federal programs of temporary employment in Iowa.

(6) Other facts indicating the student's domicile will be considered by the universities in determining the student.

b. 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 when not enrolled in school.

(8) Ownership or property in Iowa, or the payment of Iowa taxes.

601–1.5[262] Registration and transcripts—general

A person may not be presumed to register for a course or courses in a state board of higher education institution until any delinquent accounts owed by the person to an institution of higher education or affiliated organization for which an institution acts as fiscal agent have been paid.

A state board of higher education institution may withhold official transcripts of the academic record of a person until any delinquent accounts owed by the person to an institution or any affiliated organization for which an institution acts as fiscal agent have been paid.

Supplemental Specific Rules for The University of Iowa

601–2.1[262] Formal application for admission

All applicants for admission to any college of The University of Iowa must submit a formal application for admission with the required official transcripts and other supporting material at the discretion of the director of admissions. Applicants may not be registered until they have been granted an admission statement by the director of admissions.

601–2.3[262] College of Business Administration

2.3(1) Application for admission

Applications for admission to the college of business administration shall be submitted to the director of admissions. Applicants are urged to apply as early as possible, since this will give the admissions committee more time to devote to each application. Closing dates for receiving applications will be announced well in advance of the opening date of any session.

2.3(2) Requirements for admission

Applicants for admission to the college of business administration are required to have:

a. Completed specific course work prescribed by the faculty of the college.

b. A minimum grade-point average of 2.0 on a 4.0 scale.

c. Maintained a satisfactory grade-point average on all courses undertaken, and on all courses undertaken in business and economics.

Applications from students who have minor deficiencies in meeting grade-point requirements specified above will be reviewed by the admissions committee of the college, and upon favorable recommendation of the committee, such students may be granted conditional or probationary admissions.

Fulfillment of the minimal requirements specified above, however, does not guarantee admission to the college of business administration. From those applicants who meet the minimum requirements, the admissions committee will select the applicants who, in its judgment, appear to be most qualified.

601–2.4[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.

Building the necessary prerequisites for admission listed does not ensure admission to the college of dentistry. The director of admissions reserves the right to control the number of applicants admitted to the college of dentistry. In such a case, the director of admissions will be guided by the standards of the college and the needs of the college.

The college curriculum must include at least three academic years of accredited work during the last five academic years, including at least 12 semester hours and including specific required science courses as prescribed by the faculty of the college. Examinations should be administered as to the applicant a well-rounded educational background.

In order to meet minimum admission requirements, the applicant should attain a cumulative grade-point average of 2.50. The quality of course work in preclinical science courses is basic to success in dentistry, special consideration to such course work will be given by the admission committee. The grade-point average is based upon the University of Iowa's grading system in which a grade of 4 is required for all courses. Other grading systems will be evaluated by the office of admissions and the committee as admissions in the college of dentistry.
Applicants who have completed the prerequisites for admission to dentistry five or more years prior to seeking admission to the College of Dentistry will be considered at the discretion of the admissions committee under exceptional conditions.

Preference will be given to applicants who are residents of Iowa, but consideration will also be given to nonresidents.

Personal interviews will be required of applicants for admission to the College of Dentistry. Applicants will be notified when they should appear for the required interviews with members of the admissions committee.

All applicants must complete the dental aptitude tests sponsored by the council on dental education of the American Dental Association. Tests are given three times annually. The University of Iowa is a testing center.

To facilitate early selection, applicants for admission to the college of dentistry are urged to complete the aptitude test no later than October to enable the admissions committee to begin its selection in December.

Accepted applicants are required to make the required deposit within two weeks after notification of favorable action on their applications. This deposit is not transferable but is credited toward the first term payment. The applicant who fails to make the deposit within the time specified forfeits his or her place in the entering class.

Applicants accepted for admission are required to submit a satisfactory physical examination report by the university student health service, X-Ray film of the chest and a negative tuberculin skin test prior to registration.

2.4.1 Advanced standing

Applications for advanced standing are handled as individual cases.

681—2.5(262) College of Engineering

Address all inquiries regarding admission to the Director of Admissions, University of Iowa, Iowa City, Iowa.

Closing dates for receiving applications will be announced well in advance of the opening date of the fall session.

2.5.1 Admission of freshman students

The applicant must submit a formal application and must have the secondary school provide a certificate of high school graduation and a complete statement of the applicant's high school record, rank in class, scores on standardized tests, and certification of high school graduation. The applicant must also submit any other evidence such as a competent recommendation that may be required by this university.

Each applicant must have attained satisfactory scores on the university's required admission examinations, maintained a satisfactory cumulative grade-point average in graduating class, and successfully completed all prerequisite courses. The university with the approval of the state board of regents shall establish and periodically review specific minimum requirements by admission to the college of engineering. Among the items to be determined are test 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, (b) admit on probation, (c) require a enrolment for a trial period during a succeeding summer session, or (d) deny admission.

2.5.2 Admission of undergraduate students by transfer

The applicant must submit a formal application and official transcript of college work. Each applicant should have:

a. Maintained satisfactory progress in high school

b. Maintained 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 the required requirements, the director of admissions will review individual records and make final probationary admissions.

681—2.6[262] Graduate College

Graduates of any college or university accredited by regional accrediting associations 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 of a master of arts or arts degree at the university and upon recommendation of the department and approval by the dean of the graduate college. The acceptance of a student as a candidate for a degree is determined upon the merits of each individual case.

A student who within four semester hours of having satisfied all the requirements for the bachelor's degree at the University of Iowa may be given a tentative admission to the graduate college.

681—2.7[262] College of Law

2.7.1 Application for admission

Address all inquiries concerning admission to the Director of Admissions, University of Iowa, Iowa City, Iowa. Residency students may enter the college of law only in the summer session of the fall quarter.

Closing dates for receiving applications will be announced well in advance of the opening date of any session.

To be considered for admission, an applicant should have attained a cumulative grade-point average of at least 2.3 in all college work undertaken. The grade-point average is based upon the University of Iowa's grading system in which a grade of A is equivalent to four points. Other marking criteria will be evaluated by the office of admissions.

Applicants for admission must take the Law School Admission Test administered by the Educational Testing Service, Princeton, New Jersey, and have their scores forwarded to the college of law. The test is given several times per year and may be taken at numerous locations in the United States and throughout the world. Candidates are urged to take the test in the fall or winter preceding the fall session for which they are making application. Except upon showing a good reason, an applicant who fails to take the test prior to the June 1 preceding the fall session in which they wish to enroll.

Fulfillment of the specific requirements for admission to the college of law is a prerequisite for admission to the college of law. From the applicants meeting the minimum requirements, the admissions committee of the college of law selects those who will be admitted. The admissions committee will consider applications from students who fail to take the test prior to the June 1 preceding the fall session in which they wish to enroll.

2.7.2 Admission with advanced standing

A transfer student may be eligible for admission if the student: (a) has attended a school approved by the Association of American Law Schools; (b) has been in good standing at the time of withdrawal (enrolled in a full-time plan of study); and (c) meets the admissions requirements for beginning students. The entering student must have completed more than one year of law study. Advanced standing will be permitted only in exceptional cases. Applicants for admission with advanced standing should comply with the procedures required for admission to the first-year class.

681—2.8(242) College of Medicine

2.8.1 Application for admission

Address all inquiries regarding admission to the Director of Admissions, University of Iowa.
Applicants are urged to apply as early as possible. Until the fall of the year, the admissions committee requests 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.

Full fulfillment 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 entrance an applicant must:

a. Have received the baccalaureate degree; or
b. Have completed three years of a combined baccalaureate-medicine curriculum which qualifies the applicant to receive the baccalaureate degree on completion of the first year 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 a course in physical diagnosis and sufficient to meet the minimal academic requirements for admission to the college of medicine.

Applicants who have completed the baccalaureate degree and required courses five or more years prior to seeking admission to the college of medicine will be considered on the basis of their academic achievements only under exceptional conditions.

The college curriculum must include at least three years (equivalent to 96 semester hours) including specific course work in the sciences as prescribed by the faculty of the college.

Students planning to study medicine should bear in mind that other college work is requested in addition to prerequisite sciences because it offers an opportunity to secure a well-rounded education, which is of special importance to those entering the medical profession. In the selection of applicants, preference will be given to those who give evidence of having obtained such a broad education.

To be considered for admission, an applicant must have attained a grade-point average of at least 5.5 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 to the quality of continuous studies in science. The grade-point average is based upon the University of Iowa grading system in which a grade of A is equivalent to four points. Other grading 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 the examination through the university examination service, the University of Iowa personal interviews will be required.

Applicants will be requested to submit the appointment for required interview.

Applicants accepted for admission are requested to submit a satisfactory physical examination report to the university student health service within two weeks following notification of acceptance.

All applicants must also complete, through student health service, an X-ray film of the chest and successful vaccination against smallpox prior to registration.

2.0) Admission to advanced standing

If their work preparatory to entering a college of medicine would have met entrance requirements or this college, students from other approved medical colleges may be admitted to advanced standing according to the following conditions:

Only applicants of high scholastic standing will be considered. They must present certificates showing that they have satisfactorily completed courses equivalent to those attempted by the class they wish to enter. The curriculum of the college of medicine will be considered an equivalent requirement for admission.

Applications will be considered only upon receipt of a statement from the dean or registrar of the college from which the applicant comes, showing the actual amount of time the student has spent in the study of medicine, the courses taken, and the grades received, together with a statement of the work prerequisite to entering upon the course in medicine.

No advanced standing will be granted to students from other than approved medical schools. Students may be granted subject credit upon recommendation of the head of the department concerned, for work taken in other than medical schools.

2.0) 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 complying with all the regular requirements for admission to such course or by action of the faculty upon recommendation of the professor in charge of the course.

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. For admission to the college of nursing an applicant must have:

1. Completed specific course work as prescribed by the faculty of the college. The directory of admissions will provide a list of the course work required.

2. Completed the American College Tests. Additionally, all applicants must:

Applications from students who have minor deficiencies in the requirements specified above will be reviewed by the admissions committee of the college, not, 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, appears to be best qualified.

601-2.10(262) College of Pharmacy

1.0) General basis for admission

Full fulfillment of the specific requirements for admission does not ensure admission to the college of pharmacy. All applicants meeting the specific requirements, the admission committee will select those applicants who in their judgment appear to be best qualified. Applicants for admission to pharmacy should have graduated from an approved high school and have an equivalent amount of training.

1.0) 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 not less than 12 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), ten 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 2.50 is based on the student University of Iowa's marking system in which the grade of A is equivalent to four points. Applications for admission and the required official transcripts should be sent 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 free.

2.10(5) Current requirements

Applicants who have completed work in a college of pharmacy accredited by the American Council on Pharmaceutical Education may use their college academic average in acceptance. They will be admitted at the same time other students are notified toward the degree of bachelor of science in pharmacy.

681—2.1.1[262] College of Liberal Arts

Applicants for admission to liberal arts and sciences must meet the rules that are common to the three state institutions at Iowa as listed in 1.1(22), 1.2(22), and 1.3(22).

681—2.1.2[262] College of Education

Students at the university majoring professional work in education are registered in the college of liberal arts or the graduate college. Requirements for teacher-training courses and the graduate college. Requirements for permission to take teacher-training courses are listed in the university catalog.
For information about the administration requirements, degree requirements, and collegiate policies of the respective colleges, see these pages:

Liberal Arts, 42-261
Business Administration, 262-279
Dentistry, 280-295
Education, 296-319
Engineering, 340-377
Graduate, 378-391
Law, 392-399
Medicine, 400-443
Nursing, 444-451
Pharmacy, 452-457

A
Academic achievement, recognition for, University, 10; Liberal Arts, 57; Business Administration, 204; Engineering, 341
Academic advising officers, 11
Academic programs, 9
Academic records, 11
Academic services, 19
Academic sessions, 9
Accounting, 286
Accounting Research, Ira B. McGladrey Institute of, 33, 268
Accreditation and associations, 9
Actuarial Science, Statistics and, 174
ACT test scores, 12
Advisory Code, 94
Administrative officers, 460
Admissions, general, 11; Liberal Arts, 57; Business Administration, 304; Dentistry, 282; Education, 297; Engineering, 341; Graduate, 302; Law, 303; Medicine, 404; 406; Nursing, 440; Pharmacy, 453
Advanced placement program, Liberal Arts, 59
Advisors, faculty advisors, 19; Nursing, 446
Aerospace Military Studies (Air Force ROTC), 60
Affective Disorders, Collaborative Studies of, 34
Afro-American Cultural Center, 21, 63
African-American Worlds Studies, 61
African Studies Program, 65
Aging Studies Program, 66, 379, 445
Agricultural Medicine and Occupational Health, Institute of, 439

ABS Training and Education Center, Midwest, 33
Alumni Association, The University of Iowa, 41
Alzheimer's Disease Research Center, 33, 390
American Studies Program, 67
Anatomy, 498
Anesthesiology, 410
Anthropology, 69
Application deadline, fees, procedure, 12
Applied Mathematical Sciences, 164, 379
Art and Art History, 36, 72
Art, Museum of, 264
Arts Center Outreach, 39
Arts, Iowa Center for, 35
Asian Languages and Literature, 89
Associated Medical Scientists, Division of, 406, 410
Association, 9
Asthma and Allergic Diseases Center, 33
Astronomy, Physics and, 203
Auditorium Center, 458

B
Biochemical Engineering, Chemical and, 354
Biochemistry, 84, 417
Biology, 85
Biomedical Engineering, 350
Biomedical Engineering, Iowa institute of, 354
Biophysics, Physiology and, 457
Birth Defects and Genetic Disorders Unit, 34
Boek Center for the, 33
Botany, 89
Broadcasting and Film, 40, 102
Business Administration, College of, 282-293, Accounting, 289; accounting research, 282; Certificate in International Business, 283; Economics, 271; Entrepreneurial Management, 286; Executive Development Center, 286; Finance, 274; Financial Markets Institute, 288; Industrial Relations Institute, 298; Ira B. McGladrey Institute for Accounting Research, 268; Institute for Economic Research, 282; Labor Center, 288; Management and Organizations, 275; Management Center, 262; Management Sciences, 270; Manufacturing Productivity Center, 208; Marketing, 278; Small Business Development Center, 268

C
CEU (Continuing Education Unit), 456
Campus Information Center, 21
Campus Programs and Student Activities, 21
Campus visits, 13
Cancer Center, 402
Cardiovascular Research Center, 401
Career information, placement services, 20
Career Information Center, 22
Catalog information, 3
Center for the Book, 33
Center, 33
Central research facilities, 27
Chemical and Biochemical Engineering, 304
Chemistry, 91
Chinese/Indian-American Cultural Center, 21
Chinese (Asian Languages and Literature), 80
Civil and Environmental Engineering, 359
Classics, 95
Civic Pride Research Center, 33
Clinical Research Center, 401
Coal/Coal Replant Research Center, 33
Code of Student Life, 23
Codes, Policies, and Students' Rights, 23
Collaborative Studies of Addictive Disorders, 34
College-Level Examination Program (CLEP), 59
Communication (majors), 100
Communication Studies, 98
Communication education, 99
Communication research, 101
Communication Studies, Iowa Center for, 151
Communication, (Journalism and) Mass, 59
Comparative Legislative Research Center, 33
Comparative Literature, 104
Computer-Aided Design, Center for, 349
Computer-Aided Engineering, Center for, 33
Computer-Assisted Image Analysis Facility, 27
Computer Engineering, Electrical and, 365
Computer Science, 165
Computing Center, 39
Conferences and institutes, Center for, 456
Obstetrics and Gynecology, 430
Off-campus classes, 458
Off-campus housing, 27
Old Capitol, 49
Operative Dentistry, 168
Optometry, 430
Oral and Maxillofacial Surgery Center, 33
Oral and Maxillofacial Surgery, 250
Oral Pathology and Prosthodontics, 298
Orientation Services, 3
Orthodontics, 234
Orthodontic Biomechanics Laboratory, 34
Orthopaedic Surgery, 431
Other Services, 40
Otorhinolaryngology—Head and Neck Surgery, 472

P
Part-time jobs, 15
Pathology, 437
Pediatric Dentistry, 291
Pediatrics, 436
Periodontics, 292
Pharmaceutical Services, 34
Pharmacology, 435
Pharmacy, College of, 452–457; admission, 453
Philosophies and Ethics of Politics, Law, and Economics, 168
Philosophy, 190
Physical Education, Division of, 192
Physical Education and Sports Studies, 206
Physical Education Skills Program, 193
Physical Education, Teacher Preparation Program, 199
Physical Therapy, 413
Physician Assistant Program, 415
Physics and Astronomy, 201
Physics and Biophysics, 43
Placement Services, career information and, 10;
Education, 259; Engineering, 346
Planning, Policy, and Leadership Studies, 324
Political Science, 204
Portuguese, Spanish and, 226
Presidential Scholarships, 15
President’s List, 10;
Business Administration, 264; Engineering, 341
Preventive and Community Dentistry, 193
Preventive Medicine and Environmental Health, 458
Printing Department, 41
Probation and dismissal, Liberal Arts, 55
Professional improvement, Nursing, 448
Professional and honorary societies, 10
Programs in Letters, 155
Project on Rhetoric of Theory, 34
Psychodontology, 294
Protein Structure Facility, 29
Psychiatry, 440
Psychological and Quantitative Foundations, 331
Psychology, 712
Public Affairs, Institute of, 459
Public Policy Center, 31
Publications, University Relations, 41

R
Radiation Biology, 441
Radio broadcasting services, 439
Radiology, 642
Reading Lab, 20
Recent History of the United States, Center for the Study of, 47
Records, 14
Recreational Services, 21
Refine schedule, 14
Regional Exchange Program, 14
Regents, 20
Registration, 14
Religion, 218
Research activities, 27
Reserve Officers Training Program (ROTC),
Air Force, 60; Army, 179
Residence, determining, 13; 495
Residence halls, 22
Rhetoric Program, 221
Rotations, Curriculum, 101
Robert McDonald House, 37
Russian, 291

S
SAT test scores, 12
Satire (Asian Languages and Literature), 65
Saturday and Evening Class Program, 458
Scholarship, 15
Science Education, 223
Science Education Center, 323
Secretaries, academic, 19
Seminar, academic, 9
Seminars, policy on, 24
Small Business Development Center, 33, 188
Social Studies Education, 277
Social Work, 277
Sociology, 272
Sororities, 23
Soviet and East European Studies, 236
Spanish and Portuguese, 239
Special Resources at Iowa, 25
Special Support Services, 21
Specialization within degree program, Liberal Arts, 44
Specialized Child Health Services, 37
Speech and Hearing Clinic, Wendeck
Advisors, 38
Speech Pathology and Audiology, 244
Speech Pathology and Audiology, Counselor
on, 36
Sponsored Programs, 59
Sports Studies, Physical Education and, 100
Statistical Consulting Center, 177
Statistics and Actuarial Science, 174
Student accounts, payment of, 14
Student Activities, Campus Programs and, 21
Student complaints concerning faculty
affairs, 24; Engineering, 347
Student Health Service, 22
Student Life at Iowa, 18
Student rights, 21
Surgery, 472
T
Teacher certification services, 298
Technological Innovation Center, 31
Telecourses, 458
Testing Program, Iowa, 295
Theater Arts, 250
Theater, 329
Transfers, 20
Transfer students, Liberal Arts admission, 37
Translation Laboratory, 34
Transportation Studies, 293
Tuition and fees, 14
Tutorial labs, 20

U
Undergraduate Academic Advising Center, 19, 245
Undergraduate Scholar Assistant Program, 10
University Program, Liberal Arts, 46, 235
University Hospital School, 37
University House, 30

505
University Libraries, 34
University of Iowa Foundation, 41
University of Iowa Health Center, 35
University of Iowa Hospitals and Clinics, 55
University of Iowa Press, 41
University Relations, Office of, 41
University Theatres, 39
Urban and Regional Planning, 256
Urology, 443

V
Veterans Affairs Medical Center, 38
Veterans Services, 22
Video Center, 459

W
WEUI (radio), 458
Weedall-Johnson Speech and Hearing Clinic, 38
Weeg Computing Center, 31
Windhover Press, 40
Women’s Resource and Action Center, 22
Women’s Studies, 259
Writers’ Workshop, 40, 113
Writing Lab, 20
Writing programs, 40, 113